

## REPORT

# Acupuncture

*Let us weed through the old  
to bring forth the new*

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### History

The Chinese have been known to practise acupuncture for over 2,000 years. No one knows for sure when or how it all began. A colourful story goes that acupuncture was first discovered by a warrior shot by an arrow during battle. He found that when struck by a second arrow, this relieved the pain from the first.

The history books, however, say that acupuncture was known even before the discovery and use of metal implements. According to the Shuo Wen Chieh Tzu (a dictionary of characters) compiled during the Han dynasty (206 B.C.–220 A.D.) acupuncture was done then with a sharp stone called 'pien'. By pricking the 'pien' against certain parts of the body, the ancient Chinese found that pain could be relieved.

After this came the use of needles made of bone and bamboo. With the discovery of metals, copper, iron and silver needles came to be used. The acupuncture needles in use today are made of stainless steel and vary from about 5 cm (two inches) to 23 cm (nine inches) in length.

By the Tsin Dynasty (A.D. 265–420) knowledge of acupuncture was advanced enough for a comprehensive work to be written. Chen Chiu Chia Yi Ching (*An introduction to acupuncture and moxibustion*) described for the first time 349 basic acupuncture points, and listed altogether 649 such points on the human body.

In 1027, bronze figures with holes marking the location of acupuncture points were used for the teaching of the art. These bronze figures were dipped into wax and those who failed to pass the needles through the correct sites failed the examinations.

The traditional form of acupuncture continued to be popularly practised in China throughout the centuries except during the Ching dynasty (1644–1911) when its use was discouraged. Despite a formal decree banning it in 1822, the art continued to be clandestinely practised throughout China, especially in the remote areas where other forms of medical help were not readily available.

It was for this reason too that the Chinese Communists during the Sino-Japanese war turned to acupuncture and other forms of traditional Chinese medicine to heal their sick and wounded. Chairman Mao Tse-tung encouraged the use of traditional Chinese cures together with modern medicine so that the "past could serve the present".

Acupuncture in its traditional form is used in the treatment of a wide range of ailments, from headaches, gastric upsets to neuralgia and paralysis. This traditional form of acupuncture is also practised by the Chinese 'sinsehs' or native-physicians in Singapore amongst the Chinese-educated people.

The use of acupuncture anaesthesia in surgical operations is, however, a new development. The first time this was attempted was in 1958 when acupuncture was used to relieve the pain of a patient suffering from tonsillitis. This proved so successful that with the aid of acupuncture, tonsillectomy was performed. Since then over

400,000 operations have been claimed to have been done under acupuncture anaesthesia with a 90 per cent rate of success.

### VISIT TO CHINA

In April 1972, two months after President Nixon's historic trip to Peking, a party of 20 doctors from the Singapore Medical Association visited China to observe medical facilities in that country. I believe this was the first time a national medical body from another country has visited China since the cultural revolution.

The group from the Singapore Medical Association consisted of doctors from the various medical disciplines and although interpreters were present, most of the clinical sessions were conducted in Chinese as the majority of the doctors in the group spoke the language.

The observations made in this article are purely my own, and should not be taken as the official views of the Singapore Medical Association.

We had three occasions to watch treatment by acupuncture on this trip. Our first was at the Deaf and Mute School in Kwangchow where deaf children were treated. Our second was at a centre in Peking where traditional Chinese medicine was practised, and the third, and perhaps the one that impressed us most, was at the Third Teaching College of the Peking Medical College.

#### Acupuncture for deaf mutes

The treatment of deaf mutes by acupuncture is also a recent development of the art. The first time this was attempted was during the cultural revolution.

The deaf mute school which we visited in Kwangchow was situated at the outskirts of the city. It was a plain two-storey building caring for 2,000 pupils. Because of the type of teaching involved there was a high staff/student ratio of about one to ten. Modern equipment was rare and audiometric tests although carried out on the children were done in a rather elementary fashion.

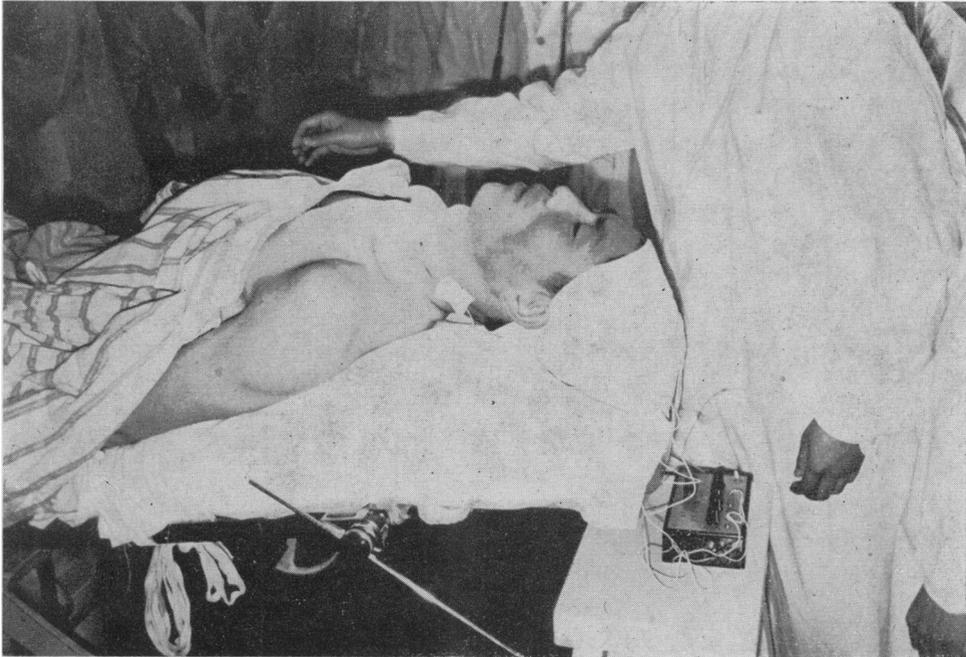
Children who were admitted to the school received daily acupuncture for about two weeks. There would be an interval of rest for about five days when there would be a review and the treatment was then resumed for a further two weeks. In this way acupuncture treatment was continued for periods of between three to eight months depending on the degree of loss of hearing.

The children were between seven years and about 15 years old. The earlier the children with defective hearing were detected and sent to the school, the better the prognosis and recovery.

The acupuncture treatment was done by piercing the dorsum of the hand in the space between the first and second metacarpal (the 'Hoku' point) with a fine stainless steel needle about 15 cm (six inches) long. The needle would be pierced perpendicularly to a depth of about one centimetre, and it would be twirled in its axis in a clockwise and counter-clockwise fashion with the manipulator rolling the needle between his index finger and thumb. This twirling was done about 60 times a minute.

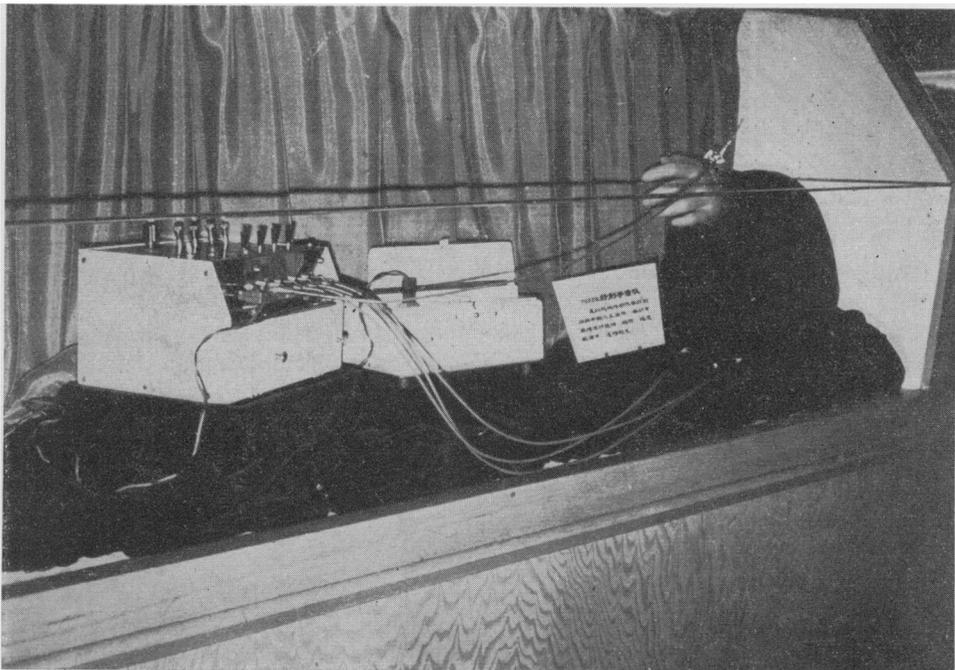
When the needle was inserted into the correct point, a sense of warmth and numbness was felt in the entire hand. It was amazing to watch how even the little ones submitted to acupuncture needling without even a tear. Some of the children were not brave, and there were a few among the new recruits to the school who needed some coaxing.

We were even more surprised to watch on a later occasion, children in the extramural centres learning the art of acupuncture and taking turns at needling both themselves and their friends!



**Figure 1**

**26 year-old male being prepared for removal of thyroid tumour. Acupuncture needles are inserted into each side of the neck and connected to a control box which feeds galvanic current to the needles**



**Figure 2**

**An elaborate control box which twirls the acupuncture needles mechanically instead of sending faradic current through them.**

For the treatment of deafness another site for acupuncture is the region at the angle of the jaw, in front of the tragus of the ear. The child co-operates by dropping his jaw when the needle is used at this point. Sterilisation of the needles is by wiping with alcohol and few cases of complication from infection have been reported.

In addition to acupuncture, oral speech therapy is intensively pursued. The teachers are extremely patient and devoted to their task.

We were impressed with the achievements of the school, but many of us, including the ENT specialist in our group, felt that the excellent results were due probably more to the intensive speech therapy rather than to the acupuncture itself.

We tried to test whether the children could really hear or whether they were lip-reading. We took two of the older ones, faced them away from us, and then proceeded to ask them questions in Chinese. They had some difficulty in understanding us, and this the instructor attributed to the fact that they were unused to our accent. They had no difficulty in answering the questions of the instructor even though they were faced away from him.

The children of the school produced an impromptu concert for our visiting group and it was an experience to watch them dance, sing and play musical instruments like normal hearing children.

#### *Traditional Chinese acupuncture*

In Peking we visited a hospital where traditional Chinese medicine was practised. The patients in this hospital were treated with herbal cures or by acupuncture, often by a combination of both.

We were already familiar with this kind of acupuncture because the Chinese 'sinsehs' or native physicians in Singapore use this method. In Singapore besides the use of the needle, acupuncture is often done in combination with moxibustion. This consists of the burning of the herb moxa (wormwood or *Artemisia vulgaris*) either at the site of penetration on the skin, or heating the needle with it. Although moxibustion is still practised by the Japanese acupuncturists, we were surprised to find that it had fallen out of favour with the Chinese physicians.

In this hospital which treats over 700 inpatients and has a staff of over 300 seeing 3,000 outpatient cases a day, we found traditional Chinese acupuncture used for a wide variety of ailments.

Traditional type of acupuncture consists of simply needling the patient along selected points in the body. The sites chosen are along the 'Ching-lo' or meridian routes of the life-force or 'Ch'i'. In modern acupunctural practice as we witnessed in the Western-type hospitals, the acupuncture apparatus was more sophisticated with the needles connected to a control box which varies the amount of galvanic current fed to the needle.

The cases we saw being treated at this hospital included those patients with neuralgia, hemiplegias following cerebrovascular accidents, and Bell's palsy. Patients with arthritis of the joints had short thick needles inserted into the affected joints.

Some of the cases suffering from gastric ailments were treated by modern methods of acupuncture. They had two needles stuck in the epigastric region and connected to a portable control box which regulated electrical stimulation. By turning the knobs the patients controlled the amount of stimulation needed to relieve them of their pain.

In this hospital we found also that besides using the traditional cures, modern medical aids like x-rays and antibiotics were also used.

It was hard to say from the short visit whether acupuncture accelerated recovery

from cardiovascular catastrophes, but in rheumatism and other joint pains, most of the patients said they felt better with treatment. The gastric cases too felt better with acupuncture especially since they were able to participate in the therapy by regulating their own acupuncture control boxes.

### Acupuncture anaesthesia

The use of acupuncture anaesthesia in surgery first began in 1958. The hospital where we watched operations being done under this form of anaesthesia was the Third Teaching Hospital of the Peking Medical College.

This is a modern hospital with 650 beds and 700 workers. The hospital is well equipped and since 1958 over 5,000 operations have been carried out under acupuncture anaesthesia with 90 per cent success. We were shown round the hospital by Dr Mueller, the Medical Supervisor, who spoke fluent English and is now a Chinese citizen.

Traditional acupuncture relieves pain, but the degree of analgesia is often not deep enough to be anaesthetic in its effect. Acupuncture anaesthesia achieves this by requiring the patient to undergo needling with electrical stimulation for at least 30 minutes before the operation.

The use of electrical stimulation is purely mechanical as the same results are achieved by twirling the acupuncture needles for the same length of time. Because it is laborious to twirl the needle mechanically throughout the operation, electrical stimulation is used instead. Another form of control box twirls the acupuncture needles mechanically instead of sending faradic current through them. When a current is used, this is at 105 cycles per second. Needless to say the patient is first tested for loss of skin sensation before the scalpel is used.

We watched four operations carried out under acupuncture anaesthesia. The first one was for the removal of an ovarian cyst from a 42 year-old female. Two acupuncture needles were inserted into her lower limbs and two more into her back. The needles were connected to a control box and this supplied electrical stimulation for half an hour before the operation started.

Throughout the entire operation the patient was fully conscious. I was able to take her blood pressure and pulse readings and these consistently remained normal. No premedication had previously been given yet she was calm and able to carry on normal conversation while the operation was in progress.

I asked whether she felt any pain. She replied that she felt no pain when the incision was made, but admitted that when the gut and other viscera were handled, she experienced some discomfort. Otherwise she felt fine though a little sleepy and thirsty. There was a medically qualified hypnotist in our group and he was of the opinion that the patient's sleepiness was not due to any form of hypnosis.

The Chinese doctors explained that acupuncture anaesthesia does not provide good relaxation of the abdominal muscles, so for operations which require better exposure of the organs as in a hysterectomy, general anaesthesia is preferred.

After the last stitch was put in, the patient managed to sit up and get on to a trolley from the operating table with little assistance. This patient had previously had an appendicectomy a few years before under general anaesthesia. When asked whether she preferred acupuncture anaesthesia to general anaesthesia, she replied that acupuncture anaesthesia was much better as she did not feel nausea after the operation.

The second case was the removal of a cataract from the left eye of a 63 year-old female. Two fine acupuncture needles were inserted into the skin of the left temple. Here too, electrical stimulation was used before the operation was started.

The third case was the removal of a thyroid tumour from a 26 year-old male. One



All these patients were fully conscious throughout the operation and none received any sedative, tranquilliser or premedication. There was no reading of Mao's thoughts before, during or after the operation. A charming side-light was when two children gleefully sang for us "I love Tien-an men Square in Peking" immediately after they had their teeth extracted under acupuncture anaesthesia.

Most of the patients required very little in the way of postoperative analgesia or sedation. The acupuncture needles were always removed at the end of the operations although they were sometimes left in for 24 hours or more if severe postoperative pain was anticipated.

The youngest patient in the Third Teaching Hospital to undergo acupuncture anaesthesia was a baby of ten days: the oldest was 80 years old.

Dr Mueller explained that in many types of surgical operations acupuncture anaesthesia was preferred to general anaesthesia because the patients were fully conscious and could co-operate with the surgeons. This was important in operations on the brain where the patient would be instructed to move their limbs or certain fingers.

Acupuncture anesthesia was also safe for cases of respiratory distress. In operations of the lung, patients however would be admitted some time before the operation to be instructed on how to breathe with the use of the abdominal muscles. When this is correctly done danger from pneumothorax or mediastinal shift and flutter is minimised.

There was a remarkable absence of physiological disturbance during acupuncture anaesthesia. Blood pressure remained normal and shock was uncommon.

The Chinese doctors however do admit that they do not always think acupuncture anaesthesia suitable. For children and difficult abdominal cases, they preferred a general anaesthetic. Operations where severed limbs are rejoined to the body are also not done under acupuncture.

### Theories of acupuncture

There was little doubt in the minds of those of us who watched these operations that acupuncture really works. How and why this should be so was something which was not readily understood even amongst the Chinese physicians themselves.

At the No 6 Shanghai Hospital we discussed with the doctors there the four theories now in vogue.

The first was the *neurological theory* and the belief that the acupuncture impulses travelled over the nervous pathways. They tried to prove this by experiments on rats. The rat used in the experiment would have his cerebral cortex attached to an EEG machine. His tail will then be squeezed hard with a pair of forceps, the pain so caused will be reflected in the EEG tracings. On application of acupuncture anaesthesia at the correct spot, the EEG tracings would become normal again.

This would suggest that acupuncture impulses travel along nervous pathways but for a subsequent experiment which involved two rats with a cross-circulation link: it was found in this kind of experiment that acupuncture applied to the second rat was quite effective in relieving painful stimuli on the first rat. This brought about the second or *humoral theory*.

The third theory or the *competitive block theory* is much like the *gate control theory* of Melzack and Wall. This theory believes that acupuncture stimuli close a hypothetical gate in the spinal cord which blocks pain impulses travelling up the spinal cord from reaching the pain centre in the brain.

The fourth theory subscribed to by traditionalists in Chinese medicine is the *meridian theory*. This is based on the Taoist concept of the flow of life force or Ch'i within the human body. Health of the body depends on the balance of the Yang

(male element) and Yin (female element) in this life force. The Ch'i is presumed to flow over a network of Ching-lo or meridians and needling the correct acupuncture points on these meridians restores any imbalance of the Yang and Yin forces in ill-health. There are 12 meridians running on both sides of the body and over 800 acupuncture points have now been marked.

The modern Chinese doctors of course do not subscribe to the theories of Yang and Yin but nonetheless they have found the charts of the acupuncture points of the traditional physicians useful and accurate. Despite work to explain the meridians on an anatomical basis, nothing convincing has been discovered so far.

The fascination of acupuncture anaesthesia is not that it enables operations to be performed on fully conscious patients, any spinal or local anaesthetic can do the same. The challenge lies in that acupuncture shows the presence of a network within the human system the nature and anatomy of which we are at present unable to decipher. It also shatters our present concept of transmission of nerve impulses from the periphery. How do we for example explain the relief of toothache by needling the 'hoku' point in the hand? How does needling a point below the knee-joint help a headache? Why should the insertion of acupuncture needles at the 'kuangming' points on the leg, cure eye disease?

We have no answers to these questions at the moment. Research has shown that acupuncture increases phagocytosis and this could account for some of the cures.

Acupuncture I believe is an exciting gift from the old world to the new. What is needed now is to dust it from its web of mystery and metaphysical beliefs. Acupuncture anaesthesia may not find many takers in countries where most patients prefer not to see or know what is going on in the surgical theatre. This should not however prevent us from learning more about the human body and discovering how a simple needle can start changes in our system of which until now most of us have not been aware.

"Let the old bring forth the new", says Chairman Mao. It is only when we seek to understand today the medical problems of yesterday, that we prepare ourselves for the challenge of tomorrow.

#### FURTHER READING

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#### HYPOTHYROIDISM

Many of the symptoms the patient describes are so non-specific that 'old age' may be regarded as the underlying cause . . . Hypothyroidism is often unrecognised, produces long-term suffering and may cripple the patient . . . In one series of 58 elderly patients with hypothyroidism *the average duration of symptoms before diagnosis and treatment was five years*. . . Hypothyroidism may present with cerebellar signs and symptoms. The more common type of ataxia is a generalised unsteadiness of the gait. In one series of 120 cases 77 per cent complained of unsteadiness, and in 30 per cent the symptom was sufficiently severe to have caused serious falls.

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