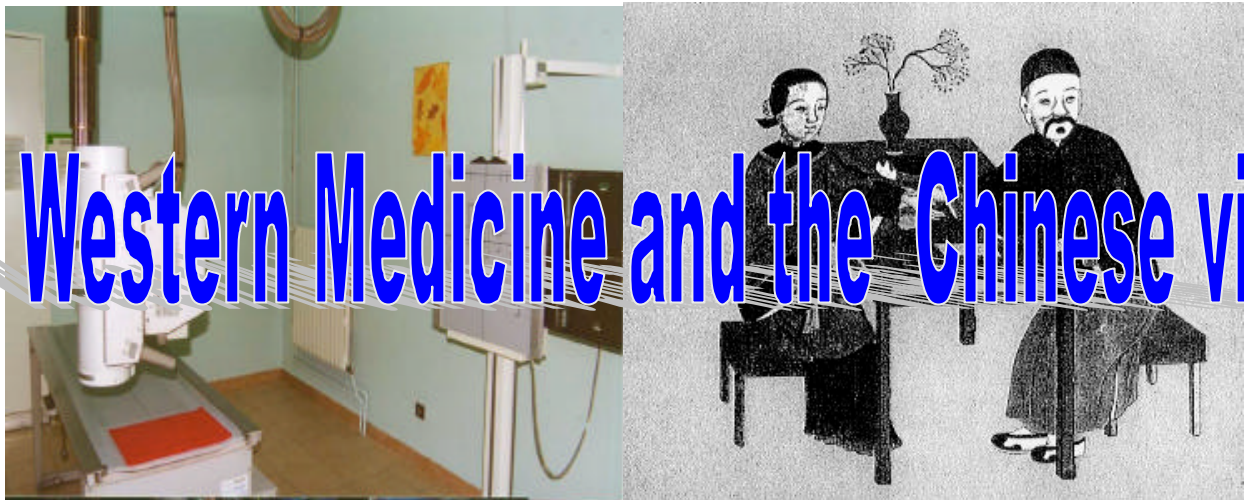




**STATE SECRETARIAT FOR INDUSTRY
SCIENTIFIC AND TECHNICAL RESEARCH COMMITTEE ON
SAFETY AND HEALTH IN EXTRACTIVE INDUSTRIES**

**SYMPOSIUM ON THE FOLLOW-UP AND TREATMENT
OF PNEUMOCONIOTICS**



Papers and debates

Paris, 18 November 1999

SUMMARY

Introduction: Why such a symposium?	<i>M. COCUBE</i>	03
1st part Western medicine		
Pneumoconiosis and associated pathologies	<i>D. LAFON</i>	05
1945-2000 half a century of diagnostic and therapeutic progress	<i>M. MARQUET</i>	06
Respiratory rehabilitation	<i>J-C. PUJET</i>	16
Present research and prospects	<i>D. LAFON</i>	19
<i>Debate</i>		21
<i>Conclusion by Mr MARQUET</i>		
22		
2nd part Chinese medicine		
Approaching Chinese medicine from an anthropological stance	<i>T. HOR</i>	24
Clinical experience	<i>P. WANG</i>	36
<i>Debate</i>		37
Presentation of the main aspects of Chinese medicine studied	<i>M. COCUBE</i>	38
<i>Acupuncture</i>		
Practice of acupuncture at the surgery	<i>O. DUHAMEL</i>	39
Practice of acupuncture in functional readaptation	<i>P. SAUTREUIL</i>	42
The scientific viewpoint on acupuncture, consensus conference in 1997 in the USA	<i>L. KOCH</i>	44
<i>Debate</i>		47
<i>Conclusion by Mr KOCH</i>		54
<i>Qi gong</i>		
Videocassette: qi gong helping in everyday life	<i>M. KOCH</i>	55
Videocassette: therapeutic qi gong	<i>O. DUHAMEL</i>	57
Bibliographic overview on qi gong	<i>M. COCUBE</i>	62
An experiment of treating silicotics by qi gong	<i>B. MAHIEU</i>	66
<i>Debate</i>		68
<i>Conclusion by Mr COCUBE</i>		71
<i>The Pharmacopoeia</i>		
The pharmacopoeia in Chinese medicine: General presentation, case of pneumoconiosis	<i>P. WANG</i>	72
Recent work in China on pneumoconiosis	<i>P. WANG</i>	76
<i>Debate</i>		78
<i>Conclusion by Mr OBRINGER</i>		82
Closure of the symposium		83
List of participants		84

INTRODUCTION: WHY SUCH A SYMPOSIUM?



M. COCUBE

1 - Why a symposium on the ‘Follow-up and treatment of pneumoconiotics’?

The answer is quite simply because the health of miners is a major concern for us and the convening of a symposium is a good means of drawing attention to the subject.

There is indeed a great risk, given the indisputable decline of collieries, of considering this subject as secondary (we daren't say 'minor'). That's not at all the case. The decline and then the cessation of coal mining does not eradicate pneumoconiotics overnight and new cases are identified daily. Beyond this sector, cases of pneumoconiosis are not rare in other extractive industries and in a number of other industrial sectors. Lastly, working on this topic cannot but be useful for other environmental pulmonary pathologies.

A fearsome stumbling block in the case in hand is that of the apathy entailed by the absence of any significant therapeutic progress whereas medicine is making spectacular advances in other fields. We answer this with our determination to explore all possible channels. Reviewing the advances of the past decades should moreover encourage us to forge ahead.

One of the means of finding new possible channels is to use a complete change of approach. We have chosen to change cultural context by taking an interest in oriental medicine.

This is indeed the interest of a symposium: taking stock of what is done and what can be done by comparing experiences and broadening as far as possible the methods of approach; here, by calling to this table the bearers of an entirely different cultural tradition.

2 - Why Chinese medicine?

There are many reasons.

Chinese medicine obliges us to make a great 'decentration' effort. It is a cultural shock for us and, in passing, it can be noted that this shock was felt particularly by one of our great predecessors, Mr LOCHARD, *Inspecteur général des Mines*, and Chairman in 1945-1946 of our Committee—which was then known as the *Commission du Grisou*—after having been *Chef du service des mines* of Indochina. The *Charbonnages du Tonkin* were, it can be recalled, one of the wealths of the French colony and then of Vietnam today.

The major reason for this choice resides in the fact that China today is the world's biggest coal producer with a billion tons produced every year. This order of magnitude is more than ten times greater than that reached by French collieries at the height of their activity. Unsurprisingly China also has the greatest number of diagnosed pneumoconiotics—

several hundred thousand. (In France, today we have some 25 000 sufferers after a peak of twice that number twenty years ago).

Prevention and the treatment of pneumoconiotics are therefore major concerns there and it will be entirely beneficial to us to see what the Chinese do in this field, particularly in traditional medicine. The combination of this medicine with western medicine is moreover the subject of much research within China nowadays.

In addition, Chinese medicine is one of the non-conventional medicines (complementary and alternative medicines—CAM) on which the European Parliament has recommended a study by the European Commission with the necessary work being undertaken to validate such therapies and with credits being assigned to it from 1994 on.

At the session of Thursday 29 May 1997 the Parliament invited for example the Council 'to promote the development of research programmes in the field of non-conventional medicines integrating the individual and holistic approach, the preventive role and the specific characteristics of non-conventional medical disciplines, ...'.

We therefore hope, at the end of today's exercise, to make a positive contribution to the analysis undertaken at European Union level.

This symposium organised by the CORSS (Commission des recherches scientifiques et techniques sur la sécurité et la santé dans les industries extractives—Scientific and Technical Research Committee on Safety and Health in Extractive Industries) will comprise two main parts.

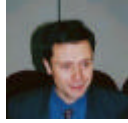
The first part will give a presentation of pneumoconioses and associated pathologies. Then the methods for monitoring pneumoconiotics will be presented along with the treatment given to them. A glimpse over the past fifty years (since the nationalisation of the coal mining industry soon after the Second World War) will show the progress accomplished during this period. Respiratory rehabilitation will be addressed in its own right. A third section will be devoted to a presentation of ongoing research work in western medicine and the prospects of that medicine.

The second part will address the Chinese approach to the disease and its sufferers. Three main aspects of Chinese medicine—acupuncture, qi gong and the pharmacopoeia—will be examined... There are other aspects such as massages or moxibustion which we will not address, except in passing, for want of time. For each of the aspects tackled, a general presentation will be given with a statement of its problems and the validation criteria in view of the requirements of contemporary science.

The contribution of therapies to cases of pneumoconioses and more generally to cases of pulmonary pathologies will be discussed along with future prospects, research to be undertaken and experiments to be conducted.

1st part Western medicine

PNEUMOCONIOSES AND ASSOCIATED PATHOLOGIES



D. LAFON

Pneumoconiosis literally means dust in the lungs. The disease therefore includes a variety of pulmonary pathologies depending on the type of dusts inhaled. Some merely involve an overload of the lungs, without affecting the pulmonary function, whereas others entail major lung diseases, particularly due to fibrogenic dust.

As part of this symposium aimed at comparing the western and Chinese visions of the monitoring and treatment of pneumoconiosis, we propose to briefly describe pneumoconiosis and associated pathologies by basing ourselves on the example of silicosis.

The clinical signs are often scanty at the outset and the disease is discovered on account of its radiological manifestations.

These show the classical anatomic lesions of silicosis: confined fibro-hyaline nodules, with or without a confluence. In some cases diffuse pulmonary fibrosis can be observed.

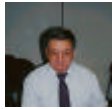
Complications may also be visible, for instance emphysema bullae, owing to retraction of the masses.

Clinical symptoms appear only after a few years: dyspnea on effort at the beginning, permanent dyspnea at the end, and a worsening of general health involving weight loss, asthenia, coughing and thoracic pains.

These symptoms often in fact expose the many complications or associated pathologies:

- infections: more frequent in these weakened organs. Tuberculosis was classical, but also intracavity aspergillomas or atypical mycobacterial infections.
- Chronic pulmonary heart disease, resulting from a reduction in blood formation and chronic respiratory insufficiency;
- Obstructive chronic bronchitis;
- Emphysema;
- Pneumothorax;
- Necrosis of the pseudotumoral masses;
- Pulmonary cancer: an increase in pulmonary cancer cases among silicotics is now a proven fact;
- Silicotic nephropathies.

1945 - 2000
HALF A CENTURY OF DIAGNOSTIC AND THERAPEUTIC PROGRESS



M. MARQUET

MEANS OF DIAGNOSING PNEUMOCONIOSES AND THEIR COMPLICATIONS

A - Medical imagery

Radioscopy:

Used until the 1970s.

Advantages:

- Allows respiratory kinetics to be visualised.

Disadvantages:

- No filing of images, therefore no possibility of making a precise assessment of evolutionary potential;
- Lack of precision of the images;
- A single examiner: short examination time;
- High radiation of the patient and doctor.

Radiophotography:

Adapted to mass screening;

Mobile equipment; large output; small size images easily filed; rapid interpretation.

Evolution of films

- At the beginning: flexible 35 mm format;
- Progressively appearance of 7x7 cm then 10x10 cm and 11x11 cm formats;

Advantages:

- Possibility of double interpretation;
- Improvement of image definition with an increase of the film surface;
- Lesser radiation of the patient.

Disadvantages:

- Insufficient definition for fine images;
- Documents not accepted in expertise procedures;
- No reference image.

Standard radiography:

35x35 mm image.

- Made on paper film at the beginning (1945 / 1950), then use of transparent negative films;
- Evolution of emulsions that have become ever finer and more sensitive (shorter exposure times)

- Evolution of cassettes, of intensifying screens, and of grids;
- Switch from low voltage images (60 kV) to high voltage images (110 kV) allowing the rib cage to be effaced in order better to show the pulmonary parenchyma;
- ILO reference images.

Digitised images:

- Provide constant quality (penetration, contrasts);
- Image definition depends on the quality of the matrix (number of pixels);
- Definition lower than that of the silver grain;
- Ease of filing without any risk of spoiling documents;
- Possibility of processing images and absence of reference images.

Tomographies:

- Used until the beginning of the 1990s;
- Allow pulmonary exploration by a slicing in successive vertical planes, eliminating images built by superposing the various pulmonary structures.

The scanner:

- Has progressively replaced tomographies;
- Pulmonary exploration by horizontal sections from 1 mm to 1 cm thick;
- Quality has considerably improved in the past five years (higher performance matrices);
- Shorter acquisition time (spiral scanners);
- Possibility of processing images (e.g.: summation of contiguous millimetre sections in order to assess a micronodular opacity);
- High sensitivity in diagnosing interstitial images and emphysematous lesions barely visible in standard radiography and invisible in tomographic sections;
- High sensitivity in diagnosing pleural images (pleural plaques in asbestosis).

Echography:

- Uses the ultrasounds technique;
- Developed from the 1980s on;
- Interest in exploring the cardiac cavities (3D echo - Doppler echo).

NMR:

- Uses the magnetic fields technique;
- Supplies images of customarily radiotransparent soft tissues;
- Acquisition time currently too long, which does not allow its use in pulmonary exploration.

B - Histology

Interest in tables 30 bis¹: 30 A,C,D;
Allows a definitive diagnosis;
Accepted as diagnostic proof in table 25².

Sampling methods:

- Anatomic parts (surgery, autopsies);
- Transbronchial biopsies during fibroscopies;
- Transthoracic biopsies guided by scanner or brightness amplifiers;
- Biopsies by pleuroscopies (mesotheliomas);
- Bronchoalveolar lavages.

Endoscopy progress (from rigid endoscopy to fibroscopy)

C - Serodiagnostics

- Immunoelectrophoresis used in diagnosing aspergillosis;
- Markers of cancer development;
- Search methods (sensitive crystallisation - search for markers of development potential).

D - Bacteriological diagnosis

- Mainly in the early diagnosis of tuberculosis.

THERAPEUTIC MANAGEMENT

A - Reminder on tests on stabilising the development of silicosis

cf. above: Present research and prospects

B - Management of respiratory insufficiency and its complications

Treatment of chronic respiratory insufficiency

- Progress in treating infections;
- Progress in reanimation techniques;
- Progress in material means allowing patients to be kept at home (mobility of heavy equipment such as assisted ventilation, oxygenotherapy);
- Progress in medical monitoring (blood gases - respiratory kinesitherapy).

¹ French decree no. 96-446 of 22 May 1996 on occupational diseases. The table 30bis concern bronchopulmonary cancer caused by asbestosis.

² Occupational diseases caused by silica dust.

Treatment of tuberculosis

- A major complication in 1945;
- Vaccinations;
- Earlier diagnosis;
- Treated effectively in general, without after-effects nowadays;
- (Statistical results).

Treatment of chronic pulmonary heart

- Currently the most serious complication;
- Use of long-term oxygenotherapy protocols.

Treatment of other complications (pneumothorax-aspergillomas, aseptic necroses, etc...)

C - Therapeutic management of MP 30³ (Asbestosis)

Treatment of pulmonary fibrosis (30 A)

Treatment of bronchial cancers (30 C 30 bis)

- Place of surgery;
- Chemiotherapy;
- Notion of associated cancer cofactors:

*Non professional (tobacco)

*Professional (wood dust +asbestos in moulding powders).

Treatment of mesotheliomas

Essential dedramatisation for table 30 B

FUTURE PROSPECTS

- Above all, prevention of exposure;
- Early removal from the risk on the first signs of occupational diseases (MP 25);
- More effective cancer treatment.

It should however be remembered that a destroyed lung does not regenerate and that all you can do is make best use of what remains.

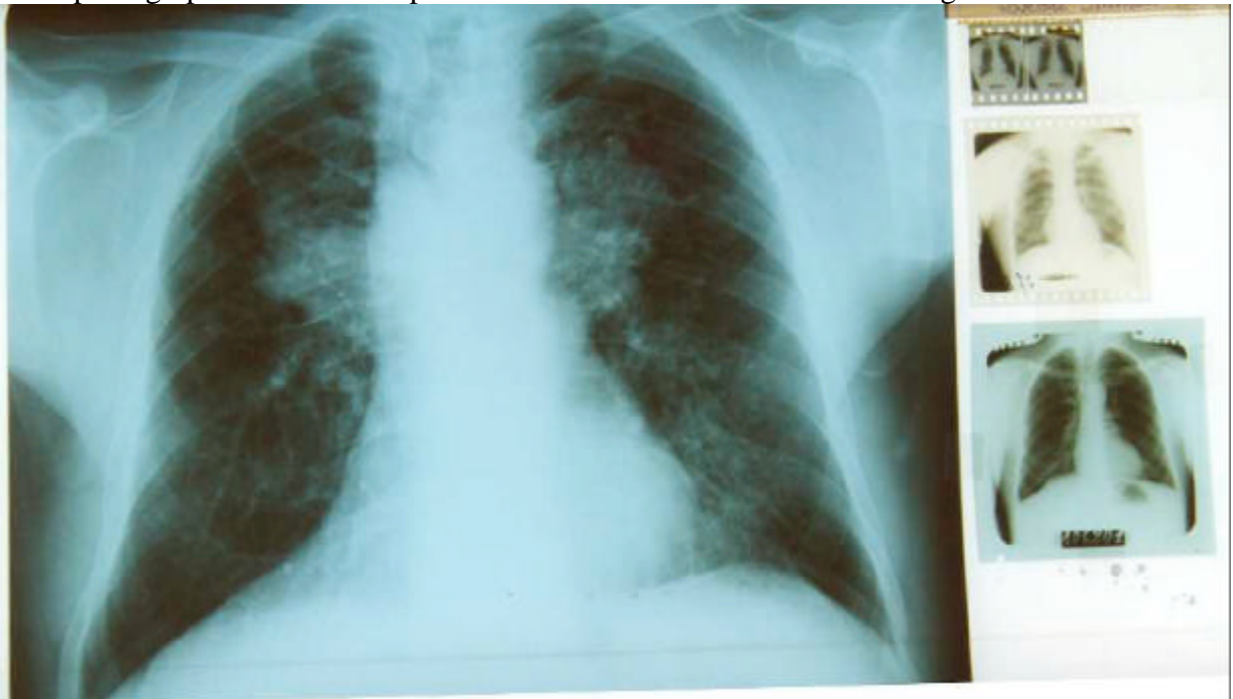
³ MP 30: Occupational Disease no. 30 in France (asbestosis). (Commission des maladies professionnelles du Conseil supérieur de la prévention des risques professionnels)

CONVENTIONAL RADIOGRAPHY

Radiography room



Radiophotographic formats compared with a standard 35 cm x 35 cm image.

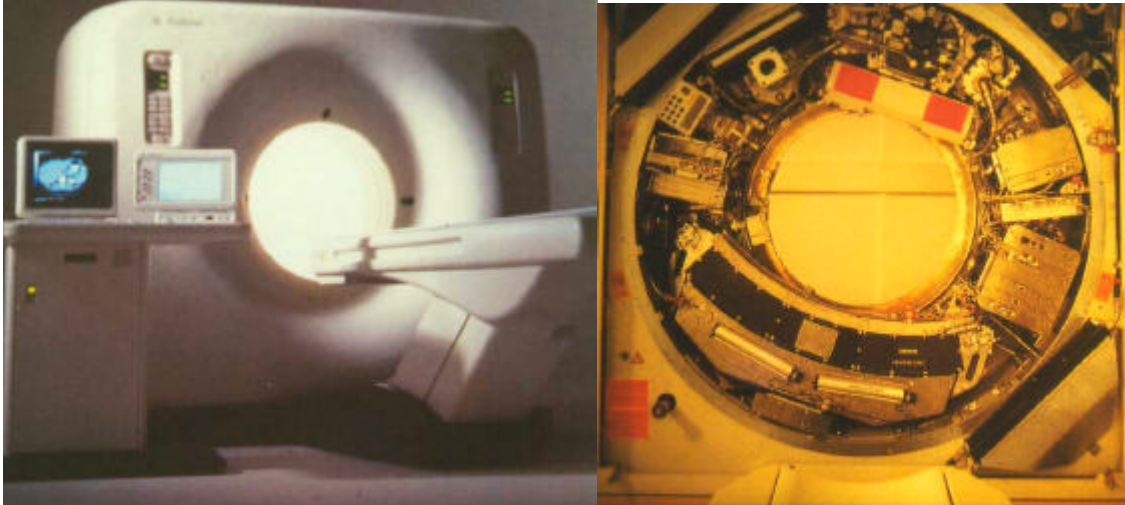


Radiophotographic images:

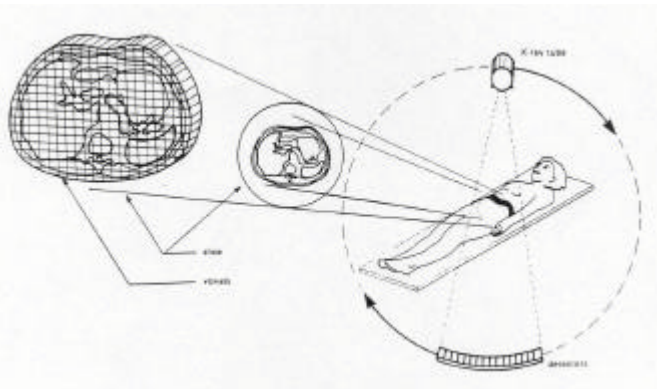
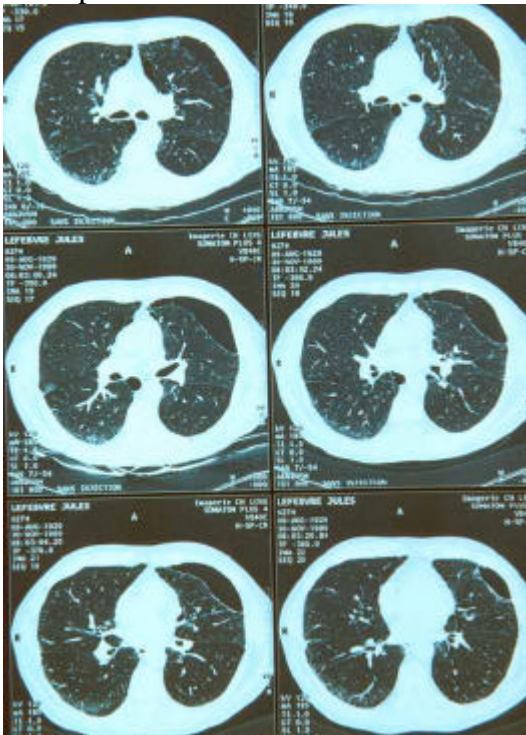
- 24 mm x 18 mm (circa 1946 – 55)
- 7 cm x 7 cm (circa 1955 – 65)
- 10 cm x 10 cm (circa 1965 – 90)

THE SCANNER

Equipment



Principle



It allows all the human body to be explored in 1 cm to 0.8 mm thick sections.
Used from the beginning of the 1990s.
Better and better performances, with short acquisition times and sharper digital image definition. Allows a 3D reconstitution currently used in virtual fibroscopy.

FUNCTIONAL RESPIRATORY TESTS

Traditional spirometry has been replaced by the computer which allows the simultaneous study of exhaled and inhaled rates and volumes in the ambient air.



The study of blood gases by radial arterial puncture or percutaneous measurement of oxyhemoglobin saturation has become an essential complement in assessing respiratory insufficiencies.



TREATMENT OF RESPIRATORY INSUFFICIENCY

Long-term oxygenotherapy with ambulatory equipment (use of liquid oxygen allowing greater autonomy).



The main reserve contains the equivalent of 26 to 40 cu.m of oxygen, portable equipment allowing approximately 7 hours autonomy at the rate of 2 litres per minute, the customarily prescribed oxygen dosage.

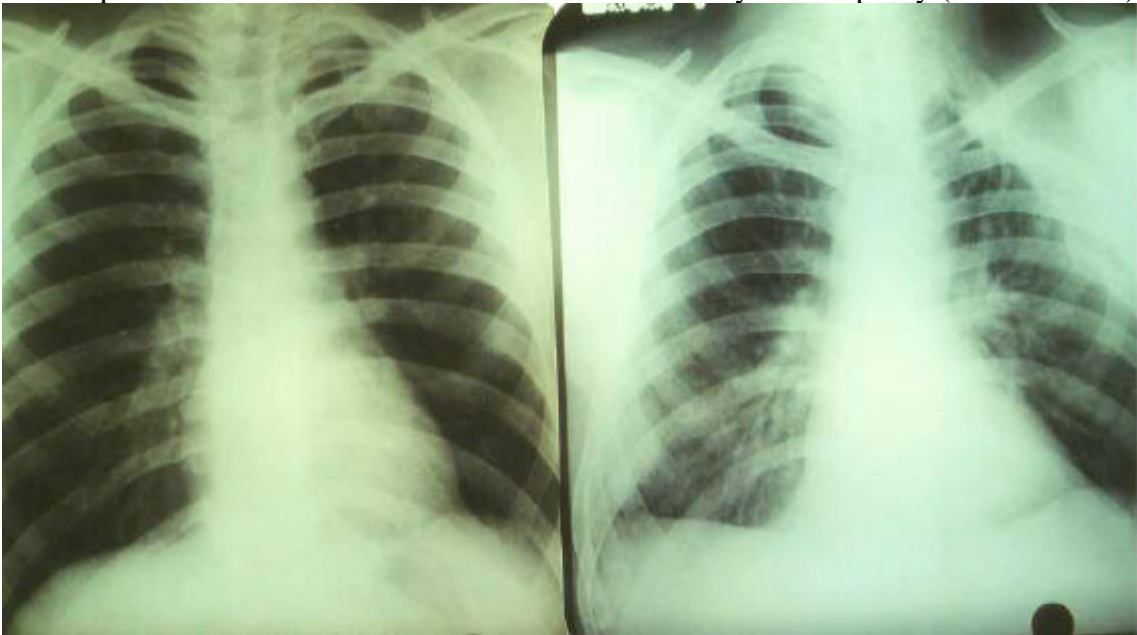
Portable equipment is refilled by transfer from the main reserve.

Of course other sources of oxygen remain available, most often stationary, such as oxygen extractors, or mixed use sources with bottles of various capacities.

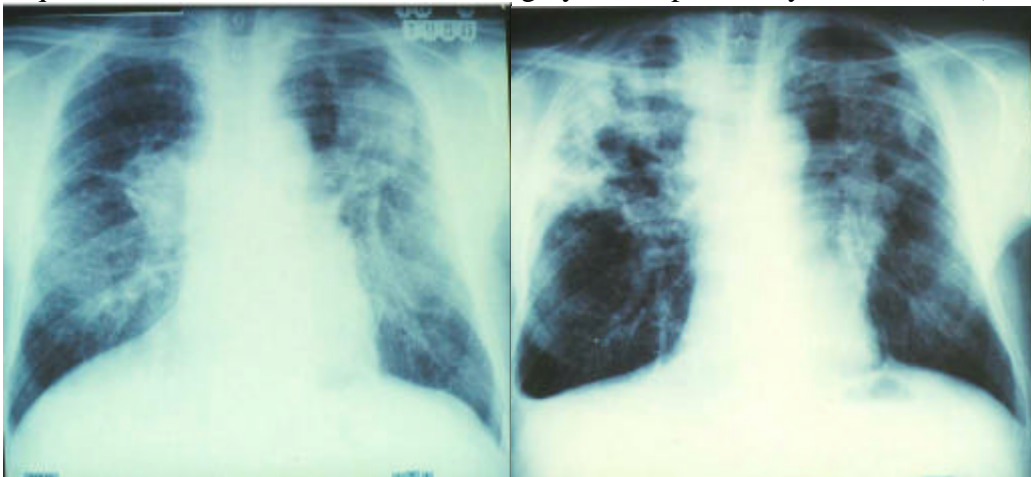
Long-term oxygenotherapy administered 18 to 24 hours a day has considerably improved the prognosis of right cardiac insufficiencies, a complication of respiratory insufficiencies.

RESULTS OF THE TREATMENT OF TUBERCULOUS COMPLICATIONS

Consequences of the treatment of a tuberculous cavern by thoracoplasty (exeresis 1950)

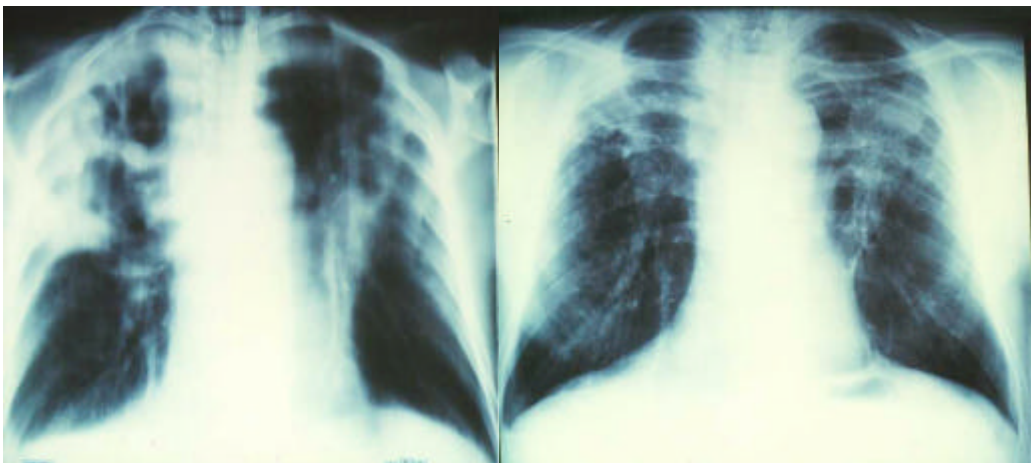


Consequences of medicinal treatment of a highly developed cavity tuberculosis (1980s)



1980

1982

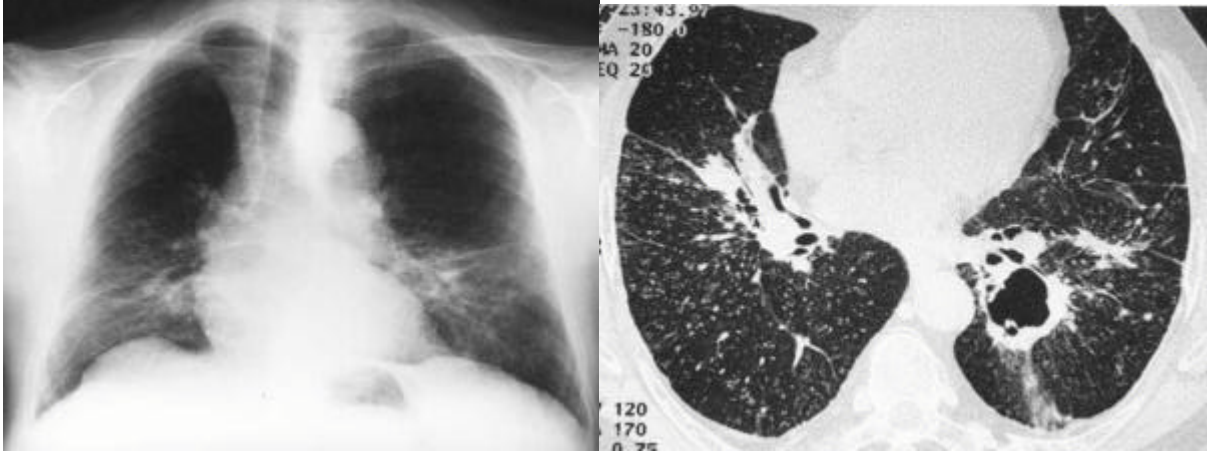


1982

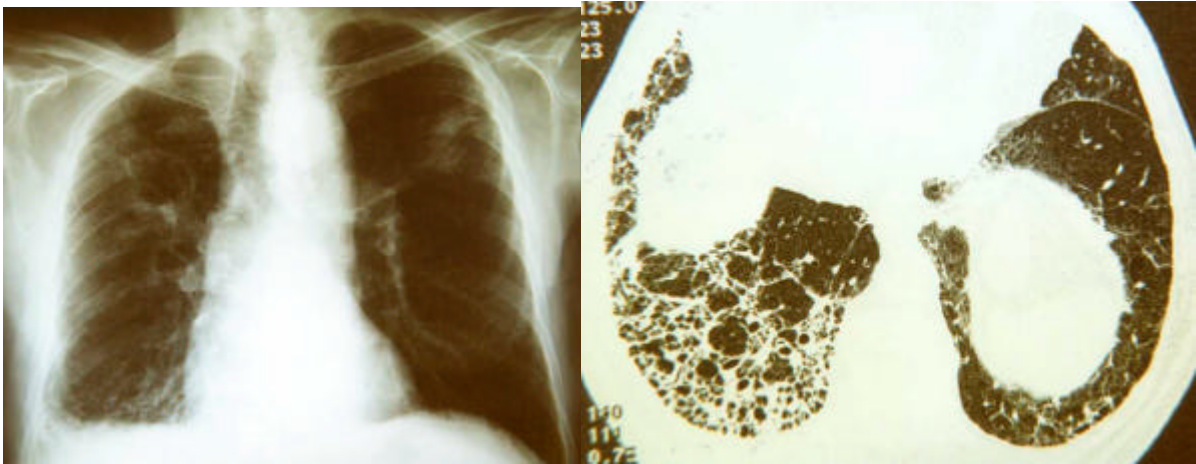
1983

INTEREST OF THE SCANNER IN MONITORING PNEUMOCONIOSES (EXAMPLES)

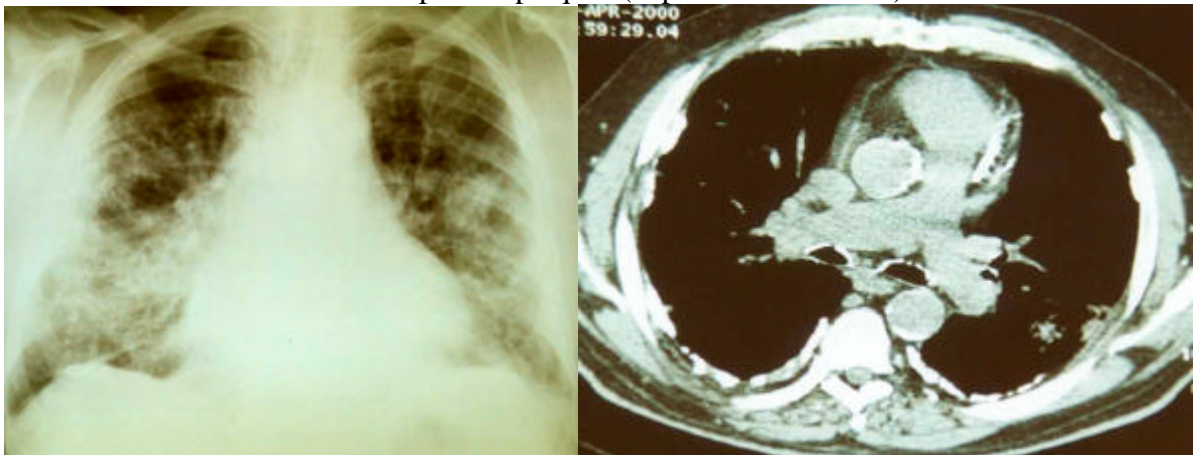
Highlighting of retrocardiac cavity images barely visible on standard radiographies



Development of an interstitial fibrosis



Calcified pleural plaques (exposure to asbestos)



RESPIRATORY REHABILITATION



J-C. PUJET

Respiratory rehabilitation, which has been individualised for more than twenty years, and which is the source of a growing number of scientific publications in the best journals, is aimed at acting in a personalised manner on all the factors which, in a given patient, lead to a breathlessness (dyspnea), a reduction in physical activities (walking perimeter...) and a deterioration in the quality of life.

The twin aims of this 'medical art' are to:

? Improve physiological and psychological scores:

- ✍ Ventilatory and muscular mechanical parameters ...
- ✍ Cognitive parameters: attention, memory, intellectual capacities ...
- ✍ Emotional parameters: anxiety, depression, denial, resignation...

? Adapting the patient to his physical handicap by influencing his behaviour regarding the disease and by helping him to set himself new health rules.

This entails a multidisciplinary programme integrating education, help in stopping smoking, psychosocial treatment, respiratory kinesitherapy, nutritional treatment, and above all re-training in exercise.

Population concerned:

The people concerned are patients, often aged between fifty and eighty, presenting dyspnea on effort which limits their daily activities, despite maximum pharmacological treatment:

- ? 7% cannot wash or dress;
- ? 25% cannot go shopping or do odd jobs;
- ? 31% cannot use any means of public transport;
- ? 80% are unable to go on holidays ...

In this population we mainly find patients suffering from chronic obstructive bronchopneumopathy (COBP, bronchitis caused mainly by nicotine or secondarily of occupational origin), emphysema—primary or secondary—with sometimes a slight participation of asthma, but also patients suffering from bronchiectases, kyphoscolioses, diaphragmatic paralyses—after heart surgery, major sequelae of tuberculosis ...

Overall, they are mainly patients with a serious obstructive ventilatory disorder: FVC included between 50 et 30% of the theoretical values, or a restrictive disorder of at least 40%.

Education:

The aim is to improve knowledge of and self-management of the disease by including the lifestyle and the observance of treatments, with a view to the greatest possible autonomy. Education should also help improve self-esteem, strengthen positive affects while reducing the handicap sensation, and better manage symptoms such as dyspnea, and also anxiety and depression.

Respiratory kinesitherapy:

Bronchial drainage for patients with bronchial hypersecretion: controlled cough with increased expiratory flow;

Ventilation by pursed-lip breathing, ventilation with the thorax leaning forward, thoracoabdominal synergy;

Learning about energy saving in everyday life.

Nutritional monitoring:

In COBPs there are two situations with adverse effects on exercise tolerance:

- ? Wasting caused by hypermetabolism of the ventilatory muscles, limiting muscular performance globally, which justifies prolonged oral caloric supplementation corresponding to an increase of at least 30% of caloric intakes.
- ? Excess weight, prejudicial to exercise tolerance, which justifies a balanced and permanent restriction of caloric intake while keeping muscle mass.

Re-training in exercise:

The patient can re-train in exercise by muscular reconditioning which shifts the transition threshold of anaerobic muscle metabolism towards more and more strenuous exercise.

The peripheral muscles rather than the respiratory muscles are worked by re-training in exercise. The type of training involved is walking on various types of terrain, cycling, swimming, rowing, and gymnastics in small groups. Its efficacy is verified in programmes comprising 2 to 4 sessions (30 to 45 minutes, with an intensity limited to the threshold at which dyspnea appears) for 4 to 6 months at specialised ambulatory centres rather than at hospitals, and with continuation of exercise at home in a gym corner. In effect the improvement is retained only if training is continued at home at least twice a week for life.

Among the worst affected sufferers (desaturating on effort or permanently) oxygen administration raises the possibilities of re-training in exercise by delaying diaphragmatic fatigue and by avoiding any risk of right cardiac insufficiency.

Results:

The following has been observed:

- ? An improvement in the quality of the various aspects of life: physical mobility, dynamism, energy-fatigue, emotional reactions, sleep, social isolation, perception of the general state of health;
- ? Decreasing recourse to treatment (emergency visits, hospitalisations, reanimations);
- ? A decrease in ventilatory needs and in the sensation of dyspnea for a given effort, improving exercise tolerance and performance (for example assessed by walking tests measured for 6 to 12 minutes—Mc Gavin test);
- ? On the other hand the ventilatory function and blood gases remain unchanged or at best stable for several years instead of getting worse every year.

Cost of respiratory rehabilitation:

These programmes reduce:

- ? The annual number of days of hospitalisation;
- ? And for the 10% of patients who still have an occupational activity, the number of days sick leave.

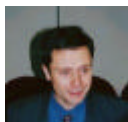
Limits:

Although we started such a programme as early as 1975 in our health centre specialised in respiratory diseases, and have since participated greatly in training our pneumologist colleagues, there are still not enough respiratory rehabilitation centres and they are mainly a private initiative. Their development is limited by the absence of a nomenclature and therefore of tariffing, unlike the rehabilitation of patients with coronary insufficiency in which we are also highly experienced. Nevertheless the trend has now taken off—in March 2000, Lille will be the venue of the fourth international congress on this therapy applicable to patients with respiratory insufficiency or cardiac insufficiency.

Conclusions:

Respiratory rehabilitation is the best treatment for chronic respiratory insufficiency as soon as patients complain of serious dyspnea on exercise. Better than bronchodilator drugs and corticoids, better than oxygenotherapy, it helps increase physical and therefore social and relational activity of everyday life, and therefore the quality of life of sufferers.

CURRENT RESEARCH AND PROSPECTS



D. LAFON

The past twenty years have seen the appearance of many studies on the toxicity mechanisms of mineral particles. Silica and asbestos fibres have often served as models.

The discovery of new mechanistic hypotheses has helped study the effect of a large number of new molecules, either in prevention or treatment. Most of these studies have remained at the animal experimentation stage for the moment. A few clinical tests have however been made.

The mechanisms that have allowed this progress can be summarised as follows:

1. Modification of the surface activity of mineral particles by the covering of their surface or a decrease in their capacity to generate oxygen radicals.
2. Increase in particular clearance.
3. Decrease in the activation of macrophages and the production of oxidants.
4. Decrease in the recruitment of inflammatory cells.
5. Decrease in the secretion of inflammation mediators.
6. Decrease in the secretion of growth factors
7. Decrease in collagen synthesis.
8. Decrease in cellular proliferation.

Three main categories of effects can summarise the action of the tested molecules.

1. Covering of the surface sites of particles

These are the oldest treatments. Aluminotherapy and the use of polyvinylpyridine-N-oxide gave rise to many experimental and clinical studies from 1970 to 1980.

The use of aluminium has been abandoned. PVNO is no longer used in European countries, which does not appear to be the case in China.

Amiodarone has been used more recently, but this treatment was soon abandoned owing to its toxicity.

2. Protection against oxidising stress

Many molecules have been tested for almost ten years now: tetrandrine, ascorbic acid, 21-aminosteroid, superoxide dismutase, catalase, carotene and vitamin A, cyclic adenosine 3':5'-monophosphate (cAMP).

All these molecules have been tested only experimentally on animals.

3. Inflammatory response and inflammation mediators

Mineral particles activate macrophages which produce cytokines. The latter recruit polynuclear cells and monocytes.

Growth factors are secreted, inducing the proliferation of fibroblasts and the synthesis of collagen.

Anti-interleukin-1 antibodies, PMN anti-rat antisera, anti-bFGFs, leukocytic anti-integrin antibodies CD 11 a and 11 b and anti-growth factor antibodies derived from platelets (PDGF) have thus been tested only experimentally on animals.

These studies are recent and many of them have been published in the past five years.

These publications as a whole show that a certain number of preventive or curative treatment leads are under study. The many mechanisms involved means that it is probably unlikely that a single treatment will be utilisable but it would be useful if studies were launched in the future on combined treatments.

The almost complete absence of research on this topic in Western Europe is to be observed, whereas countries such as China or eastern countries are highly present.

DEBATE

Mr AMOUDRU thanked the chairman for taking the initiative of this symposium. He stated that the statistics on pneumoconioses in France are mainly based on risk management (pensions created, entitlement to survivors' pensions, etc.); he observed the scarcity of detailed epidemiologic data (except for a few studies on collieries). This shortage is particularly detrimental as regards the development of new or revised tables on occupational diseases.

He recalled the longevity of the biopersistence of silica particles in the pulmonary parenchyma. In effect these particles keep their cytopathogenic power even when the subject is no longer exposed, which forms a specific difficulty as regards the preventive or therapeutic actions envisaged.

Mr COCUDE, speaking to Dr PUJET, wished to know the proportion of men and women concerned by respiratory rehabilitation and if different behaviours appear.

Mr PUJET: The proportion of men is higher concerning occupational and tobacco-caused diseases but women are beginning to catch them up regarding tobacco. Readaptation motivation is limited, firstly because of the low number of centres and doctors experienced in the therapy, and, secondly because some patients are both tobacco and alcohol addicts and must previously lose their addiction.

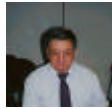
Regarding the therapy programme, women are seen to be stricter than men, but all progress normally when motivated. As for pneumoconiotics, rehabilitation proves the best therapy compared with drugs or oxygen, with an improvement of, for instance, fifty per cent of the distance covered in a six minute walk.

Mrs MINGAM: When Dr PUJET describes the respiratory rehabilitation of pneumoconiotics and the eloquent results he obtains, that makes me think exactly about the readaptation of chronic patients in pain: currently, in France, several functional reeducation centres or services propose effort re-training or physical reactivation programmes for chronic lumbago sufferers allowing them to rediscover an acceptable quality of life despite their painful handicap.

I am pleased to see that for two different types of pathologies the therapeutic approach to be adopted follows the same guideline.

Mr COCUDE asked Dr MARQUET to draw the conclusions of this first part regarding miners suffering from pneumoconiosis.

CONCLUSION by M. MARQUET



Despite the progressive closure of large collieries, silicosis will remain a topical issue for many years to come. However, given the scattering and small size of companies exposing their workers to siliceous dusts, knowledge on this pathology is likely to become dispersed and decline in the long run.

Apart from the few cases of silicosis that become acute generally because of massive exposure, the labour world will know only about the milder forms of the disease by the time people retire.

The organisation of post-occupational monitoring in the former coal basin of the Nord Pas de Calais a real observatory of pensioners suffering from silicosis has led to an awareness of the evolutionary potential of this disease which leads sooner or later to complete destruction of the lungs.

The various therapeutic tests such as the administration of aerosols of aluminium salts have not allowed this evolution to be stopped. However we have been able to observe a significant decrease in the number of silicoses, that could have become acute, in former miners removed from risk exposure at an early stage as soon as the first signs of the disease appeared. Also, the later the first radiological signs appear, the lower the evolution from the milder to the more acute forms of the disease.

For want of a curative therapy, prevention remains the master word. It should be applied at all levels: industrial by reducing dust levels, medical by the earliest exit of persons presenting radiological signs of a pulmonary disease.

The past fifty years have however seen therapeutic progress, particularly regarding the management of respiratory insufficiency and its complications. However, a lung that has been destroyed does not regenerate and the only solution consists in making best use of what remains.

To be effective this action should be undertaken early with active participation of patients. It firstly requires an improvement in health practices (suppression of tobacco, keeping of a physical activity, combating obesity, etc. ...).

Respiratory reeducation and effort re-training under the guidance of a physiotherapist can delay the appearance of a serious respiratory insufficiency and preserve autonomy to the maximum. They can be started during a cure at a spa but should be continued when back at home.

Even in the most serious cases, requiring long-term oxygenotherapy, autonomy should remain the therapist's first concern. Oxygenotherapy is now facilitated by the use of ambulatory equipment using liquid oxygen.

Lastly, treatment for sufferers of very serious respiratory insufficiency can now be given in the family setting by using ventilation equipment, putting an end to isolation in hospitals.

This appraisal may appear sombre but the management of the problem, currently facilitated by the geographic concentration of the affected population, has allowed effective treatment protocols to be developed. Let's hope that these bases contribute to the continuation of equally effective treatment for the isolated cases who are going to become the majority.

2nd part Chinese medicine

APPROACHING CHINESE MEDICINE FROM AN ANTHROPOLOGICAL STANCE



T. HOR

Unlike that of the other speakers, my speech will not focus on the subject of our symposium—pneumoconiosis. I have indeed been asked to introduce Chinese medicine generally in order to get western medicine to ‘rotate’ its view of this subject towards that of Chinese medicine itself. The task appears difficult. Apart from the considerable scope of the subject and the enormous distance between the two visions, such a speech could well cause, in the context of present-day society, controversies that would make us lose our impartiality and move us away from our goal.

So as to create above all an atmosphere of complicity and not of rivalry, I intend to use an anthropologic method: this introduction will therefore begin by simple observation, like that made by anthropologists arriving in new terrain.

This idea is based on the fact that, whatever our identity or intelligence, regarding this so-called ‘ancient’ medicine formed by the knowledge and know-how of the ancient Chinese, we are all contemporaries and this temporal simultaneity unites us. Together we are going to observe an ‘object’ outside our time. We will therefore find a basis allowing us to work together in our adventurous discovery of a different world, and we will also obtain insight into ourselves, shedding light on the system of references by which we interpret this world.

I have asked Mrs Wang to present us with a typical Chinese medicine consultation. At this first level we will simply note what we see without trying to understand, as if we were making a phonetic recording of a foreign language.

Consultation by Mrs Wang :

Listen (questioning), *See* (tongue examination), *Touch* (pulse taking), *Feel*.

Diagnosis: kidney kin deficiency

The therapeutic methods of Chinese medicine are mainly plant decoctions (the pharmacopoeia), cutaneous stimulations by needles (acupuncture) or its variations (moxibustion, massages), diets (dietetics), and physical and mental exercises (Qi Gong for example). These visible elements have built the image of Chinese medicine we have in France. This vision should be completed by the other lesser known disciplines—*Waiké* (treatment of fractures, of skin diseases ...) for instance.

These methods and diagnostic techniques such as pulse taking, tongue observation, etc. ..., remind us of the old days when the new technologies still did not exist. Therefore Chinese medicine has been called traditional, natural or unconventional medicine, etc. ..., but these images do not suffice to define Chinese medicine strictly speaking.

During our initial observation we observed that, using these special techniques, Mrs Wang discovered a ‘kidney Yin deficiency’ in the patient, which leads to the choice of a medicinal formula (or of a series of acupuncture points). This is the very heart of this practice.

Following her examination, Mrs Wang stated a ‘syndrome’ (*Zheng* in Chinese). The main point is to know how to distinguish, among a hundred or so syndromes, that which corresponds to the patient's state. Each syndrome is linked to treatments, which merely have to be memorised. Therefore, if he does not make a diagnosis with a distinction of syndromes, a practitioner cannot be considered to be initiated in Chinese medicine even if his instruments are highly exotic or his actions extremely natural and gentle.

This definition helps us to understand the character of Chinese medicine, yet two steps still appear unclear to us. How is a syndrome determined? How is it linked to the treatments that can cure it? By raising these questions we enter a second level at which we discern the internal logic of this ‘object’ we are observing as if we were trying to understand the meaning of each word and the grammatical rules of a foreign language.

The theory of Chinese medicine has borrowed greatly from Taoist philosophy, mainly from the principle of universality. According to that philosophy, the world originated from a single Qi (blast, often translated by ‘energy’).

This Qi is divided into Yin character and Yang character, the meeting of which generates the various elements of the universe, including living beings. Each of these, according to its nature, belongs to a given class and follows the ‘five movements’ principle.

ANNEX 1 a : The Yin-Yang symbol

ANNEX 1 b : The five movements

Man too is divided into five parts (five ‘organs’ and five associated viscera), each of which has a specific function via the Yin-Yang balance.

Healthy man is protected by «*Zheng qi*» (‘right Qi’)—the latter unifies man in his totality by means of the canals system (meridians). ANNEX 2

ANNEX 2: Meridians and points

But man also belongs to a global environment and ‘perverse qi’, of external or internal origin, can perturb the ‘right Qi’ and cause diseases. ANNEX 3.

ANNEX 3: External perverse Qi and internal perverse Qi

This perturbation of Qi can appear in the whole body, particularly by a change in the tongue and pulse. ANNEX 4 a and ANNEX 4 b.

These observable manifestations allow a doctor to distinguish the syndrome, in other words locate the perturbation and identify its nature.

To do so, diagnostic methods are essential. The two most current methods refer to the 'eight principles', to 'organs' and to 'viscera'.

ANNEX 5: The two most used diagnostic methods.

The final aim of treatment consists in eliminating perverse Qi and regulating right Qi. To do so it is necessary either to directly tonify Qi at certain places on the meridians concerned, or make it react indirectly by taking advantage of the different types of Qi in the various elements. This is how the therapeutic system came into being which, with highly sophisticated methods, claims to rebalance Yin-Yang so as to prevent or cure diseases.

Listening to all this account of the theory we feel as though we have entered a sacred world, a world of Qi invisibly connecting all the elements of the universe. We have understood that, thanks to this miraculous Qi, Mrs Wang has found the syndrome and that, thanks to the same Qi again, all her treatments are therapeutically effective.

A practitioner's behaviour thus finds its legitimacy in this perfect Qi logic. For an old Chinese man or for a contemporary imbued with orientalism or even esoterism, literary proof in the original classical texts is sufficient to make this sacred world credible. But obviously many of us are going to ask ourselves if this world really exists.

This question brings us to the third level of our perspective: we now wish to interpret and assess what the ancient Chinese have bequeathed to us. That's how the controversy began: some people consider that accepting such a superstitious system in the medical profession is an intellectual insult, whereas others feel that this age-old intelligence had discovered a truth that has been lost and that we should today decode the mystical language comprising terms such as Qi, Yin-Yang, meridian, etc...

All the attempts at decoding: translating Qi by 'energy', comparing the Yin-Yang relationship with the properties of certain molecules of the human body (particularly cAMP⁴ and cGMP⁵) or else using various techniques to offer evidence of the 'meridian' canals ... have scarcely stifled the controversy—quite the contrary.

To find common ground, we must look inwards following the precepts of anthropology. In effect, the controversy stems from the reference system we customarily use to assess the world. When we ask: 'Is Chinese medicine real?', there is a faith and an apriorism behind this question, in other words the truth can be known only by objective proof based on observations (by the bare eye or using instruments), which show us clear and reliable cause-effect relationships ; 'real' medicine—capable of preventing and curing diseases—must build its physiopathological, diagnostic and therapeutic system on this absolute truth.

⁴ cyclic adenosine monophosphate

⁵ cyclic guanine monophosphate (a component of DNA)

Probably because of this faith, modern western medicine has become ‘official’, ‘conventional’; nobody can have any doubt about its legitimacy based on anatomic, biological or genetic knowledge. However this scientific basis is absent in Chinese medicine. ‘Scientific or not’, that is the heart of the controversy.

Let us now return to what we have seen of this medicine. Unlike western medicine, Chinese medicine neglects to observe directly what happens inside the human body. It stresses the external expression of the body: the healthy state, the sick state and the cured state. With this empirical method it has accumulated a very rich clinical experience determining the relationship between a disease and effective treatment; this relationship is a de facto ‘truth’. However the explanation of these relationships is speculative and philosophical. In this sense the theoretical system of Chinese medicine has nil value as a ‘science’ strictly speaking. Having absolute faith in this world of Qi appears ridiculous and even harmful. But this criticism does not prevent it from being useful and even necessary in certain circumstances, particularly in the practice of Chinese medicine. Its value is to help the practitioner find the relationship between a disease and its treatment on the basis of empirical experience.

Referring back now to the consultation by Mrs Wang, the expression ‘kidney Yin deficiency’ merely stands for a series of symptoms and clinical signs comprising buzzing of the ears, night sweating, lumbar stiffness, red tongue, faint and rapid pulse, etc... Among these manifestations, some are considered proof of Yin deficiency, whereas others indicate that this deficiency is located in the kidney. A medicinal formula will therefore be prescribed to tonify the kidney Yin, or perhaps the subject will be needled mainly on the points located on the kidney meridian line, for tonification purposes. Don't bother asking yourself whether the kidney is really deficient or really tonified by these treatments.

Indeed the kidney Qi is merely an ideological notion expressed by a series of physiological functions. Each anomaly of these functions is designated by a name (syndrome) by referring to phenomena observed in nature such as light-dark, heat-cold, plenitude-deficiency ... Once the property of the treatment to eliminate this anomaly has been proven, the treatment is classified in certain categories according to the antagonism principle. For instance the formula prescribed by Mrs Wang eliminates (as a rule) kidney Yin deficiency. But in actual facts its justification stems from the disappearance of the syndrome. It is therefore classified in the tonification category.

Clinical manifestations as a whole (symptoms and signs) constitute one of the keys to understand the Qi world of Chinese medicine. Whatever the name used—Yin-Yang and the five movements or names of the syndromes and categories of treatments—the basis of all these sophisticated descriptions focuses on symptoms and clinical signs, elements that are more concrete than Qi.

Therefore we should not be surprised when we hear in the doctors' speeches that pneumoconiosis is characterised by the deficiency of lung Qi or blood stagnation, and that the treatment of these two syndromes is the lung tonifying decoction and liver dispersing powder. Instead of calling for images proving the existence of this deficiency or this stagnation, we should remember that these are not an objective reality like pathological changes (that really exist in an organ or a tissue, a cell or a molecule) on which the reasoning of western medicine is based. These weird terms are merely names, each indicating a series of symptoms and signs that appear globally in a subject in the various stages of pneumoconiosis. Similarly the

tonification or dispersal capacity of the treatment is confirmed by the improvement or disappearance of each of the series of symptoms and signs but is not necessarily linked to laboratory data which is the only definitive proof showing the efficacy of a treatment in western medicine.

In conclusion, with the anthropological approach we have seen that Chinese medicine is very different from western medicine. Leaving aside the diagnostic and therapeutic methods which are no doubt very special, curiosity and controversy focus on the Qi theory.

Our research has shown that we can address this sacred Qi world other than by basing ourselves on its real existence: it can be simply a system of reasoning, derived from Taoist philosophy and then developed in medical practice.

This perspective, sacrilegious for some, could however stifle the main controversy on the scientific character of Chinese medicine, particularly its theory.

Lacking the precision and reliability of the scientific method applied in western medicine, Chinese medicine is condemned because of its empirical and speculative method to a 'parallel' place in our world—a haven for charlatans. Shouldn't we replace this dubious method with the scientific method?

It would certainly be a scientific victory if the kidney Yin deficiency and its tonification could be demonstrated anatomically, biochemically or genetically instead of remaining defined, according to custom, by a series of clinical manifestations. But would that also be a medical victory? That appears less true. Where cause-effect relationships are very complicated, as in many so-called functional diseases, at least two factors limit the use of the scientific method: the consumption of natural resources and the lapse of time between diagnosis and treatment.

Chinese medicine in all probability is going to continue operating with its own method and efficacy, even if science will shed more and more light on the enigma of its efficacy.

ANNEX 1 a

Yin-Yang symbols

Yang

(light: masculine, heat, plenitude, exterior...)



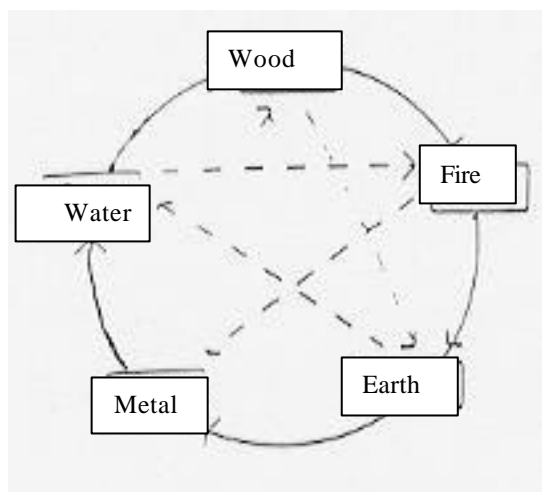
Yin

(dark: feminine, cold, deficiency, interior...)

ANNEX 1 b

The five movements

Begetting, domination, regulation and transformation (sheng ke zhi hua) correspond to a normal functional situation, at the level of all things and phenomena. In man they correspond to a physiological situation



Bois : wood; Feu : fire; Terre: Earth; Métal: metal; Eau: water.

-----: Mutual domination (yuan xianke)

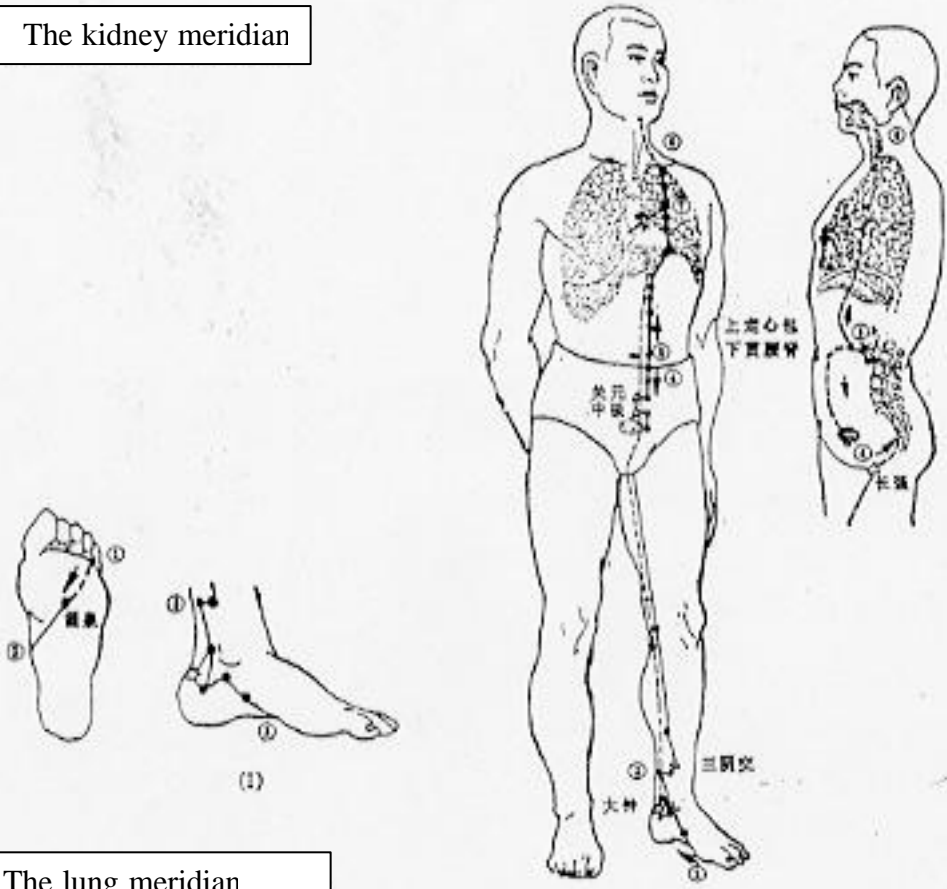
_____: Mutual begetting (yuan xiangsheng)

Classification of properties and phenomena according to the five movements

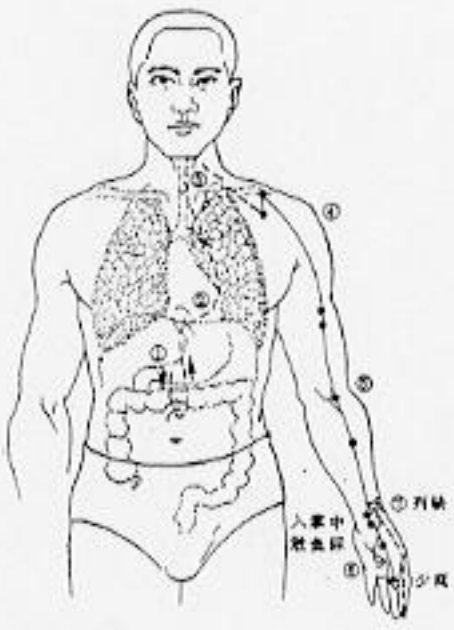
NATURE (zi ran)								The five movements	MAN (ren ti)						
5 notes (wu diao)	Circadian cycle (shijian)	5 tastes (wu wei)	5 colours (wu se)	5 evolutions (wu hua)	5 energies (wu qi)	5 directions (wu fang)	5 seasons (wu ji)	(wu xing)	5 organs (wu zang)	5 viscera (wu fu)	5 organs (the senses) (wu guan)	Structures (xingti)	5 emotions (wu zhi)	5 vocalisations (wu heng)	Behaviours (bian dong)
(jue)	dawn (ping dan)	acid (suan)	green (qing)	beget (sheng)	wind (feng)	east (dong)	spring (chun)	WOOD (MU)	LIVER (GAN)	gall-bladder (dan)	eyes (mu)	tendons (jin)	anger (nu)	to shout (hu)	to become tense (wo)
(zheng)	noon (ri zhong)	bitter (ku)	red (chi)	grow (zhang)	heat (shu)	south (nan)	summer (xia)	FIRE (HUO)	HEART (XIN)	small intestine (xiao chang)	tongue (shi)	vessels (mai)	joy (xi)	to laugh (xiao)	to worry (you)
(gong)	afternoon (ri xi)	sweet (gan)	yellow (huang)	transform (hua)	moisture (shi)	centre (zhong)	prolonged summer (chang xia)	EARTH (TU)	SPLEEN (PI)	stomach (wei)	mouth (kou)	flesh (rou)	nostalgia (si)	to sing (ge)	to hiccup (yue)
(shang)	evening (ri ru)	hot (xin)	white (bai)	harvest (shou)	dryness (zao)	west (xi)	autumn (qiu)	METAL (JIN)	LUNG (FEI)	large intestine (da chang)	nose (bi)	skin / hairs (pi mao)	sadness (bei)	to cry (ku)	to cough (ke)
(yu)	midnight (ye ban)	salty (xian)	black (hei)	preserve (cang)	cold (han)	north (bei)	winter (dong)	WATER (SHUI)	KIDNEY (SHEN)	bladder (pang quang)	ears (er)	bones (gu)	fear (kong)	to groan (shen)	to tremble (li)

ANNEX 2
The meridians

A The kidney meridian



B The lung meridian



ANNEX 3

THE SIX EXTERNAL DISEASE-CAUSING FACTORS (LIU YIN)

Excessive changes in the weather harm the body and are referred to as the six external disease-causing factors, namely the wind (feng), cold (han), heat (shu), moisture (shi), dryness (zao) and internal heat (huo, 'fire') (waigan bingxie).

Simplified table of diseases due to the seven emotions

Emotion	Pathology	Clinical signs
Joy is the emotion of the heart	Joy injures the heart and slows down energy	Palpitations and anxiety, flagging of the spirit, unceasing laughter and tears, emotional disorders
Anger is the emotion of the liver	Anger injures the liver and raises energy	Lienteric diarrhoeas and abdominal pains, syncope and vomiting of blood, swelling and distension of the chest and sides, eructations and sighs
Sadness is the emotion of the lung	Sadness injures the lung and diminishes energy	Short breathing, low voice, weak breathing, cough, chest oppression, hoarse breathing
Thought is the emotion of the spleen	Thought injures the spleen and makes energy stagnate	Little appetite and fatigue, emaciation, lumps in the thorax and abdomen, abdominal swelling and loose stools
Worry is the emotion of the lung	Worry injures the lung and decreases energy	Weeping in silence, discouragement, disorders of the mind
Fear is the emotion of the kidney	Fear injures the kidney and makes energy decrease	Cold limbs, stool and urine incontinence, agitation and insomnia
Fright is the emotion of the heart	Fright injures the heart and stirs energy	Palpitations and mental confusion, obnubilation, expression of fright, mental disorder

ANNEX 4

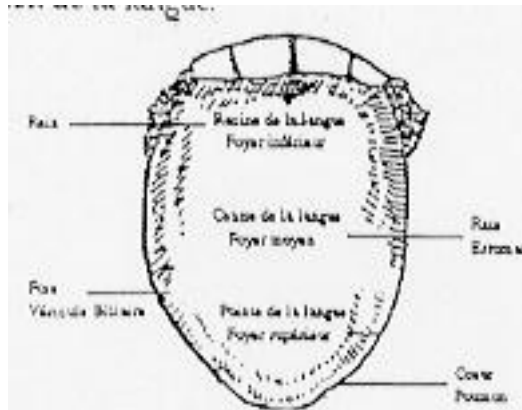
Diagnosis

Diagnosis is a method aimed at analysing a disease and gathering information on the patient's health by observing, auscultating, and palpating him. The main diagnostic methods are observation, (wang), auscultation (wen), questioning (wen) and palpation (qie). They are called the four examinations (si zhen).

ANNEX 4a

Diagnosis by the tongue

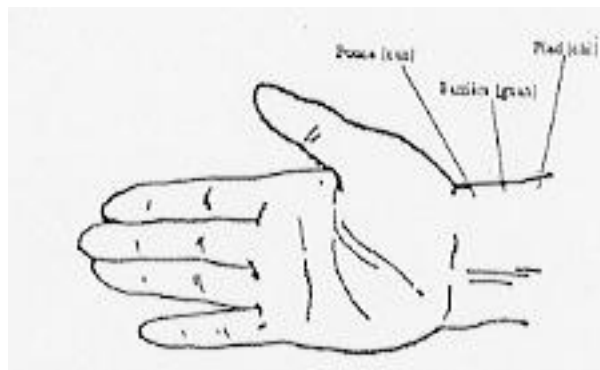
The various parts of the tongue and their correspondence with the organs and viscera in diagnosis by observation of the tongue.



ANNEX 4b

Diagnosis by the pulse

Diagram of the location of the barrier, of the thumb and of the foot in diagnosis by pulse taking.



ANNEX 4b (continued)

Correspondence table of the organs and viscera with the three sectors

	Left		Right		
Thumb (cun)	Barrier (guan)	Foot (chi)	Thumb (cun)	Barrier (guan)	Foot (chi)
Heart	Liver	Kidney Bladder	Lung	Spleen	Kidney (gate of life)
Pericardium	Gall-bladder	Small intestine	Chest	Stomach	Large intestine

Table of complex pulses and of the corresponding diseases most frequently met in clinical practice

Pulse	Main disorders
Superficial (fu) and tense (jin)	Cold on the surface, arthralgia pains due to the wind (fengbi)
Superficial (fu) and leisurely (huan)	Surface deficiency, the perversity of the wind aggresses the defences (wei), or the taiyang is affected by the wind (zhongfeng)
Superficial (fu) and rapid (shuo)	Heat on the surface
Deep (chen) and slow (chi)	Internal cold
Deep (chen) and tense (jin)	Internal cold and pain
Wiry (xian) and tense (jin)	Pains due to the cold, generally stagnation of the cold in the liver vessels
Deep (chen) and rapid (shuo)	Internal heat
Surging (hong) and rapid (shuo)	Excessive heat in the energy layer during an externally caused disorder
Wiry (xian) and rapid (shuo)	Plenitude and burning heat in the liver during an externally caused disorder, or internal damage due to the 'fire' resulting from the stagnation of the liver
Rolling (hua) and rapid (shuo)	Mucosities / heat (tanre), mucosities / fire (tanhuo) or food stagnation turning into heat
Wiry (xian) and rolling (hua)	Fluid mucosities (tanyin), food stagnation
Deep (chen) and wiry (xian)	Blocking of energy due to stagnation of the liver or internal stagnation of fluid mucosities, or else pains
Deep (chen) and hesitant (se)	Blood stagnation
Deep (chen), thready (xi) and rapid (shuo)	Yin deficiency or blood deficiency, with the presence of heat
Wiry (xian) and thready (xi)	Liver and kidney Yin deficiency or stagnation of liver energy and blood deficiency

ANNEX 5

Table on differential diagnosis according to the eight principles

Yang syndromes	Surface syndrome
	Heat syndrome
	Excess syndrome
Yin syndromes	Depth syndrome
	Cold syndrome
	Insufficiency syndrome

DIFFERENTIAL DIAGNOSIS DEPENDING ON ORGANS AND VISCERA (ZANG FU BIAN ZHENG)

Example for kidney Yin insufficiency (deficiency)

Syndrome	Symptoms and signs				
	Common symptoms		Specific symptoms	Tongue	Pulse
Kidney Yin insufficiency	Weakness and pains of the loins and knees.	Cold body and limbs, pale complexion.	Hissing and buzzing vertigo and dizziness, night sweating, spermatorrhoea, dry mouth and throat, sensation of heat in the 'five hearts', agitation and insomnia.	Red tongue with little coating.	Small and rapid.

CLINICAL EXPERIENCE

P. WANG and O. DUHAMEL

This is how Chinese medicine sees pneumoconiosis:

-Pneumoconiosis is caused by an external excess that invades the lungs, which is followed by a stagnation of the blood circulation and concentrations such as *nouures*; then there is a progressive depletion of the lung and kidney Yin.

- Differential diagnosis:

1st stage: Dry cough; little phlegm; chest oppression; short breath; thirst; spontaneous perspiration; red and dryish tongue; deep and wiry pulse.

Treatment principle: Moisten the lungs; disperse phlegm to improve the cough.

2nd stage: Cough with thick phlegm or phlegm mixed with blood; chest oppression combined with pain; short and weak breath; heat in the five hearts (heart, palms of the hands and soles of the feet); hot flushes; perspiration without any external cause; red and dryish tongue; tense and wiry pulse.

Treatment principle: Nourish the Yin; moisten the lungs and get the blood to circulate.

3rd stage: Cough with expectoration of phlegm; breathlessness and chest oppression; breathlessness worsened by movement; weariness; fatigue; sensitivity to the cold and cold limbs; stiff, aching and weak back and knees; pale or thick (swollen) tongue; deep, wiry and weak pulse.

Treatment principle: Nourish and heat the lungs and kidneys.

DEBATE

Mrs ALLUIN feels that, overall, the approach of both medicines is equivalent and that Chinese and western medicines are roughly parallel.

Therefore, following technical progress, the human dimension has been reintroduced into western medicine after having been discarded for a time to the benefit of drugs.

She emphasised that, behind the symptoms observed, there may be a context which the patient must be made to sense, but patients find it hard to admit they have a problem other than that for which they are consulting; in effect many people somatise, which requires devoting time to them to sort matters out, particularly regarding patients who find it hard to speak openly.

In the case of long-term treatments such as oxygenotherapy, an educational approach is necessary as part of overall treatment—it is not enough just to give oxygen.

Generally speaking, overall treatment for patients is developing in pneumology so that patients become aware of their health and participate in their treatment.

On request by Mr COCUBE, Mrs ALLUIN presented the SPIR: Service de suivi des pneumoconiotiques et insuffisants respiratoires (Department monitoring pneumoconiotics and respiratory insufficiency sufferers).

This department, which comes under the AHNAC (Association Hospitalière Nord Artois Cliniques), has two activities:

- Annual monitoring of sufferers of pneumoconiosis, silicosis or asbestosis, and screening of cancerogenic substances such as benzene and asbestos in the mining social security scheme.

- The ADER: association pour les soins à domicile d'insuffisants respiratoires (home care association for respiratory insufficiency sufferers) monitors approximately 1600 patients in the Nord-Pas-de-Calais using at home ambulatory oxygen equipment or a ventilator. They are pneumoconiotics, but there are also many patients suffering from chronic bronchitis.

In fact few persons wish to participate in a rehabilitation programme owing to their advanced age or the development of other pathologies (heart or endocrinology problems, arthritis) but also on account of problems related to changes in financial compensation.

PRESENTATION OF THE MAIN ASPECTS OF CHINESE MEDICINE STUDIED



M. COCUBE

Three main aspects of Chinese medicine have been chosen. They will be presented and examined individually for their possible contribution to the treatment of pneumoconiotics.

Traditional Chinese medicine comprises a component well known in the West, acupuncture, which started to gain ground in the medical sector in France in the first half of the XXth century with Soulié de Morant.

Today acupuncture is a recognised discipline. It is taught at various universities and approved schools and the treatment given by acupuncturist physicians is reimbursed by the social security.

Other components of Chinese medicine are making a discreet appearance. The pharmacopoeia has for a long time attracted the interest of certain health professionals, particularly pharmacists. The public is becoming increasingly interested also.

Traditional Chinese medicine also comprises qi gong, similar to psychosomatic medicine and including techniques which, in our context, are close to the techniques of physical and mental well-being and to personal development techniques like sophrology. Incidentally, the western inventors of sophrology often forget, or hide, its oriental origin.

These are therefore the main topics chosen but it should not be forgotten that dietetics also plays an important role, in health as in ill-health (in the East and the West alike), as well as massages and the burning of moxas at acupoints—a kind of compromise between acupuncture and the traditional French technique of cupping and possibly scarifying.

Acupuncture

PRACTICE OF ACUPUNCTURE AT THE SURGERY

O. DUHAMEL

I have been an acupuncturist physician for twenty-five years. I have a private surgery and am also a consulting physician in acupuncture at the CHU Pitié-Salpêtrière (centre hospitalier universitaire—university hospital centre). How is an acupuncture session seen in France today? That will be the topic of my five to ten minute speech.

This morning you heard about diagnosis in Chinese medicine, which I will not go into again because, although Chinese diagnosis is perhaps not based on the same criteria as western medicine, it nevertheless includes a certain number of objective elements. These allow an etiologic diagnosis to be reached, in other words a syndrome can be defined. The patient is questioned, his tongue studied, pulse taken, and his face, nails, skin and general aspect observed for anything unusual. Then one of the syndromes of Chinese medicine is pronounced. Of course, the diagnosis is never exactly what the books tell you or teach you, but the same applies in western medicine. The practitioner therefore tries to draw a parallelism with something he already knows or has studied, using the principles of Chinese medicine.

Use of needles

Once the syndrome has been defined a certain number of points on the acupuncture meridians are selected. Remember, there are twelve acupuncture meridians; fourteen, with the anterior and posterior meridians known respectively as the governing vessel and the conception vessel, and there are approximately 365 acupoints. Out of these 365 points there are roughly 170 important control points which are used.

Different size needles are used—small, medium and large. Use can also be made of electric stimulators which are connected directly to the needles, or of moxas (remember what was said this morning) which are burning sticks of artemesia used to heat certain acupoints.

Once the points to be treated have been selected, the needles may be manipulated to obtain what is called the de chi sensation, a sensation of energy arriving on certain points. Other points are left as they are. The direction and depth of needle insertion may also play a role. The needles remain in place for a variable time, on average 15 to 20 minutes, sometimes for much less or for much longer depending on the case.

Main indications of acupuncture

I will now speak to you about the main indications of acupuncture, at least in the West. Obviously acupuncture in France is not exactly the same as in China, for various reasons.

But, firstly, why is acupuncture used in France without the other components of Chinese medicine?

The answer is mainly because of historic and practical reasons. In the 1920s, when acupuncture began in France, it was much easier to import Chinese needles rather than Chinese drugs. We therefore took a greater interest in acupuncture because it was out of the question importing all the Chinese drugs. Nowadays the issue is less clear and moreover doctors practising Chinese medicine are beginning to feel that acupuncture is not the only component. Chinese medicine is 70% pharmacopoeia, 30% acupuncture. They both of course follow the same basic principles of Yin-Yang, rebalancing, the five movements, etc.

What is treated with acupuncture?

- In France anaesthesia by acupuncture is barely used because that would require specialised departments that do not exist here. In China it is used for that purpose and there are also whole departments treating serious pathologies that cannot be treated in France either, because we don't have the necessary departments and wards. In China patients sometimes have one or several acupuncture sessions a day, which is impossible in France today.
- The treatment field includes all functional pathology, but not only that, because organic pathology is also concerned, in relation with the nervous system: insomnias, anxieties, some types of depressions, and physical, psychic and sexual asthenias. In rheumatology of course the field is very broad, because there is the whole range of rheumatology pains, particularly slight pains, inflammatory pains, spasms, and cramps.
- If you speak to someone in France who doesn't know about acupuncture, they'll tell you: 'Yes, its to treat pains and help people give up tobacco. It may also be used in slimming.' Digestive pathology is also a large purveyor of acupuncture surgeries because acupuncture has definite efficacy in this field. Of course many patients are received with the range of pathologies met by general practitioners—constipation problems, diarrhoea, gastric pains, etc.
- The efficacy of acupuncture was referred to above with reference to organic pathologies: this is the case with psychosomatic diseases. Turning to infectious pathologies—an attack of acute sinusitis or recurring sinusites—we sometimes manage to treat them definitively with acupuncture needles. When you've suffered it yourself you know that it's perhaps psychosomatic but that the patient is very pleased to be rid of it. I would tend to believe that we have treated the underlying condition. We often see recurring sinusites or colds, particularly in children: these can be treated by acupuncture, generally from age three on. Previously the acupoints can be massaged and the parents can perhaps be taught how to massage their children. This is a highly used technique in China and can easily be used in France.
- I also wish to mention the problems of cystites, recurring cystalgias, and zonae. Acupuncture is highly indicated in zonae. If practised in the first days of appearance, very interesting results are obtained. Some say zonae cure on their own; that remains to be seen, and in any case pain is avoided.
- At cardiovascular level, mention can be made of palpitations and of some vertigo syndromes. Can migraines and tinnitus be likened to them? Tinnitus is a problem though. Approximately half such cases can be successfully treated, which isn't bad.

- Dermatology is also one of the important aspects of the application of acupuncture. In the theory of Chinese medicine, which I cannot go into now, the skin merely expresses what is going on inside the body. In treating various organs for which a precise pathology is found, dermatological problems will obviously be able to be treated, and not from the sole symptomologic viewpoint.

PRACTICE OF ACUPUNCTURE IN FUNCTIONAL READAPTATION



P. SAUTREUIL

Acupuncture is remarkable in that it is an age-old medicine, dating back to ancient Chinese times, and a component of our modern technological medicine.

It opens up new tracks for our scientific medicine in semeiology, physiopathology and therapeutics.

Transmitted from master to disciple over the generations, it has been taught in our country for the past fifty or so years.

For my part I have integrated components of acupuncture in my physical medicine and readaptation consultations (external, hospital) for the treatment of muscular osteoarticular pathologies and more specifically those concerning the rachis (cervicalgias, neuralgias cervicobrachialgias, lumbalgias, lumbosciatalgias, adult scolioses ...) of degenerative or traumatic origin.

The description of his pain by the patient is the key moment of the clinical examination.

The diagnosis is based partly on the search for a 'cellular-teno-myalgic' syndrome (Robert Maigne, Hôtel Dieu, Paris) and for trigger points (most often bundles of contracted muscular fibre) as well as on the palpation of acupoints and of meridians.

The clinical examination should find the pain described by the patient. This corresponds to the pragmatic Chinese search for ah-shi points ('ah shi' meaning 'that's it' in Chinese, that's where it hurts).

Biological and above all radiological examinations are made whenever necessary.

The therapeutic stage is based on muscular relaxation techniques and on a local, loco-regional and sometimes general use of acupuncture needles (sterile, throwaway).

The needle is inserted at the acupoint or the painful point to a depth which depends on the clinical locating. It is then manipulated with alternating rotation and in depth so as to obtain the 'de qi', the specific pain which leads to the following dialogue during a consultation in China: Yo ma?: 'Do you have it?' (meaning, do you feel the pain?)

- 'Yo!': 'Yes I do'.

Concordance of the three pains—that felt spontaneously by the patient, that found on examination and that caused by the needle, in their forms and even in their intensity—ensures therapeutic efficacy.

Depending on the clinical practice, these local points are combined with regional or general master points.

In the specific context of my hospital practice, I currently do not use either electric stimulation or moxibustion* (burning dried artemesia sticks).

The number of sessions varies from 3-5 to 10. 'Booster' sessions are sometimes necessary when the disease is chronic. The rhythm depends on the clinical practice and the impact of the therapy. These routine sessions can take place every month, two months, three months...

A certain number of patients, especially with lumbosciatalgias, receive treatment in a pluridisciplinary framework associating a physiotherapist, ergotherapist, psychologist, psychiatrist and sometimes a social worker. This way of operation is quite specific to the physical medicine and readaptation departments in France.

* Zhen Jiu corresponds, in China, to the indissociable combination of acupuncture (zhen) and moxibustion (jiu).

THE SCIENTIFIC VIEWPOINT ON ACUPUNCTURE: SUMMARY OF THE CONCLUSIONS OF THE CONFERENCE OF 3 TO 5 NOVEMBER 1997 IN THE USA



L. KOCH

1 - Introduction

Acupuncture has been known and used in China for at least 2500 years. This therapy, formerly little used in the United States, has developed there since President Nixon's visit to China in 1972. Since then millions of patients have been treated by it at thousands of practitioners'.

To take stock of the issue, the National Institutes of Health (NIH) organised from 3 to 5 November 1997 a conference on acupuncture chaired by a group of twelve specialists representing a variety of fields (acupuncture, pain, psychology, psychiatry, rehabilitation, drug abuse, family practice, internal medicine, health policy, epidemiology, statistics, physiology, biophysics, patients).

Twenty-five papers were presented during these three days; approximately 1200 people attended.

2 - Consensual protocol*

After a day and a half of presentations and discussions the twelve specialists tried to answer in a consensual protocol the five following questions:

How effective is acupuncture compared with the use of placebos or sham acupuncture?

Compared or combined with other therapies (including the absence of other therapies), what place does acupuncture occupy in treatment?

What do we know about the biological effects of acupuncture which could help in understanding the way it works?

What results must be obtained for acupuncture to be incorporated in the present healthcare system?

What are the directions for future research?

3 - How effective is acupuncture compared with the use of placebos or sham acupuncture?

There are few studies or high quality research that respect the currently applied rules. Most papers are confined to reporting on cases or series of cases that do not really demonstrate efficacy.

The greatest majority of studies deal only with needle acupuncture (manual or electric) on adults and do not address the long term.

Most humans and animals have a beneficial response to acupuncture although some studies appear to contradict this observation.

It is proven that needle acupuncture is effective in treating nausea after operations, chemotherapy (adults) and probably those experienced by pregnant women.

As regards pain treatment, acupuncture is effective against post-operative toothache. Some studies demonstrate a decrease in other pains, whereas others do not find any efficacy in treating pain.

It is proven that acupuncture is not effective in stopping smoking

The use of sham acupuncture in a control group is very tricky. It appears to have an intermediary result between real acupuncture and a placebo.

4 - Compared or combined with other therapies (including the absence of other therapies), what place does acupuncture occupy in treatment?

When several therapies exist, the choice often depends on several factors, particularly the patient's preference. Contrary to generally accepted ideas, the results of studies and research are far from always being in favour of conventional medicine.

One of the advantages of acupuncture is that the secondary effects are considerably lower than with many drugs or other treatments which could be used (for instance anti-inflammatory drugs).

Many clinical experiments and a few research results appear to demonstrate that acupuncture could be indicated in many cases.

5 - What do we know about the biological effects of acupuncture which could help in understanding the way it works?

Many studies both on animals and on men have shown that acupuncture can have multiple biological effects, either locally or at a distance. It appears well established that opiate peptides are released during acupuncture. Other biological effects have been evidenced without their clinical actions being clear.

The definition and characterisation of acupoints remains controversial. This is even more the case regarding certain concepts of oriental medicine such the circulation of Qi, which is nevertheless the basis of acupuncture treatment.

Some of the biological effects observed also appear with sham acupuncture or other stimuli (big pains, violent exercises, relaxation).

In any therapy, including acupuncture, there is a non-specific effect which may be powerful (relation with the patient, degree of confidence, patient's expectations).

Although there are still many unknown factors in the mechanisms leading to the therapeutic effect, a considerable number of biological changes resulting from acupuncture have been observed. Research should continue.

6 - What results must be obtained for acupuncture to be incorporated in the present healthcare system?

The incorporation of acupuncture in the present system will be facilitated by a better understanding between oriental medicine (global approach) and western medicine (treatment of the disease). A major step has also been taken in this direction by acupuncturists being better trained and accredited by official bodies.

Although the secondary, harmful effects of acupuncture are extremely rare (cases of pneumothorax are mentioned), safeguards should be introduced, such as information for patients and throwaway sterile needles.

More than a million Americans each year adopt acupuncture in addition to conventional medicine. GPs and acupuncturists should communicate more. So that all can have access to acupuncture, the reimbursement of such medical procedures should be encouraged and facilitated.

7 - What are the directions for future research?

A certain number of questions are still unanswered. The answer to these questions should help to complete the assessment of acupuncture.

Who adopts acupuncture and for what conditions ?

Epidemiologic studies should help address this question.

Can the efficacy of acupuncture in the cases where it appears promising be demonstrated ?

Relatively few high-quality, randomised and controlled trials have been published. Such studies should be strictly devised to assess the efficacy of acupuncture.

Other studies like those carried out in clinical epidemiology can also provide useful information.

Do the various theoretical bases of acupuncture lead to different treatments ?

Research projects should study the various theoretic orientations (China, Japan, France) and their influences on the locating of acupoints.

Apart from fixed acupuncture points, all of the oriental medical system should be studied.

What fields of public research are likely to facilitate the introduction of acupuncture into the present healthcare system ?

Can new aspects be discovered regarding the biological bases of acupuncture ?

Mechanisms leading to a western scientific explanation are beginning to appear. That is encouraging and can shed new light on other physiological processes.

Does the human body have an energy system with clinical applications ?

This theory, which is behind acupuncture, is worth being studied.

How do these approaches and the answers to these questions differ between peoples with an age-old tradition of acupuncture and those who have only recently discovered this therapy ?

8 - Conclusions

The studies have given mixed results for a certain number of reasons, particularly because of the difficulties related to placebos and sham acupuncture. Encouraging results have been reached: efficacy has been proven in some cases. Future studies will probably find other indications

Fundamental research has begun to elucidate the mechanisms involved in acupuncture, but much remains to be done.

The use of acupuncture as a therapy is at its beginnings; many practical problems still remain to be solved. There is a reasonable hope that acupuncture will find its place alongside conventional medicine.

* This is the summary of the consensual protocol of the conference. This protocol, the list of participants and a bibliography can be consulted on Internet at the following address:

http://odp.od.nih.gov/consensus/cons/107/107_intro.htm

DEBATE

Mr COCUDE

We continue the agenda with Mrs WANG who has made an Internet study of Chinese articles of the past ten years; your dossier includes a short note stating the results of her research. We will refer back to it at the end of the meeting. For the moment we will confine ourselves to what Mrs WANG is going to tell us about '*Acupuncture and Pneumoconiosis, recent work in China*'.

Mrs WANG

I have searched the bibliography on Internet. In fact there is little use of acupuncture in internal diseases. There are few publications on acupuncture in the treatment of pneumoconioses. Acupuncture is used above all in combination with phytotherapy depending on the symptoms. Research is being conducted in cooperation with the Japanese. Certain acupoints have been tested to determine the efficacy of a given point with respect to others and five to six acupoints have been selected. Three of these have quite a powerful result.

A first point is on the throat in the region of the lung. There is also the lung meridian: from the terminal point the meridian rises, then descends, then rises again. This is the internal line; beyond, the line is subcutaneous. This line is connected with the meridians of other organs such as the large intestine.

When certain points are needled both organs can be made to react. This is the case with point no. 17 on the conception vessel. Another point is no. 22 of the conception vessel and it is more effective than the other two. Japanese research above all (conducted in collieries) has determined this on the basis of 400 cases. In China there are no studies exclusively on acupuncture, but only in combination with certain drugs.

Mr SAUTREUIL

It should be noted that only now do we have the means to justify what the Chinese have proposed for thousands of years. For example it was a Frenchman, NIBOYET, who was the first to demonstrate that acupoints have an electric singularity. We do not know exactly how an acupoint is constituted. We know that the histologic structure of the skin is not, on the face of it, different between the acupoint and its environment. It appears that the acupuncture signal is mediated by a density of receptors described by the Japanese as polymodal receptors, in other words capable of accepting a mechanical signal and a thermal signal.

Similarly, thanks to the development of the neurosciences, it has been evidenced that opiates or morphines mediate one of the mechanisms, only one of the mechanisms among others, which explain the analgesic role of acupuncture. There are indeed other mechanisms such as the gate control mechanism used during the repeated stimulation of specific points chosen in accordance with the rules of traditional medicine. By making this stimulation on the spinal chord a 'jam' is created which renders non receptive the nociceptive stimulus of surgery. We have made a really interesting video on this topic in Vietnam.

This technique is also used in TENS (Transcutaneous Electro-Neuro Stimulations) in western medicine. TENS are the transcutaneous stimulations used on chronic pain. An electric stimulation is made on the skin which saturates locally the sensitive receptors and allows patients in chronic pain to live with a far less intense pain. Japanese work also demonstrates the convergence between TENS and certain forms of acupuncture with electric stimulation.

We therefore have the prospect of explanations at present. One of the main questions of Chinese medicine concerns energy, Qi. It is perhaps quite simply the electromagnetic manifestation of metabolism which would explain why it varies, and why there are lines (meridians), because the anatomic axes formed by the bones and the vascular nervous systems are themselves expressed by electromagnetic lines. This is a personal explanation.

Mr COCUBE

I wish to return to what you said. To prepare today's work I asked the people to whom I spoke, including several acupuncturists, to bring information on this issue, in other words the scientific demonstration of the existence of acupoints.

Mr SAUTREUIL

I'll answer if you like. First of all it is not my speciality to manage the scientific aspects of acupuncture; we could say there are many elements converging progressively towards scientific explanations. These explanations head in the direction of my profession (physiotherapy). In traditional acupuncture we can proceed only by means of very hard to make assessments. The Americans have documented these difficulties and obtained contradictory results. However I have with me Japanese documents translated into English which demonstrate that we are heading towards a scientific explanation—not of all the mechanisms but of some of them. The Japanese are very specialised in this respect. We don't possess the full picture but it's getting clearer.

Mr OBRINGER

Two or three little remarks on the documents would in a way sum up the work. There is a book which is already quite old, I think it was published in 1980 in Cambridge, by a great historian of the sciences Joseph NEEDHAM and his collaborator LU GWEIDJEN, entitled 'Celestial Lancets. A History and Rationale of Acupuncture and Moxa'. This book addresses all the western theories that have tried to explain the efficacy of acupuncture or at least how it works. Although this is a slight digression from our pneumoconiotics—it's a remark by a historian of the sciences—I wish to recall that one of the first doctors to take an interest in acupuncture and to have incorporated it in his therapeutic arsenal was the father of Hector BERLIOZ, at the beginning of the 19th century. Acupuncture was then very fashionable for several years in France around 1825, often in combination with an electric stimulation.

What can also be noted is that acupuncture is a kind of extraordinary marker of biochemistry innovations. Twenty or so years ago, for instance, it was proposed to explain the efficacy of acupuncture by referring to endorphins which had just been discovered. If in five or ten years a truly decisive innovation appears in the neurosciences, an attempt will probably be made to explain it by the mechanisms of acupuncture.

Mr COUDE

What you have said is very interesting and gives me the opportunity to observe that the interest of a meeting like today's is to bring Chinese medicine out of the narrow circle of a small number of specialists.

Mrs MINGAM

In 1975 an experiment was carried out by J. RABISCHONG, I think, in Montpellier, on the transfer of cephalorachidian liquid from a rabbit with an anaesthetised right leg to another rabbit which also became anaesthetised in the same leg. Experiments which have perhaps not been renewed sufficiently have proved that Chinese medicine is more than just a passing fashion. A compilation of this scattered work can be found in my thesis on Chinese medicine which I presented at the Université de Bretagne Occidentale, Faculté de Médecine, in Brest on 14 November 1975.

Mr DUHAMEL

It is nevertheless interesting to know that the Americans have found a certain number of pathologies that can be treated effectively by acupuncture since they have decided to conduct research and voted several thousand million dollars of appropriations. We don't have enough documents on the topic because in France the appropriations for official research on acupuncture are non-existent. However studies have been made in China and can be reproduced quite easily in France, for example propagation phenomena. When you insert a needle, in a certain number of cases (one in a hundred) a wave propagation is obtained, in other words the person needled says that he feels a more or less long line in his body.

Stimulation techniques exist which allow these lines to be observed more often (one in fifty or one in thirty cases) and a line is sometimes felt on a set of meridians. Remember that meridians have nothing to do with nerves; they are not nerve lines and we still cannot explain the phenomenon scientifically. People who know nothing about acupuncture are capable of feeling them in their own body.

I wish to point out that MAXWELL described electromagnetic waves fifty years before HERTZ proved their existence by technical means. When we have the technical means we will perhaps be able to effectively prove the reality of acupuncture. Chinese studies exist and we have cassettes which for want of time we cannot show. In any case acupuncture is also used on animals and indisputable results are obtained.

Mr COCUBE

Referring to the American studies you have just mentioned, I would like to know if a length of time has been fixed for them. Because, as I said in my introduction, the European Parliament in 1993 - 1994 voted several million ECUs to study alternative and complementary medicines. However, to date, little has been done.

Mr DUHAMEL

I have an American document on the subject, which states that the bureau of alternative medicines created at the NIH in Washington has an annual budget of 50 million dollars, perhaps 70 now.

Mr LAFOREST

A little practical question: when acupoints are spoken about, what do they represent in surface terms ? Can their surface be estimated and over what surface area can the insertion be made?

Mr SAUTREUIL

From 0.1 sq. mm for acupoints on the ends of the fingers to 1, 2, or 3 sq. cm for the largest.

Mr LAFOREST

In other words you need a good technique for phenomena to be reproducible and you can't insert the needle anyhow or anywhere; that could explain why some experiments cannot easily be reproduced.

Mr SAUTREUIL

That's a difficulty of this therapy especially as palpation does not always allow you to understand what's going on deep down.

There are two visions of the acupoint: a three dimensional vision with a depth that can reach 10 cm and a more restricted vision, reduced to the epidermis. Only the epidermis is then stimulated and not all of the tissues down to the periosteum.

Mr MARQUET

I would like to raise a rather naive question: I would like to know if there are any hazards in acupuncture. Since we have a relatively precise definition of meridians and acupoints, isn't there a risk of seeing secondary effects or of awakening unwanted pains with bad practice ?

Mr SAUTREUIL

When a nerve is touched, the patient feels that and says so immediately. But when the needle is removed, the pain disappears immediately. The hazard could consist in touching a large vein or an artery; but that risk is minimal because if the needle is inserted softly it will slide against the artery. There is a hazard only with very small superficial vessels.

To my knowledge the hazard could exist for an acupoint on the lung—with a long needle a pneumothorax could be caused. But that risk is very theoretical because the hole is really very little.

As for the AIDS hazard, the doctor is more exposed. The risk of being contaminated by hepatitis and AIDS has led to the generalised use of throwaway needles.

Mr MARQUET

You have just spoken of the local hazard. But can pain be triggered in another territory?

Mr SAUTREUIL

That is perhaps a hazard but it has never happened to me. In any case the action of the needles is felt by the patient and by the practitioner. I think the NIH has observed that the secondary effects of acupuncture are far less dangerous than those of western treatments.

I have already experienced a worsening of pain with an electric stimulation, but only once in 15 or 20 years.

A slight digression to return back to the history of acupuncture; it appears to have originated in Neolithic times since, at the beginning, little stone awls were used, and it can be understood that it is dangerous to use that type of equipment, far less sophisticated than the Japanese needles with a 0.15 or 0.20 mm diameter. But it should be borne in mind that equivalent instruments were developed elsewhere in the world as evidenced by the body that was found at the border between Austria and Italy—marks were found on 'Hibernatus' that correspond to acupoints. A body or a mummy, I can't remember exactly, also with traces of acupuncture, was found in the 1950s in Columnata situated in Tiaret in Algeria.

That proves that in the Neolithic Age an attempt was made at treating pain, inflammation or infection with the means of the times. No more progress was made in Europe and in Africa. However, building on the basis of that age, the Chinese developed a highly structured medicine over the centuries. Yin-Yang dates back to the ancient Taoist culture, whereas the five movements correspond to a more recent period (approximately the Christian era).

Mr OBRINGER

Firstly, we have the impression that, in the beginning, acupoints were blood-letting points and this is still the cause with veterinary acupuncture, for example on horses. Secondly, it is believed that the stone awls were mainly instruments for minor surgery to empty abscesses. Also there are very ancient, divinatory texts that lead to the belief that needling is of shamanic origin: an attempt was thus made to expel evil, like a devil, from inside the body.

Yet another reason explains why acupuncture developed in China. It is a country where work on canals and controlling rivers has always been extremely important and I like to think that it was understood that, if you act on given point, you have action much further down the river. That predisposes you to see the body differently.

Mr BONNEVIALE

I wanted to know if the history of the development of acupuncture in China has been charted. I suppose that acupuncture did not arrive accidentally and that it developed progressively. Do we have an idea of how this technique developed in China?

Mr OBRINGER

Yes we know quite well about the beginnings and the development of acupuncture. In the West we tend to exaggerate the ancientness of acupuncture because we feel that, in certain fields, the older the more effective.... We have established, using the texts found in tombs and thanks to archaeologists, that acupuncture, as we know it today, dates back roughly speaking to the second or first century BC and it was preceded by moxibustion.

Continuing with the history of acupuncture in China, I wish to emphasise—perhaps to give rise to debate—that during certain periods under certain dynasties, acupuncture was considered dangerous; for instance at the beginning of the XIXth century an emperor completely advised against it. Ten or so years ago I worked on a very large volume, a medical work dating back to the VIIIth century and devoted solely to the pharmacopoeia because the author said: ‘I don't want to speak about acupuncture insofar as I consider it has a far greater tendency to kill the living than to resuscitate the dead’.

Mr HOR

I have noticed that our discussion focuses on the justification of acupuncture. Unsurprisingly, we are calling for scientific proof in this respect. This justification can be sought by answering the following two questions. Do the principles of acupuncture have a real basis? Is acupuncture treatment effective?

Despite the efforts and encouraging results, the existence of meridians and of Qi, or the reasoning contained in a theory like that of the five movements, are far from being established scientifically. The question remains: If the system of acupuncture does not have a scientific foundation, does it nevertheless have its value in clinical practice? In effect the aim of medicine is different from that of science.

It is more relevant in this respect to conduct scientific research to justify and clarify the efficacy of acupuncture in the treatment, here, of pneumoconiosis.

Mr COCUBE

Personally I don't think it is absolutely necessary to demonstrate the existence of meridians to believe that acupuncture can be effective. Nevertheless, any progress in knowledge on its mechanisms of action is of course welcome because of the contribution made towards understanding the makeup of the human being.

Mrs WANG

Just a little remark to answer that by Mr OBRINGER: he mentioned that under certain Chinese dynasties acupuncture was not practised. This mistrust is far less pronounced regarding phytotherapy because it suits the Chinese mentality much more.

China is a country where literature, poetry, and calligraphy are of great importance; in China literature and medicine are not separated. And phytotherapy is based on all plants and all animals.

On the other hand, acupuncture involves manipulation, it's a manual discipline, physical work. That could hinder some emperors who found it more advantageous to support the 'literary sort' than acupuncturists. And still today in the field of medicine there are 70% phytotherapists in China as against 30% acupuncturists. For phytotherapists, acupuncture is external medicine.

Mr COCUBE

I turn to Mr KOCH who cannot be accused of being biased because of support for a given system and ask him to conclude our debate.

CONCLUSION by Mr KOCH



Regarding the efficacy of acupuncture, the conclusion is relatively easy. The conclusions of the conference that took place two years ago in the United States are far from negative; they don't say that acupuncture is charlatanism or that it should be dismissed. On the contrary, a certain number of beneficial effects have been evidenced. Therefore it can be said that acupuncture is effective, that's been proven in a certain number of cases, which does not mean that in the cases where there is no proof there is no effectiveness.

Another issue addressed at the NIH conference is the scientific explanation. In actual fact the French work of twenty or so years ago proved scientifically the existence of acupoints. Mrs MINGAM's thesis and the other work quoted are highly enlightening in this respect.

Two years have elapsed since the NIH conference. If I understood well, 50 million dollars has been invested in research, and progress has probably been made, which I am personally unaware of. It would be useful if acupuncture specialists obtained more precise information. To obtain knowledge of the mechanisms, the right measurement instruments have to be found—the instruments used until now do not appear to me to demonstrate anything tangible.

Lastly, a lot has been said of acupuncture during this half hour but little of pneumoconiosis. Nobody except Dr WANG has mentioned the direct efficacy of acupuncture in treating pneumoconiosis.

But pneumoconiosis is not on its own, there are all the associated complications which can entail pain, feelings of general discomfort or quite simply an absence of well-being; I believe acupuncture can be beneficial to pneumoconiotics in this respect too.

Qi gong

VIDEOCASSETTE: QI GONG HELPING IN EVERYDAY LIFE



Mrs KOCH

The cassette presents a qi gong session that is part of a series of 15 minute sessions broadcast a while ago by the German TV channel ZDF once a week. These weekly programmes were produced under the patronage of the German social security fund (Allgemeine Orts-Krankenkasse - AOK). The sessions are presented and commented by a psychologist and a doctor who also show the movements to be made.

The sessions are intended for the general public but some exercises are designed rather for the elderly.

Qi Gong is indicated in the widest variety of daily life situations (stress, apprehensions, pains, disorders of the senses. . .). It allows better use of and control of breathing, and increases resistance to illnesses, diseases and all kinds of aggressions. It brings serenity and well-being and improves the quality of life in general.

In case of difficulties—for the handicapped for instance—the movements can be made mentally without losing their efficacy.

Comments by Mrs KOCH

I have shown you a qi gong session which was broadcast as part of a series on German television under the patronage of the German social security, which shows it is officially recognised. These exercises are presented by a psychotherapist and a doctor. The sessions are intended for the general public, of whatever physical condition. The idea conveyed by the programme is that qi gong is effective in everyday life, which I can confirm by my own experience.

I indeed give psychotherapy sessions. At the end of a session people are often highly moved, highly agitated, in another state, which makes their return to 'normal' life something of a problem with the hustle and bustle and aggressions of everyday life. By getting them to do a few qi gong exercises they become serene and calm and they can be allowed to return to their customary life. This really has impressed me.

To return to what was said this morning, many people suffering from respiratory problems are handicapped. It is not necessary, however, to do qi gong exercises with the body. They can be done mentally: you can be sitting in an armchair. The same applies for the breathing exercises. The exercise consisting in raising your hands while breathing in slowly until you reach the high point and then stopping with your hands in the air can be difficult for persons with a breathing problem. They will be told: if you don't have enough breath to reach the top position while breathing in, breath out and continue the movement but mentally, inhaling and exhaling. I think that could be useful for pneumoconiotics.



**Mrs Koch in the position
'Gathering qi from the sky'**



**Mrs Koch in the position
'Shooting the wild duck'**

COMMENTS ON THE VIDEOCASSETTE ON THERAPEUTIC QI GONG

P. WANG – O. DUHAMEL

Professor ZHANG Tiange explains first of all various breathing techniques used in medical qi gong:

- ? Breath in, breath out, pause...used for example for constipation problems;
- ? Breath in, pause, breath out...used for example in gastric ptosis and chronic hepatitis;
- ? Breath in, pause, breath out, pause... for the same indications as the previous line but more powerful;
- ? Breath in, pause, breath in, breath out...
- ? Breath in, pause, breath in, pause, breath in, breath out...
- ? These latter two techniques can be used with normal abdominal breathing (breath in while swelling the stomach and breath out while pulling the stomach in) or reverse abdominal breathing (the contrary) in which case incontinence, impotency, and anal prolapse problems (Qi deficiency), etc. can be treated effectively. This technique is also beneficial to the postgastrectomy syndrome
- ? Normal, light inspiration, deep expiration twice as long combined with a sound of varying frequency. This has a calming effect on the mind; if it is repeated ten to fifteen times three times a day for a month it helps to significantly reduce essential arterial hypertension.

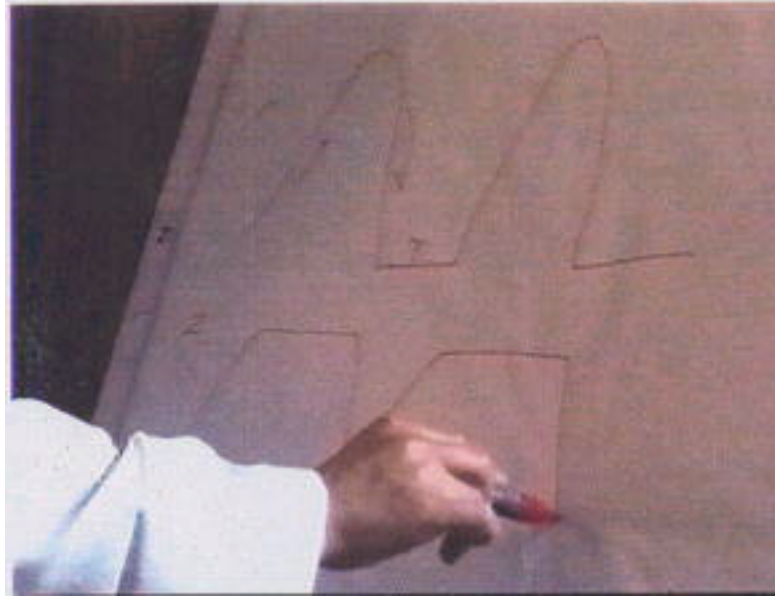
Professor ZHANG then shows how some gynaecological problems can be improved by massaging for instance the region under the navel (Dantian region), with one hand on top of the other, 36 times in one direction and then 36 times in the other. In men, massaging the testicles 7 times 7 times or 9 times 9 times can help improve some sexual dysfunctions.

He then shows a few qi gong movements in which the movement is combined with specific breathing and a projection of thought. The dragon dance, in particular, is a very classical exercise tonifying the liver and the spleen, stimulating the digestive organs and breathing, acting on all the rachis and obtaining an energising, mood elevating, and relaxing effect.

Lastly we see therapeutic practice concerning a young lady doctor suffering from a thoracic outlet syndrome. The principle is to get Qi to circulate along the meridians concerned, remove the obstacle between the head, neck and thorax, stimulate certain specific points of the head, neck and ear, and inject energy with the hand and fingers.

The last part of the cassette shows a traditional Chinese medicine museum located in Taichung (Taiwan). You see: ancient instruments for preparing plant powders; various types of plants with their place of collection in continental China; ginseng; mineral and animal products; jade; mother of pearl; and a small garden of medicinal plants.

You also see: a traditional pharmacy with its many drawers containing plants that have been dried and prepared for therapeutic use; magistral formula preparations for decoctions; plants crushed to powders and packed in unit sachets; classical formula compositions.



Examples of breathing cycles: inspiration, expiration, withholding of breath with empty or full lungs.

(Document: Ecole française d'acupuncture)



Passive mobilisation of the lower limbs by the qi gong master

(Document: Ecole française d'acupuncture)



Auricular acupressure by the qi gong master
(Document: Ecole française d'acupuncture)

DISCUSSION

Mr COCUBE

The cassette we have just seen represents a considerable sum of work by the team of three persons present here, three doctors—Mrs WANG, Mr DUHAMEL, and Mr SAUTREUIL—whom I wish to thank and congratulate for the technical quality of their work and also for the interest and exemplarity of what has been shown. We understand perfectly what it's all about. Qi gong is a set of movements, types of breathing, and concentration with considerable mental work by the patient and, where applicable, by the therapist who treats him by sending his Qi (energy, magnetism) either directly or via a needle on an acupoint.

BIBLIOGRAPHIC OVERVIEW ON QI GONG



M. COCUBE

1- The videocassettes we have just seen illustrate better than a long speech what qi gong is about and what it can be used for.

The first cassette, presented and translated by Mrs Koch, shows qi gong as a practice resulting in well being and helping in daily life situations.

This is the qi gong practised (with other exercises) in parks and gardens, brought back from from China by tourists: qi gong is in effect also a philosophy of nature.

French qi gong followers have started to appear in recent years in public gardens in Paris.

The second cassette offers on itself a complete, up-to-date, and lively ‘bibliography’. Mr Duhamel and Mrs Wang cannot be thanked too much for their presentation which illustrates perfectly the range of therapeutic uses of qi gong according to its advocates.

My bibliographic presentation of qi gong, inevitably more austere, can therefore be shorter.

It will above all be an overview highlighting a few points that are important for our approach.

2- Bibliographic sources

There are currently thousands of references on Internet mentioning the words qi gong or qigong. This different spelling has its importance as it leads to different listings.

The number of publications has spiralled; in other words we are faced with a huge amount of information, obviously of unequal value.

- ? We will therefore confine ourselves to a conventional approach and will begin by speaking about the major Chinese classics, some of which are very ancient. A large number of translations exist and mention can be made of the authoritative work by C. Despeux, a professor at INALCO. The bibliography gives an example of her work [1].

There are also now a number of books in French, often by Chinese authors [2] [3].

- ? A second source of information resides in the publications by institutes and establishments specially devoted to qi gong within China.

Since the beginning of the 1980s we have indeed witnessed in China a genuinely historic revival of this method.

Basing herself on the translations of a specialised documentation centre, A. Voranger, in her thesis [4] thus made a recension of experiments conducted in the various pathologies.

- ? Congresses are now held in China on qi gong. Abstracts in English are available. For instance in 1988 Beijing was the venue of the First World Conference for Academic Exchange of Medical Qi Gong. The participants came mainly from continental China, Hong Kong and, to a lesser extent, Japan.
- ? Lastly, we have been able to study a few ad hoc publications. When they are translations it is important that the translators have personal knowledge of the topic, given the size of the cultural gap.

3- Fields of application and results announced

Nearly all fields are concerned by qi gong applications, ranging from the simple maintenance of fitness, and body and mental hygiene, to extreme therapeutic applications in cancer or leukaemia cases.

Accounts are given of various experiments conducted on humans or animals, particularly on mice for immune defences. Such experimentation can be debated. On humans, the abstracts often do not mention whether the treatment comprised only the intervention of a master or whether the patients took part actively by doing certain exercises themselves.

The effects observed on patients concern:

- The characteristics of cerebral organisation in the qi gong state; as regards electroencephalograms: coherence, an increase in the α and β rhythms, a fall in δ rhythms;
- The effects of projected Qi, particularly on the temperature differences at different acupoints; blood viscosity; cerebral, peripheral and heart blood circulation; hypertension; stress; chronic bronchitis, sexual activity; psychological functions (increased perception, attention, and memory...);

Generally speaking, particular stress is placed on the beneficial effects on metabolism, blood circulation, hypertension and respiratory rehabilitation. Qi gong is reported to have a particularly powerful anti-ageing effect. But then Chinese techniques inspired by Taoism are traditionally geared to combating ageing.

An experiment mentioned in A. Voranger's theses is of special interest to us as it concerns the treatment of silicotics by qi gong (experiment conducted in China) [5]. We can discuss that during the debate.

4- Qi

Some bibliographic indications concern the physical agents intervening during the therapeutic relation—emission of Qi by the therapist and reception of Qi by the patient at the point of impact on the skin.

Thermal effects shown by changes in skin temperature have already been mentioned. Acoustic phenomena (infrasounds) have also been documented [6].

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**AN EXPERIMENT OF TREATING SILICOTICS BY QI GONG
PRELIMINARY REPORT ON 18 CASES OF SILICOSIS TREATED BY QI GONG
'Breath exercise' journal, December 1983 issue.**



B. MAHIEU

- ? The experiment concerns 18 silicotic patients treated and monitored from May to September 1982, including 14 pitface workers.
Average age: 51.6 years.
Average exposure duration: 16.6 years.
Average duration of the disease: 11.7 years.

The treatment consists in daily collective practice of qi gong for 2 ½ hours a day in three sessions.

Treatment efficacy is analysed with respect to :

- The functional symptoms and the sensation of general well-being: positive results.
- Laboratory examinations on red globules, hepatic function, renal function, seric proteins, blood coagulation: no significant evolution.
- Monitoring of arterial tension, of temperature, and of weight: no significant change, except a slight decrease in arterial pressure, particularly diastolic pressure. The apparently low weight of the patients is to be noted (? 56 kg).
- Monitoring of radiological images: no change in the nodular images characteristic of silicosis. The authors report only a slight fading of the pulmonary shadows at the level of the hila in four cases.

The authors conclude: 'there is clear efficacy as regards the improvement of the general state and the clinical symptoms, with an improvement of the short breath of silicotic patients'. They acknowledge there is no improvement of radiologically visible lesions but note with satisfaction there is no worsening.

? *Comment by Mr. MAHIEU*

- The sample is very little: 18 cases. This may well surprise us given the large number of silicotic patients in China and the widespread practice of qi gong there.

- The experiment lasted only four to five months. That is clearly insufficient to assess radiological changes. At least four to five years would have been necessary.
- The population is special: it started to be exposed around 1967 at the average age of 35 years... are they 'intellectuals' shifted to the productive sector during the Cultural Revolution? Their silicosis appeared very rapidly: approximately five years after the beginning of exposure. We have every right to imagine the dire labour conditions.
- The medical monitoring does not include any functional respiratory exploration that would help assess the evolution of the respiratory insufficiency.
- The improvement felt by the patients is similar to that observed among miners from the Nord - Pas-de-Calais departments of France during the 'trial to prevent the worsening of pneumoconioses by inhaled soluble aluminium salts', which has been put down to breathing re-training and the positive psychological impact of the interest shown in these patients. Also, in his speech on respiratory rehabilitation, Dr PUJET clearly underlined, at the beginning of the day, the beneficial effects of physical exercise in itself.
- None of the laboratory examinations carried out have anything to do with silicosis on first sight.

DEBATE

Mr COCUBE

You have just heard the presentation of an old qi gong experiment (1983) carried out on pneumoconiotics. As we have seen, Dr WANG has researched the most recent work undertaken within China and we are now going to hear her on the topic 'Qi gong and pneumoconiosis'.

Mrs WANG

A distinction is to be drawn between health maintenance and therapy. As regards health maintenance, qi gong is like all sports ... jogging, tai chi chuan, etc.

On the other hand, when it comes to treatment, we are talking about medical qi gong, which is practised in a medical or a hospital setting. Moreover, a fortnight ago, a new regulation was introduced, severely banning the practice of the various types of qi gong outside the medical setting.

Before the new regulation, China had been trying for two years to test all qi gong methods to find those with most applications.

Everyone tried to find scientific justifications for their methods: studies on mice, statistical analyses... but how can projected Qi be monitored?

The medical profession is very vigilant but open-minded to research.

On Internet you can find information on the types of qi gong used, but when you look closely there are only a few cases. Clinical observation is the important point. I'm not making any judgement but it can be noted that, since the 1950s, establishments for pneumoconiotics and terminal occupational diseases have tried all the traditional methods aimed at well-being.

As you saw in the second cassette, qi gong is used to breath better, for massages on the stomach and for massages on acupoints. We have already spoken of acupuncture: some points are more effective than others. You massage them yourself, and then there are breathing exercises like we mentioned earlier, deep breathing, reverse breathing, etc...

Mr COCUBE

I have noted a certain parallelism with what Mr PUJET said this morning on the improvement in the sensation of well-being. No matter how subjective it may appear, objectivity can be sought by asking patients to locate their sensations on scales. These experiments are very current in psychology, so where's the problem?

Dr MAHIEU, if we wanted a resumption in the kind of experiments you have described, what should be done? What methodology should be adopted ?

Mr MAHIEU

The application of our western scientific criteria to experiments conducted in the context of the Chinese conception of medicine leads inevitably to very negative criticism: ethics and problematics are too different.

If such an assessment of the efficacy of qi gong were to be undertaken according to 'our' standards, it would be carried out as a case-control study with 3 groups of 70 to 80 persons each :

- A group of treated silicotics pair-matched (particularly regarding their consumption of tobacco) with
- A group of untreated silicotics
- And a group of healthy subjects treated the same way as the first group.
- The impressions of the patients with regard to what they feel would also be collected by means of a questionnaire.

This longitudinal study would take place over at least four to five years, monitoring the following objective parameters: radiographic images read collegially and 'blind' in accordance with the international classification; thorough respiratory functional explorations (spirometers, flow rates/volume curves, CO transfer, etc...). Lastly, it would be necessary to apply to the results the classical statistical tests of epidemiology to determine significance.

Following such a population for four years represents a very time-consuming study.

Mr COCUDE

We used that number of persons when we studied the sensitive crystallisation method, crystallisation of copper chloride (CuCl₂) with additives as a possible indicator of the pneumoconiotic risk. We took three population groups, a control group not exposed to dusts, a group of exposed subjects but who had not developed the disease, and lastly a group of silicotics.

I now turn to Dr AMOUDRU: 15 or 20 years ago, at the time when you were in charge of 2 000 hospital beds in the Nord department, would you have agreed to launch a study with a methodology like that explained by Dr MATHIEU?

Mr AMOUDRU

Thank you, that's a very good question as would be said on television. I think we were faced at the time with problems of life and death for which these therapies with functional aims would have appeared out of the question. I don't think we would have sought to use such practices, no matter what we may think of them, in the state of distress in which were to be found these populations with tuberculosis, early deaths, acute respiratory insufficiencies, etc...

It's because we are at another stage of the pathology, with more discreet manifestations at the beginning of slow changes with a low, then progressive functional effect and which can therefore be improved by such techniques.

I was therefore in such a different epidemiologic and cultural context that I would not have attached any interest or importance to these techniques.

I would like to ask Dr MAHIEU: in what context was this experiment carried out, a hospital establishment? A mine? Does the thesis state the context?

Mr MAHIEU

The authors are situated: two of them are members of the qi gong research association of the province of YUNNAN and the third works at the silicosis treatment and prevention hospital in KUNMING. We can believe that it took place in a hospital context.

Mr AMOUDRU

Regarding qi gong, I would have liked to ask those who have practised this therapy or studied these documents: doesn't this fit into a very specific cultural model which allows it to work in a way that I'm ready to believe effective, but would it be transposable into our western mentalities? It's not because I like paradoxes but I genuinely feel that this kind of technique supposes an attitude and a mentality that refer to a whole cultural universe and way of thinking that are very different from ours. With the Voltairian and the rationalist spirit often to be found in France at all levels of society and knowledge, do these techniques work?

Mr COCUBE

I, for my part, indeed feel that the cultural reference is definitely important, which explains the interest of experiments on animals or cells where the cultural gap does not arise. Although on principle rather opposed to animal experiments, I recognise that in this specific case they could be justified.

Moreover experiments on the immune effect of qi gong, which I spoke of in the bibliographic overview, often concern animals (mice) or even animal cells.

Mr LAFON

We indeed have the abstract of a study carried out at the Institute of Qi Gong Sciences in BEIJING. It concerns the effect of qi gong on mice immunodepressed by cyclophosphamide (CY) Three groups were formed, one with animals having received it on the first day, the second with animals that received it and Qi projection for 10 to 15 minutes for 7 days, and the third which received only physiological liquid on the first day.

They observed that qi gong lessened the negative effects of CY on the thymus (thickening of the cortex and medulla) and spleen (proliferation of T cells).

It is merely an abstract which does not give any information on the mechanisms of the exposure and it is very difficult to give a firm opinion on this paper.

CONCLUSION by M. COUDE



One shouldn't of course take any affirmation on qi gong at its face value but, as we have seen, scientific experiments can be carried out with it. We have taken good note of the difference between the qi gong you practice yourself (or under the guidance of an instructor) and qi gong practised by a therapist on a patient. We have learnt that, in China, only doctors can now practice it, which leaves it to be believed that, while therapeutic qi gong can be beneficial, it may also present risks.

Experimentation, whether it involves work on oneself or work with the projection of Qi, does not raise insuperable difficulties. There are methods to assess the psychological repercussions of a personal practice like concentration or the physiological impact (coherence of the brain waves). These methods have moreover been successfully applied to test other oriental disciplines which arrived earlier in France, such as yoga and zen.

The cultural gap itself is not insuperable, provided it is borne in mind that support from the subject is required more than elsewhere. This handicap can moreover be overcome by conducting animal experiments.

As for the applications, relaxation or well-being are put forward firstly: this is qi gong 'helping in everyday life'. A destressing factor, it can therefore be beneficial combined with any other therapy because it is now known that stress weakens the immune defences.

That would be an explanation for its effects on the very wide range of pathologies seen in the bibliography; often, moreover, the improvements observed concern the subjective state of the patients as much as biological parameters which sometimes remain unchanged.

Turning to pathologies, mention is to be made above all of its use in combating hypertension and senescence which are public health problems in France: one in two French people over 50 years old suffer from hypertension and more and more of the population is growing older and therefore increasingly exposed to ageing diseases.

Qi gong is also worth being studied where western medicine is inoperative, which is the case with pneumoconiotics. We therefore sincerely hope pneumologists will take a close interest in this therapy.

The pharmacopoeia

THE PHARMACOPOEIA IN CHINESE MEDICINE

P. WANG – O. DUHAMEL

I - GENERAL PRESENTATION

YANG

NATURE

Warm : Disperses the cold, heats the Yang.

Hot : Treats and tonifies cold syndromes.

FLAVOUR

Hot : Dispersing effect, activates energy circulation, sudorification, clears stagnations.

Sweet : Harmonises, tonifies deficiency syndromes, antispasmodic and anti-pain.

Inspid : Diuretic, absorbing, disperses edemas.

Aromatic : Activates the spleen, awakens the spirit, 'vaporises' moisture.

PLACE OF ACTION

Towards the top, rises, spreads, floats.

YIN

NATURE

Cool or cold : Treats heat syndromes, cools, eliminates fire, antitoxic.

FLAVOUR

Acid, acrid : Astringent, tightens, consolidates.

Antidiarrhoeal, decreases excessive perspiration, haemostatic.

Bitter : Dries, eliminates, improves paresis, purgative.

Salty : Softens, loosens, moderate laxative, moistens, antitumoral.

PLACE OF ACTION

Towards the bottom, disperses, immerses, dissolves.

NB: Chinese drugs have receiver meridians channelling them to the organs to be activated.

II - CASE OF PNEUMOCONIOSIS

Physiopathology

The external excess (dusts) invades the lungs and leads to dryness and stagnation of blood and of energy in the lungs. Phlegm forms, becomes concentrated and form lumps: the progressive formation of phlegm leads to a depletion of lung, kidney and spleen Yin.

Clinical practice

First level: Dryness of the lungs

Dry cough; little phlegm; chest oppression; breathlessness worsened by movement; pale or red tongue not very moist; thready and slack pulse.

Treatment: Moisten the lungs; spread energy.

Prescription

<u>Pin Yin</u>	<u>Common Name</u>	<u>Pharmaceutical Name</u>
Bei Sha Shen	Glehnia Root	Glehniae Radix
Mai Dong	Ophiopogon Root	Ophiopogonis Radix
Chuan Bei Mu	Fritillary Bulb (Chuan)	Bulbus Fritillariae Cirrhosae
Ku Xing Ren	Apricot Seed	Semen Armeniacae Amarum
Bai Bu (Zhi)	Stemona (processed)	Stemona Radix
Sheng Di Huang	Rehmannia Root	Rehmanniae Radix
Yu Zhu	Polygonatum	Polygonati Officinallis Rhizoma
Kun Bu	Japanese Sea Tangle	Laminariae seu Eckloniae Thallus
Jie Geng	Platycodon Root	Platycodi Radix

Second level: Stagnation of blood and phlegm: energy deficiency

Cough with thick phlegm or phlegm mixed with blood; chest oppression with pain and short breath; waves of heat on the palms of the hands and the soles of the feet; night sweating; red tongue with white coating or little coating; tense, rolling or hesitant, and wiry pulse.

Treatment: Disperse the phlegm, activate blood circulation and energy, soften the concentrations.

Prescription

<u>Pin Yin</u>	<u>Common Name</u>	<u>Pharmaceutical Name</u>
Bei Sha Shen	Glehnia Root	Glehniae Radix
Pi Pa Ye	Loquat Leaf	Eriobotryae Folium
Gua Lou		Fructus Trichosanthis
Xie Bai	Bakeri	Allii Chinensis Bulbus
Tao Ren	Persica	Persicae Semen
Ru Xiang	Mastic	Olibanum
Chi Shao	Peony Red	Paeoniae Rubra Radix
Hai Zao	Sargassum	Sargassum
Dan Shen	Salvia	Salviae Miltiorrhizae Radix
Chuan Xiong	Cnidium	Cnidii Rhizoma (Ligustici Rhizoma)

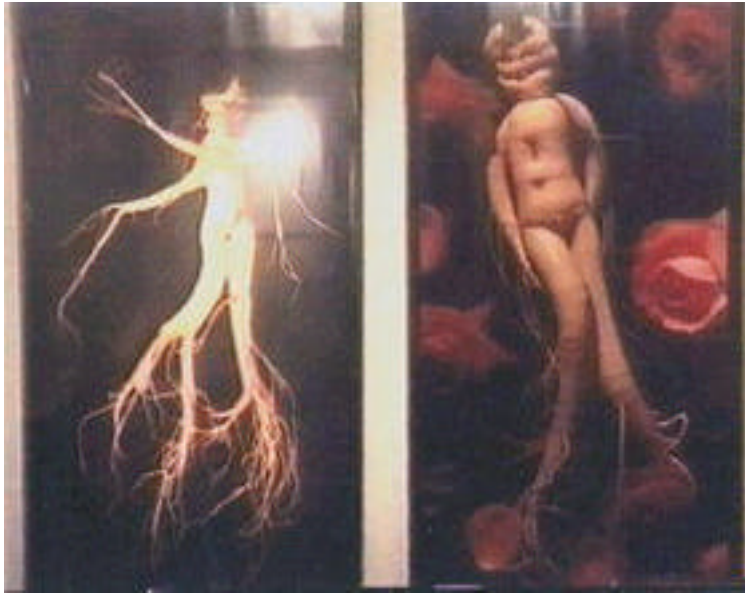
Third level: Yin and Qi deficiency of the lung, spleen and kidney

Cough with expectoration of phlegm and blood; breathlessness and chest pain; intense asthenia; sensitivity to the cold; cold limbs; stiff, aching and weak back and knees; pale or swollen tongue; deep, wiry and weak pulse.

Treatment: Nourish and tonify the lungs, spleen and kidney.

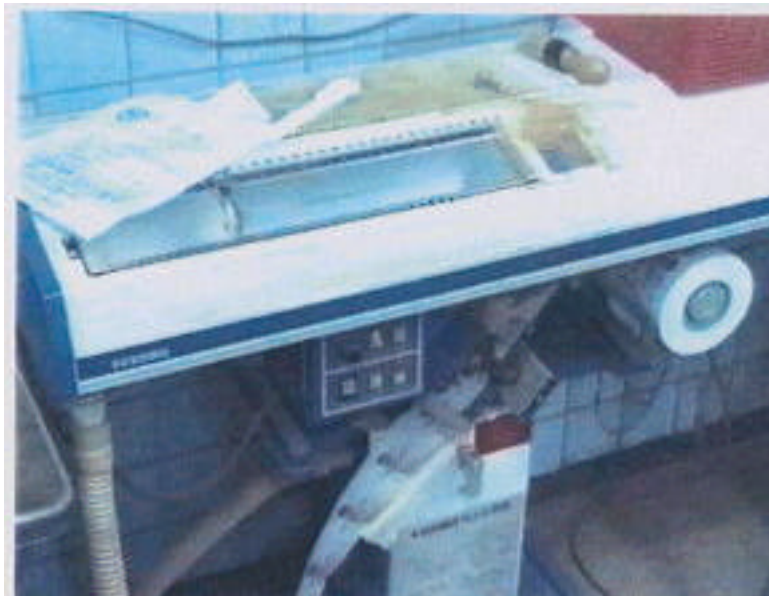
Prescription:

<u>Pin Yin</u>	<u>Common Name</u>	<u>Pharmaceutical Name</u>
Reb Shen (Hong)	Ginseng	Radix Ginseng Rubra
Bei Sha Shen	Glehnia Root	Glehniae Radix
E Jiao	Donkey Hide Gelatin	Colla Corii Asini
Shou Di Huang	Rehmannia (Cooked)	Rehmanniae Radix
Wu Wei Zi	Schizandra	Schizandrae Fructus
He Tao Ren		Semen Juglandis
Bai He (Chuan)	Lily	Lilii Bulbus
Yu Zhu	Polygonatum	Polygonati Officinallis Rhizoma
Ge Jie		Gecko
Gan cao	Licorice	Glycyrrhizae Radix



Ginseng root

(Document: Ecole française d'acupuncture)



Modern production of traditional remedies (lyophilised extracts) in Taichung (Taiwan)

(Document: Ecole française d'acupuncture)

RECENT WORK IN CHINA ON PNEUMOCONIOSIS

P. WANG – O. DUHAMEL

I - Making use of Internet

The consultation of Chinese Internet sites on pneumoconioses gave the following result:

more than 180 articles have appeared in the past decade in China.

In short the following is to be found:

- Clinical observations and comparative clinical trials testing more than 20 plant strains and approximately 25 compositions of Chinese drugs tested on a large number of patients (from 53 to 427 cases depending on the studies). The results have been globally very encouraging.
- Fundamental research at cell level on the biological effect and pharmacodynamic action of drugs, and also animal experiments.
- Uses, with a view to prevention, of drugs and also of methods such as the specific Qi Gong breathing exercises.
- Proposals for early diagnosis of the disease by the aspect of auricular acupoints and proposals for therapies used in conjunction with acupuncture.
- A variety of epidemiological research work on the pathogenesis of pneumoconiosis.

Research work is conducted throughout China, from the north to the south and from the east to the west. For some drugs, there are multi-centre studies with national coordination offices.

These are just the first abstracts—documentary research obviously has to be taken further. This supposes greater cooperation between France and China, requiring specific organisation and specific means.

II - Results of clinical and biological experiments on the treatment of pneumoconioses with certain Chinese drugs

- 1) Phagocytosis capacity of macrophages collected by alveolar lavage in mice exposed to coal dust

% survival of macrophages; % phagocytosis; quantity of ATP in macrophages

without exposure

- ✍ without exposure with C (C = formula of Chinese drugs)
- ✍ without exposure with Zn
- ✍ without exposure with C + Zn

with exposure

- ✍ with exposure with C
- ✍ with exposure with Zn
- ✍ with exposure with C + Zn

1) Improvement of the main symptoms of pneumoconiotics after treatment by a placebo, or C, or Zn, or C + Zn

% improvement	Placebo	C	Zn	C+Zn
Phlegm	16	71	65	87
Breathlessness	12	61	40	75
Chest pains	18	53	47	65
Oppression	12	58	42	75
Fatigue	16	63	47	70
Increase in appetite	35	60	42	75
Bronchitis	6	81	47	85

A considerable improvement is noticed with the Chinese drug, even more so when combined with zinc.

DEBATE

Mr SAUTREUIL

I would simply like to refer back to Mrs WANG's speech to say how enriching it can be—for the western doctor I am and for the other colleagues here present—to take an interest in traditional Chinese medicine which to our mind is above all acupuncture but also the pharmacopoeia. The 'plus' for a practising physician concerns the analysis of symptoms and treatment possibilities.

Mr LAFOREST

A complementary question: the effects of Chinese drugs, and of drugs used in combination with them, have been spoken of, but you did not mention the equivalent of a posology. Do you reason in terms of doses, and how are they determined?

Mrs WANG

All I can say is that Chinese drugs are classically prepared as decoctions of dried plants. A decoction is prepared with 3 to 15 grammes per plant and each formula is different. The decoction is drunk once in the morning and once in the evening for 3 or 4 days. Today, with the new techniques, the compositions are well defined and depend on the pharmaceutical laboratory.

Over the past ten years lyophilisates of Chinese drugs with concentrations of 5%, 10% ... a whole series of productions, have been greatly imported worldwide. The dose depends...

Mr BONNEVIALE

I would like to give my reaction regarding what Dr WANG said regarding the personal factor. Some people are believed to be more prone and others less prone to contracting silicosis. It is my personal conviction that, if people are exposed to the same amount of dust, they will all finally develop silicosis. If some people suffer less from silicosis than others, it's because they were employed in posts less exposed to silica dust. I'm not a doctor but, if a personal physiological factor exists, in my opinion it plays only a negligible role in comparison with the exposure factor. To return to what Dr MARQUET said at the beginning of the day: you can't beat prevention at the work place.

Mrs WANG

I agree with you, but nevertheless we see different progressions of the disease in different patients. Some people present fibrous nodules straightaway whereas others are still at an earlier stage. The same applies in Chinese medicine. The disease should be prevented before it develops and any worsening should be avoided. Depending on one's personal temperament the disease develops at a different pace.

Mr COCUBE

I regret that Messrs. MAHIEU and AMOUDRU have had to leave us. It would be necessary to have the opinion of a doctor who has effectively monitored miners from the Houillères (coalmines). As far as I recall, the doctors at the Houillères—I'm thinking particularly about the Houillères du Midi, and perhaps also about the Houillères du Nord-Pas-de-Calais—had observed differences in the development of pneumoconiosis, even in the same family between brothers. Obviously, we would have to have doctors who have effectively monitored families of miners. In the Nord-Pas-de-Calais department, there were dynasties of miners, whole families went to work down the mine from one generation to the next.

Mr KOCH

The regulation on pneumoconiosis in coalmines was elaborated with Dr AMOUDRU some thirty years ago. The aim was that an averagely prone to silicosis person working in a mine should not catch the disease. Resources weren't available to prevent and combat dusts in mines to the extent that there would be nil dust there. The aim was to protect only workers averagely prone to silicotic dust and it was accepted that some people are more prone to the disease than others, which is why the regulation stresses the importance of medical supervision of workers at coalmines.

Mr LAFOREST

I could add that this involves the general problem of the determination of limits in occupational diseases, whether pneumoconioses or diseases caused by toxic substances or allergies. This same problem still arises today and the limits laid down by the French or international regulations are still: 'x per cent of the population is protected.' By the very setting of limits, it is clearly accepted that some people are more prone than others. A good example is given by allergy: 2 or 3% of the population will have acute allergic reactions to certain exposures whereas 95% will not be affected at all. Limit cases, individual proneness, will always exist, posing a real problem in preventive medicine.

Mr BONNEVIALE

In my opinion—that of a non-doctor—nobody is totally immune. In some coal basins the prevalence of silicosis exceeds 50% (in other words, out of 100 miners, at least half contract silicosis), so why aren't the others affected? The answer is probably because they were less exposed in work posts where there was little or no dust.

Mr KOCH

Mr BONNEVIALE's remarks do not contradict what I say. I entirely agree: what applies in rats applies in men—they end up contracting the disease. INERIS and, before it, CERCHAR, have conducted enough experiments exposing rats to a very high amount of dust. Even at low exposures a range of sensitivities is to be found.

Mr COCUBE

There is another question I would like to ask, and perhaps Dr LAFON can answer. In your dossier you have seen the stages, or more exactly the levels, of pneumoconiosis according to Chinese clinical practice; I'm referring to the document by Mrs WANG and Mr DUHAMEL, entitled "Pneumoconiosis in Chinese medicine" and which addresses clinical practice.

I read ... first level ... dryness of the lungs, with the description of a certain number of points: dry cough, little phlegm, etc...; second level ... cough with thick phlegm or phlegm mixed with blood, chest oppression etc...; third level... cough with expectoration of blood, breathlessness worsened by movement, weariness, asthenia.

Mr LAFON

It's very difficult to reply. Admittedly, in clinical practice a certain number of factors are found classically: an increase in symptoms and a beginning with a dry cough, the appearance of phlegm—all of that is the normal development of pneumoconiosis. In contrast, when the appearance of blood is seen, when the general state of health worsens, it is perhaps the normal development of pneumoconiosis, but it may also represent the appearance of tuberculosis, or that of associated pathologies. How does tuberculosis fit into this context since it is managed with very specific treatments?

Mr DUHAMEL

No specific answer can of course be given. We have received information from China without being really specialists ourselves. Apparently the secondary disorders at the end of the experimentation are distinguished from the bacterial disorders following pneumoconiosis. If we were interested, we would have to contact the people who are effectively conducting these studies on thousands of cases, and we would have to address the matter in greater depth. I think the subject is worth it.

Mrs WANG

In Chinese medicine some symptoms are very important in diagnosing and in prescribing drugs, whereas other are not.

Another point also is that in Chinese medicine patients are constantly monitored and X-rayed regularly. Monitoring and x-raying are used in conjunction and even in tuberculosis. The Chinese medicine formula does not change. On the other hand, more or less elements are added in the compositions between the first and the second stage because there is no distinction between tuberculosis and fibrosis as regards their symptoms. X-raying shows the difference.

Mr COCUBE

We are now going to conclude. I am asking Mr OBRINGER to conclude the debate on the pharmacopoeia for the same reason which made me ask Mr KOCH to conclude the debate on acupuncture—they both have an impartial view of the subjects discussed.

CONCLUSION by Mr OBRINGER

I wish to go over a few points very rapidly, and point out of course that the use of Chinese therapies such as qi gong and acupuncture fit into a historic and cultural context different from ours in many respects. It should be remembered that, in the scientific and medical field, China did not undergo the same epistemological upheavals as those experienced by the West in the 17th and 18th centuries roughly speaking. This means we don't have the same requirements as China from the viewpoint of scientific rationality.

Applying Chinese 'recipes' directly in an entirely different cultural context therefore requires precautions, and yet we are tempted to do so when we ask for a few acupoints, a few qi gong exercises or a few Chinese pharmacopoeia recipes that could relieve pneumoconiotics. But it is difficult for Chinese practitioners to give a precise idea of their specific vision of the body and of the disease, since all of that fits into a far broader context.

Mention should also be made of the extreme wealth of traditional Chinese pharmacotherapy. Also, although the Chinese traditionally use several thousand plants, Chinese flora may be still much richer for us, pharmacologists. Generally speaking we cannot limit ourselves to the plants used by traditional or local medicines, and sometimes we have pleasant surprises by making far broader inventories. Regarding the number of taxons, Chinese flora is one of the richest in the world, just after the floras of Brazil and Malaysia.

It should also be stressed that the concept of pneumoconiosis does not exist in traditional Chinese medicine; this disease is included in traditional nosologic categories which makes documentary research difficult. You don't find the specific treatment of pneumoconiosis but, for example, that of dryness of the lungs. Also, regarding the use of Chinese plants, it should not be forgotten there are other problems. One of these is their identification according to our Linnean classification of plants. Recently in Belgium, we saw cases of nephritis caused by slimming diets using Chinese plants and containing *inter alia* aristolochia; however aristolochic acid can cause serious nephritis. One of the problems in importing and selling Chinese plants is their precise identification.

We are in fact faced with two solutions: on the one hand, using traditional Chinese medicine formulas which often comprise ten or so plants or minerals, and, on the other hand, adopting a different approach—that of western pharmaceutical companies already on the spot in China—involving the study and use of plants from the point of view of their active principles. But I don't see why this would be called Chinese medicine, it's simply the use of Chinese flora.

Lastly, I would like to recall, like Mrs LEMEE could, that very precise legislation lays down the limits for the sale and import of plants. Nevertheless, the cases of medicinal treatment of pneumoconiotics mentioned by Mrs WANG should be the subject of further research.

Mr COCUBE

We are drawing to the end of our symposium. It has been an opportunity to examine the different aspects of Chinese medicine studied which were each concluded by remarks on what they could contribute in treating pneumoconiotics.

I feel this day has been particularly enriching and I hope that all what we said and all what we told each other will be followed up. In any case I am pleased to think about the bilateral contacts that can arise between the symposium participants.

It only remains for me to close this session by thanking first of all the speakers and all the participants for their presence and their speeches.

I also wish to thank Dr TRIADOU, absent today, thanks to whom this symposium could be organised and took place so smoothly. My thanks also go to the DARPMI team for its essential contribution not only to the preparation and holding of the meeting but also, I'm sure, to the after-symposium.

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