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Association of Anaesthesiologists

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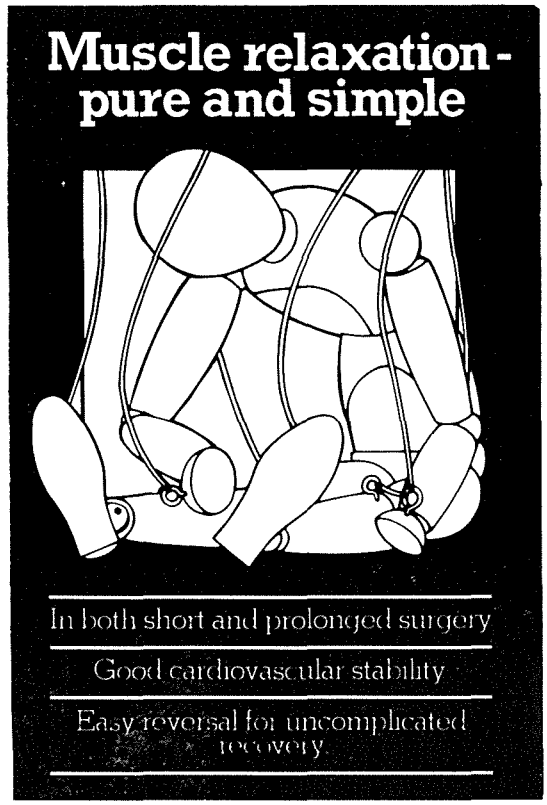

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Editor's Preface

The Assocation of Anaesthetists of Malta is now four years old and is again organising its annual conference and publishing its journal the Acta Anaesthesiologica Melitensia. The Czech Association of Anaesthetists is participating in this conference. This joint effort is an attempt to break down the barriers of insularity that are common to a small island and its medical community. This paralysing inferiority complex has got to be defeated. Anaesthesia as practiced at the St. Luke's Hospital Complex is of a high standard comparable with that obtainable anywhere in the world – in apparata, in drugs and in qualified anaesthetic personnel.

The Association of Anaesthetists is also active in the Paediatric section of the European branch of the World Federation of Societies of Anaesthesiologists and is appointed to sit on the panel of the First International Congress of Paediatric Anaesthesia being held in Holland in 1986.

The Association is already preparing for the fourth annual conference which will be held on the 15th August 1986, the height of summer, in an effort to attract more foreign participants who will combine a scientific one day session with their annual holiday.

The association is conscious of the role a nurse anaesthetist plays in the Anaesthetic department and is always requesting more state registered nurses to train in the speciality. One nurse anaesthetist Miss Grace Schembri N.O. was sent for further training in Messina Sicily, during this year.

The Association feels the need to attract more young doctors to choose the speciality as a career and is for the first time offering a monetary prize to the student who obtains the best marks in anaesthesia during the fourth year of medical studies.

The Association welcomes four young doctors who have chosen Anaesthesia and ITU as a speciality. These are: Dr. Marie Therese Licari, Dr. A. Padovani, Dr. M. Sammut and Dr. A. Sultana.

The University of Malta conscious of the new role of post graduate training in Anaesthesia run jointly with the Catholic University of Louvain, Belgium has raised the speciality to the level of a Faculty with three lecturers and an extended programme for undergraduate and post graduate studies. This trend is common in many modern medical schools where post graduate degrees in Anaesthesia are granted.

A further development projected for next year is the setting up of a Pain Clinic. This will broaden the scope of the Acupuncture Clinic ably run by the Chinese doctors. The pain clinic will be mostly for the benefit of patients suffering from chronic pain whether due to a benign or malignant condition. This development will fulfil the desire of anaesthetists to be involved in Primary Health Care – a referral clinic on a par with other specialities.

December 1985
St Luke's Hospital
Malta.

N. Azzopardi
M. Falzon

Safety of Atracurium in Diabetic Patients needing Emergency Surgery

N. AZZOPARDI

Summary

The new relaxant drug atracurium (Tracrium) was tested in 60 severely diabetic Maltese patients needing emergency surgery. The age of this group was mostly over sixty and the type of diabetes was the N.I.D. type. Surgery was absolutely indicated as an emergency to relieve an abdominal obstruction or to remove a gangrenous limb that was causing toxaemia and threatening life. From this study the author concludes that atracurium is useful as an intubation and maintenance agent in severely diabetic patients effecting a certain, safe and predictable neuro muscular block with minimal cardio vascular disturbance and lack of cumulation enabling reversal to occur spontaneously.

Introduction

The ideal muscle relaxant agent is yet to come; but using the non depolarising drug atracurium one can achieve muscle relaxation without causing cardio vascular side effects. One must remember that atracurium is short acting, does not totally depend on liver and kidney function for its breakdown and its degradation products are free from non depolorising effects. It causes minimal side effects such as histamine release, bronchospasm and fall in blood pressure with accompanying tachycardia.[1]

The 60 patients tested had given their free consent and this project was undertaken after the Hospital Management Committee had approved the introduction of the drug atracurium and its use on Maltese patients. Thirty patients suffered from acute to subacute intestinal obstruction and the rest needed lower limb amputation.[2]

A protocol was drawn up with the approval of Welcome (U.K.) who also supplied samples of the drug for the test.

The drug was kept in an ordinary fridge and every morning only the phials that were expected to be used on that day were taken out. Any phials that remained at the end of the operating day outside the fridge were discarded. The theatre room temperature at the time of testing was kept at 20° – 22°C.

Diabetes mellitus is a very common disease in Malta and the N.I.D. type of illness is as common as 7% in the over sixties. The W.H.O. is running a study on the incidence of the disease in these islands as it is thought that the high incidence is due to inter marriage and the predominantly high carbohydrate diet.[3]

The over sixties cohort from whose rank the 60 cases studies come, lived through the rather difficult war years 1938 – 1945 when food was severely limited and carbohydrates was the only food available for the population. The commonest complication of this group of diabetic patients is vascular and this is manifested by insufficient circulation to the lower limbs. Gangrene of patient's toes often follow minor trauma and this spreads up the limb in time. Acute abdomen is a close second usually due to intestinal obstruction as these rather fat patients commonly suffer from abdominal hernia (mostly umbilical) that can cause intestinal obstruction. These patients are usually cautioned to keep to a strict dietary regimen and must take antidiabetic drugs. However once in hospital they will have plain insulin I.M. periodically and their blood tested 6 hourly to monitor the control of the glycaemia. It is to be kept in mind that what is manifested in the legs as ischaemia will also be present in the renal and hepatic arteries and arterioles and so the function of these organs is also compromised. This fact calls for use of drugs that are not 100% dependent on hepatic breakdown and renal elimination so the advent of atracurium with its Hoffman elimination method of breakdown is most welcome.[4]

These diabetic patients needing emergency surgery do not come to the theatre is an ideal acid base balance and the duty anaesthetist may have to

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anaesthetise a patient while still endeavouring to correct the acid base and electrolyte inbalance.

Patient Preparation

While being prepared for surgery the patient's blood is taken for cross matching, urea and electrolytes, glucose and haemoglobin studies. Arterial blood for acid base studies is also taken and immediate corrective measures started once the results are known. In 5 cases the results were so poor that surgery was postponed by a few hours until the corrective measures undertaken produced better results.

Adequate fluids intravenously were given and a seperate drip with 5% Dextrose and 10 units of Insulin plain perpared. A C.V.P. line was prepared to keep a vigilant watch on the cardiac function.

On arrival in the anaesthetic room the duty anaesthetist set up the monitoring equipment and gave the patient premedication intravenously. This usually consisted of Rohypnol 0.3 mg per 1 kg and atropine 0.01 mg per 1 kg. The blood pressure was checked and in the intestinal obstruction cases a nasogastric tube passed and the stomach emptied. Lumbar epidural/spinal anaesthesia is much favoured for lower limb surgery but for this trial only and after obtaining their informal consent all 60 cases had a uniform technique of neuroleptic anaesthesia with muscle relaxation using a standard gas/oxygen 60:40 and a Manley Pulmovent machine for ventilation via an E.T. tube with a TV of 600 – 800ml and a frequency of 16 ventilations per minute.

The operation

Once put on the tilted operating table and after some minutes of pre oxygenation, the patients were given thiopentone 1mg for 1kg (a sleeping dose only) and atracurium 0.5mg per 1kg immediately after in the IVI. A lignocaine 4% throat spray was administered one puff for the opharynx and one down the voice cords and trachea. The time taken to achieve relaxation prior to intubation varied from 90 seconds to 120 seconds the more experienced the anaesthetist on duty the less time needed for intubation. No case vommited during this procedure.

The additional drug used for anlgesia was only fentanyl 0.05mg doses being given as the need arose – increase in pulse rate or rise in blood pressure. Atracurium was repeated in 30 cases by time – every 20 minutes by the clock a dose of 0.25mg per 1 kg being half the initial dose – and in the other cases (30) as the need arose, the dose being the same as the above. The need for the second dose was determined by the patient's slight head or hand movements and resistance to IPPV. It was noted that if the topping up dose was not given immediately the patient's muscle power fully returned causing vigorous movements. In the 5 cases where this happened there was no recall (the premedicant drug Rohypnol has known amnesic effects).

During the operation blood was taken for acid base balance and the results were in all cases better than the ones taken before operation.

A macular rash was noticed in ten cases and this developed on the chest wall and face. There was no papule formation and the rash disappeared in a few minutes. No other side effects were noticed.

The reversal of the drug was left to occur by time alone. No atropipe or prostigmine were given to avoid any cardio vascular problems. The delay in reversal exceeded 20 minutes after the last dose in 30% of the cases studied and this was corrected by continuing intermittent positive pressure ventilation. In all cases the time for full reversal did not exceed 40 minutes after the last dose.

Conclusion

Atracurium was used in 60 diabetic patients coming for surgery. It was used for intubation only in 30 cases i.e. case of gangrene of the lower limb needing amputation and used both for intubation and maintenance in 30 other cases of intestinal obstruction. The author is not aware of a similar study on diabetic patient. In the author's opinion the drug is adequate both for intubation and maintenance and its easy reversal without the use of atropine and prostigmine make it particularly useful in patient with poor cardiac function. The histamine release encountered in some patients only did not greatly complicate matters. The blood sugar remained stable throughout the procedure. All these findings point out that atracurium can be used with safety in severe diabetic patients needing emergency surgery.

The author thanks Welcome U.K. for providing free samples of Tracurium and a working protoctol.

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Infection of Central Venous Catheters

P. MAYER

Summary

Insertion and care of central venous catheters is a surgical procedure.

Since the lowest percentage of positive findings were in those catheters put in the basilic vein, one must conclude that the further away the insertion is from the central vein, the better is the result as any infection will cause phlebitis rather than septicaemia.

Perfect fixation of central venous catheter is necessary to prevent its migration and trauma causing phlebitis.

If the patient suffers a rise of body temperature without any obvious reason, blood cultures must be carried out and a new catheter inserted in a different site.

There must be very strict indications for cannulation of large central veins.

Introduction:

Since the introduction of plastic catheters in clinical practice in 1945 complications connected with this procedure have become the object of many studies. The most common complication is infection.

In 1947 6 cases of sepsis were reported by H. Neuhof and G. Seley, which were blamed to canulation of vessels.[1] By the end of the 50's another two studies were prepared demonstrating half the patients with staphlococcal septicaemia had local staphylococcal infections in the place around intravenous catheters.[2] The first prospective study of the problem was published in 1963.[3]

Possibility of the origin of microbial contamination: The skin is an important source origin of microbes grown from catheters: Most frequently skin commensals: Staph. epidermidis, Klebsiella, Enterobacter, Serratia and Enterococi. The same types of these microbes are usually the cause of catheter sepsis.

Microbes can contaiminate the tip of catheters at the same time of insertion or later on by migration around the catheter. Another source of contamination is the nursing and medical staff with resistant gram-negative microbes as commensals on the hand. Cases were reported about an outbreak of Klebsiella sepsis from contaminated handcream used in I.T.U.[4] Positive bacterial findings from central venous catheters (CVC) used for measuring of CVP were found in 22% of cases: There was none in the catheters used only for infusion therapy, Hoshal.[5] The flushing of clots from catheters poses the danger of septicaemia, because of embolism of contaminated thrombus. Microbes from distant pockets of infection (tracheostomy, urinary system, wounds) can be found on the tip of catheter without demonstrable bacteraemia. Catheters inserted in patients with previous infection are more frequently contaminated than those in the other patients. The sepsis from contaminated infusion were reported in 1953 by Michales and Ruebner.[6]

In one Australian study it was found that nearly half a batch of infusion bottles contained fungi, these fungi were admitted by small pieces of rubber during the insertion of needles into the bottle's rubber sealer.[7] The solutions can also be contaminated from the tip of the I.V. cannula itself as it was shown, that microbes can travel more than 1,5 m against the flow of solution. Every handling of infusion can cause contamination i.e. later addition of drugs into the sets and bottles, changing to transfusion of blood, using manometres or taking of blood samples via CVC.

Methods

From may 1983 to September 1984 there were inserted 194 CVC in 158 patients in the I.T.U. of Hospital Bulovka, Prague. 163 of these (84%) were investigated bacteriologically. Blood-cultures and tips of catheter filled by blood were put in test-tubes with sterile N/Saline for investigation. 75 tips (46%) were sterile, 88 tips (54%) were contaminated and in 24 of these there was more than one species contaminating the catheter.

Dr. Paul Mayer: Senior Assistant, St Luke's Hospital, Malta.

Table 1

Bacterial finding on tips of Central Venous Catheters	
Staph, aureus	30
Pseud, aeruginosa	29
Enterobacter	15
Nicrococus albus	11
Serratia Mar.	9
E.coli	7
Staph, faecalis	7
Str. viridans	2
Proteus species	4
Proteus vulgaris	1
Proteus mirabilis	1
Str. beta-hamolyticus	1

31 cathetres were not investigated. Of these one patient was transfered to another ward with catheter and two cases pulled out the catheter by themselves. In some other cases the tips were contaminated during removal and were not fit for bacteriological investigation.

Table 2

Corelation between % of positive finding and duration of insertion

	to 72 hrs	3 – 7 days	8 – 10 days	above 10 days
Number of catheters	31	51	27	49
% of positive findings	51.6	50.6	51.8	55.1

Catheters were inserted all together for 1605 days, the average stay being 8.3 days. Our findings were different from those reported previously in the literature, which had shown that positive findings were dependent on the duration of cathetrisation.[10]

Entrance to vein	Number of catheters	Number investig. catheters	Number positive findings	% of positive findings
v.jug.int.	50	42	29	69
v.subclavia	84	64	34	53
v.basilica	61	52	19	36

Table 3 shows separation of catheters according to entry sites in peripheral or central vein, and the number of positive findings in each group. This is similar to the recent study of Gertner, which appraised 1500 catheters and which showed that catheters inserted via v. basilica had the lowest risk of infection.

Discussion

Reports in the literature a number of positive contaminant findings from catheters vary from 3% – 57%. Because of the high proportion of positive bacteriological findings many authors have stressed the importance of cathetrisation done by experienced staff and that these catheters should not be inserted for simple infusions but that insertion should be restricted only for some special indication.

In our I.T.U. we clean and prepare the site of insertion using some washing solutions used in the theatre, doctors wear sterile gloves and mask and the inserted catheter is fixed with a stitch to stop it moving in the skin channel. It is shown, that even in unconscious patients catheters move 1 – 2cm in subclavian and 5cm in the cubital region. The dressing is changed every third day or earlier if heavily soiled. When the patient is not routinely heparinised we add 500 – 1.100 units of heparin to every bottle to prevent the formation of thrombus. When it is necessary to measure the CVP after the catheter has been inserted for more than 48 hours we measure it by electronic methods in a closed system. The treatment of catheter sepsis is easy. In most cases removing of catheter is enough and the patient does not need any antibiotics.

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Lumbosacral Plexus Block for Lower Extremity Surgery

B. MALESEV, S. JOVANOVIC, M. PJEVIC

The key words: "Teflon needles, Neurostimulation, Muscular contraction, Safety Efficiency"

Summary

The lumbosacral plexus block is a relatively new method of local anaesthesia, which enables blockage of one leg. It is particularly favourable in emergency and in unprepared patients as well as in high risk cases. It is performed by blocking the lumbar plexus in the psoas compartment and then by the same needle the sciatic nerve. Special "Top-Pole" teflon needles and neurotracer which helps to localise objectively both plexus and nerve are used. If all criteria are followed while performing block, the success rate will be good. The authors present their results in 50 cases.

Introduction

The intention of the anaesthetist administering regional anaesthesia is to achieve block of the nervous plexus with as little needling as possible.[1] The lumbosacral plexus block (L.S.P.B.) is a comparatively new method introduced by American authors Winnie and Co.[2] The same was accomplished by authors from Israel: Chayen and Nathan.[3] The technique we have applied was described by Yugoslav authors working in Holland (Stefanovic, Mostarlic) at the IX International Meeting of Yugoslav Anaesthetists in Dubrovnik 1979.[4]

It is well known that local block for the upper limb can easily be done by using one needle only, owing to the fact that all the nerves for the arm run through undivided continuous interfascial space. Could the principle of "one needle" be applied for the lower extremity? Almost yes, knowing that the four big nerves for the leg, after forming the lumbar plexus run downwards to the leg quite apart from each other, and at different strata. The anaesthetist is expected to identify the plexus in that narrow space named "Psoas Compartment" (P.C.), and to inject the local anaesthetic into it.

Method

The patient is positioned with the side to be blocked upwards. Both liac crests are identified and connected by a line using waterproof marker. From the posterior superior iliac spine of the limb to be blocked a line is drawn parallel to the vertebral column. Where these lines cross the point is over the space between L4 – L5, i.e. over the P.C. which contains the lumbar plexus.

We have used neurotracer and special "Top-Pole" teflon needles, for plexus identification, so making patients cooperation in confirming paraesthesia unnecessary. When the contraction of m. quadriceps femoris are obtained 30 ccm of local anaesthetic sol. is injected, a test aspiration having been done beforehand. To complete the procedure the block of the sciatic nerve is also necessary. In the same patients position, the upper edge of the great trochanter is marked out and connected to the posterior superior iliac spine. From a midpoint of this line a perpendicular is drawn downwards 3 – 5 cm in length, according to the patient's size. The needle is introduced vertically to the skin hitting the sciatic nerve as manifested by muscle contraction of posterior group of muscles above and below popliteal fossa 20 cc of local anaesthetic is injected. After block procedure is completed, 30 minutes are allowed to achieve full block anaesthesia. We have used local anaesthetic mixture composed of 2% Lignocaine and 0.5% Tetracaine 1:1 with adrenaline 1:400.000.

Results

This technique was used in 50 cases. In 34 patients gangrene of the leg was present. Most of them were diabetics, and in very poor general condition. All were for lower limb amputation. 11 patients were for orthopedic operative treatment, and 5 were for vascular surgery. Following ASA they were classified as follows (see table 1). The

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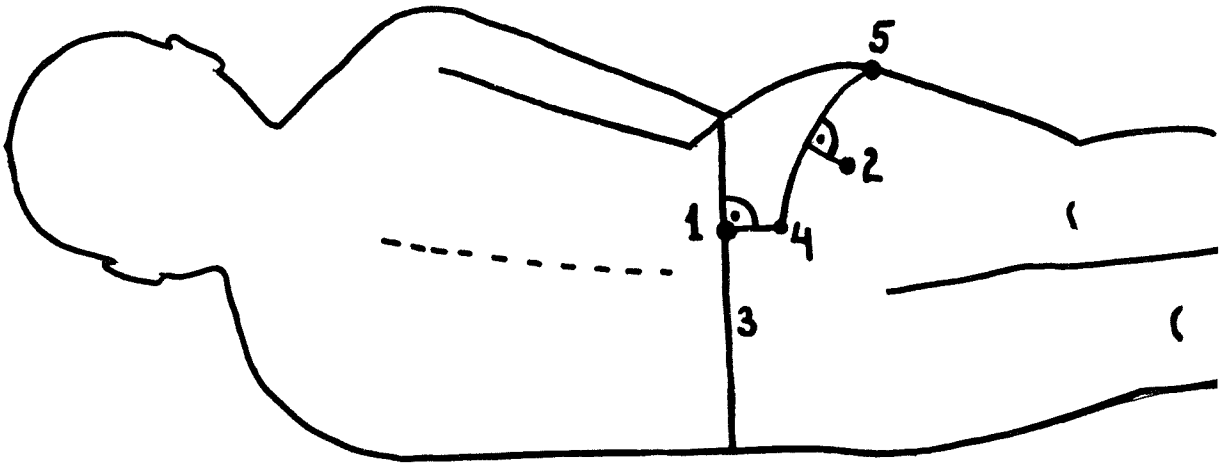

1 – Point of injection for P.C., 2 – Point to block sciatic nerve, 3 – Bicristal line, 4 – Post. superior iliac spine, 5 – Sup. border of great trochanter.

anaesthetic results were classified as: A – excellent, B – satisfactory, when additional analgesics and sedation was given, and C – unsatisfactory, when G.A. had to be performed. The anaesthetic condition in 42 patients were excellent (A) without any need for additional support of analgesia. In 5 cases we have given them either small doses of fentanyl-valium combination, or small doses of ketamine. Only 2 patients required intubation and endotracheal anaesthesia (see table 2). Most of the results (B) and (C) were obtained at the beginning of our practice. There was only one fatality. He was a 60 years poorly controlled diabetic man suffering from right foot gangrene. He was septic, and with severe myocardial failure.

Table 1
ASA classification

ASA Class	patient number
Grade 1	5
Grade 2	7
Grade 3	5
Grade 4	30
Grade 5	3

Table 2
Rate of success

A	42
B	5
C	3

Necrectomy performed 7 days earlier resulted in temporary improvement only. Later on diabetes became completely uncontrolled which combined with severe anaemia, orthopnea and tachyarrhythmia precipitated myocardial failure. He had above knee amputation under L.S.P.B. with success but died 2 hours after the operation was finished.

Discussion

With the exception of the case described above, there was no intraoperative or postoperative complications. Even in the shocked orthopedic emergency cases, there were no cases of deterioration. The one case of death is more likely to be attributed to the poor general condition of the patient who was in terminal stage of disease as no indications were found to suggest the relation between the death of the patient and the anaesthetic treatment.

It seems that L.S.P.B. is a highly recommended method for high risk patients including shocked and unprepared patients with full stomach. As with any other regional anaesthetic technique, contra-indications still exist such as AV block, local anaesthetic allergic reactions and local infection. The equipment and knowhow of cardiopulmonary resuscitation is to be available. The method is simple to perform, requires one assistent only, and when applied properly is highly efficient and successful satisfying all the surgical requirements.

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Anaesthesia in Thoracic Surgery using Selective Distributive Ventilation

J. BONAVENTURA, D. TABROSKA, V. DIVISOVA

Summary

During thoracotomy surgical access is often facilitated by decreasing the volume of one lung. This can be achieved by decreasing the volume of both lungs together or by selectively ventilating only one lung.[1] These unphysiological conditions are improved by the use of selective distributive ventilation of the lungs, a technique allowing an accurate control of the distribution of fresh gases to each lung separately.

Introduction

We have constructed a simple system for selective distributive ventilation that divides the gas stream from the anaesthetic apparatus into two by making use of one way valves on the inspiratory and expiratory sides enabling controlled ventilation of both lungs independently. The limb feeding the lung to be operated employs a safety overpressure valve, that has its maximal pressure set at a low enough level to enable partial collapse of the lung on that side thus facilitating the approach to the hilum. The inspiratory pressure on both limbs is monitored by manometers.

Discussion & Findings

We compared three types of ventilation during anaesthesia for thoracic surgery using dogs as experimental models.

1) Separte ventilation of one lung.
2.) Selective Distributive Ventilation.
3) Hypoventilation technique.

The arterio-venous shunt and carbon dioxide levels were studied in these animals subjected to the three techniques of ventilation.

In the Group I animal the mean value of A – V shunt just after induction of anaesthesia was 18% and 5 minutes afterwards this value had risen to 35%. A drop to 30% was observed at 15 minutes from induction presumably as a result of intra pulmonary compensation and a gradual decrease in shunt continued during the next 45 minutes. The pCO2 increased by about 15mmHg (2KPa).[2]

In Group 2, selective distributive ventilation the inspiratory pressure was kept at 5mmHg (0,7KPa) resulting in partial collapse of the operated lung. The mean A – V shunt taken after 5 minutes was 30% and this fell to 24% at the 15min reading dropping further up to the reading taken at one hour from induction. No significant increase in partial pressure of carbondioxide was observed.

In the Group 3 animals undergoing hypoventilation of both lungs, surgical approach to the hilum was difficult and a decrease in inflation pressure down to 5mmHgs in both lungs caused a very quick rise in A – V shunt and a rise in partial pressure of CO2.

Conclusion

The A – V shunt estimation in the 3 groups indicates Selective Distributive Ventilation as being the technique of choice especially in patients who have diminished cardiopulmonary reserve and when an exacerbation of A – V shunting may precipitate cardiopulmonary failure.[3]

Carbon dioxide tension in the blood in groups 1 + 2 remains at normal or near normal levels but in the Group 3 patients it rises to uncacceptable levels. The ease of surgical approach and manipulation in this latter technique is far from ideal necessitating excessive handling of tissues with a consequently increased incidence of DIC and post-op morbidity.

Selective Distributive Ventilation has now been adopted as the technique of choice for thoracic surgery in our patients.

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A Study on the Effect Brain Death has on organs

D. TABROSKA, J. BONAVENTURA, V. DIVISOVA.

Summary

The effect of brain damage and brain death on organ pathology has been studied both in the patient donor and also in the experimental model using the dog. The morphological and functional changes occurring where studied after the loss of central vascular and nervous regulation. The serum creatinine level is used as a test of function of the kidneys of the potential donor.

Introduction

Tracing the effect brain death has on organs in the clinical material is very difficult. Many hours pass between the beginning of brain damage and between brain death. During this time, the organs are influenced by:

a) Isolated brain damage and brain death which in case of a trauma leads to a conspicuous gradation of sympatho-adrenal activity. The kidneys are insufficiently supplied with blood, the liver looses its reserves of energy, in direct correlation with the length of time after injury.

b) Traumatic damage to brain cells, often connected with polytrauma, leads to release of thromboplastine and an increased incidence of coagulopathy with further changes in microcirculation.

c) Brain death causes failure of control over water resorption in kidney tubules. The loss of liquids, when not recompensed sufficiently leads to hypovolemia and to a further loss of volume of blood available to the organs. This central polyuria leads to hypokalemia which may cause further changes in morphology and function of the kidneys. The destructive changes after polytrauma, connected with loss of blood are much greater than those of isolated brain damage.

The loss of central brain regulation on peripheral organs after brain death is caused by the block of ADH secretions so that the autoregulation of peripheral organs is then dependent on changes in blood flow and on changes of acid base concentration. In such case a minimum stimulus which is usually no problem for a normal organism with an integrated CNS may lead to damages in organs.

The Canine Model

We tried to clear up the matter in our experimental model by causing brain trauma in dogs. We biopsied the liver and the kidneys in the 3rd, 6th and 12th hour after the experimental brain death. A very important premise of the experiment was the fact that no disorders in haemodynamics occurred, as the loss of liquids after the beginning of polyuria was measured and replaced carefully. After three hours we found in the liver of dogs oedematous changes in hepatocytes and accumulation of leukocytes in the centrilobular zone.

In the kidney the lumen of proximal tubules was dilated due to flattening of proximal tubular epithelium. Monocellular necroses of tubular epithelial cells are rare. These histological findings demonstrate the fact that isolated brain death can cause a state similar to shock in the organs. These changes are usually reversible. On the other hand, when hypovolemia and other changes are caused by central polyuria after polytrauma, the damage of organs may be irreversible.

The Human Model

A 28 year old patient was treated after a short time of arrest of blood circulation and was successfully resuscitated. Samples were obtained by means of kidney biopsy and showed shock kidney with hydropic dystrophy of proximal tubular epithelial cells and monocellular necrosis (acidophilic necrosis) (Figure 1).

After 6 hours a second biopsy showed the kidney with advanced changes in tubular epithelial cells, and focal tubular necrosis. Necrotic acidophilic cells are present in tubular lumina necrosis of cells are more numerous. This is a picture of an advanced shock of the kidney (Figure 2).

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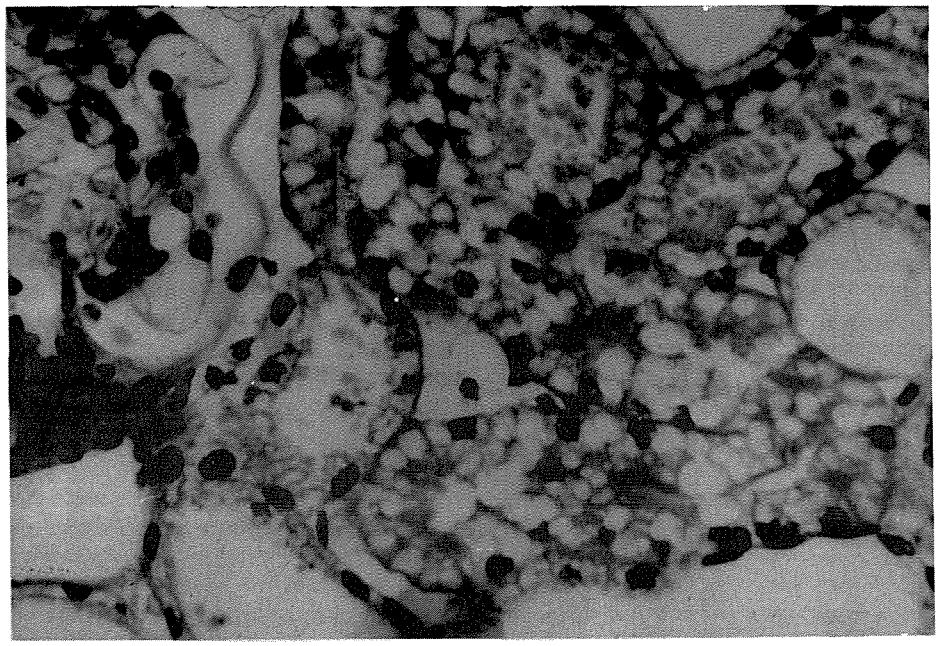

FIG. 1 Biopsy of kidney taken soon after circulatory arrest. Hydrophic dystrophy of proximal tubular epithelial cells. Few necrotic cells noted.

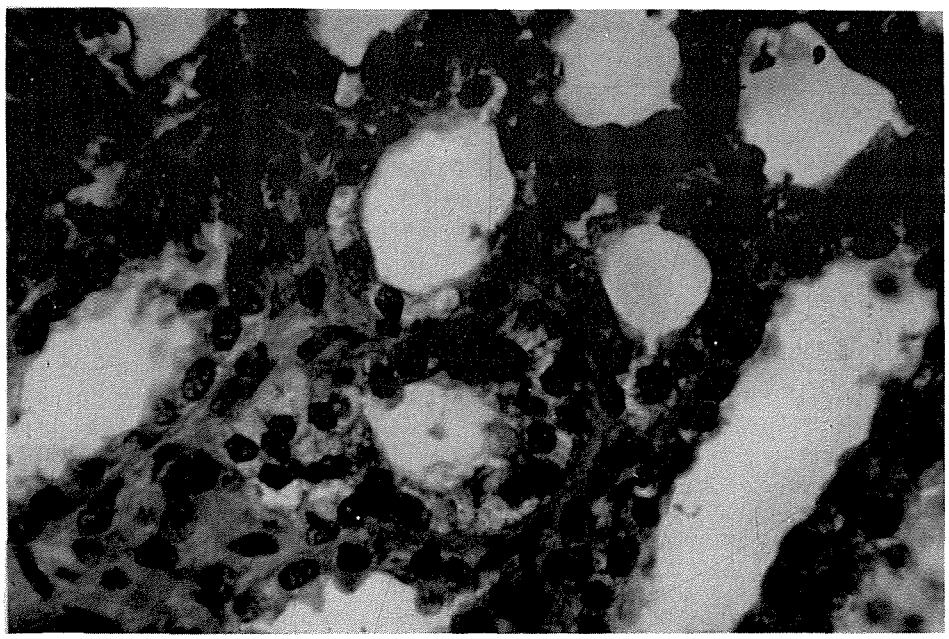

FIG. 2 Biopsy of kidney taken 6 hours after circulatory arrest. Advanced changes in tubular epithelial cells. Focal tubular necrosis. Necrotic acidophilic cells are numerous.

Canine Creatinine Studies

Changes in filtration and resorption of creatinine in the bodies of our experimental animals was studied. In the course of 12 hours the filtration went down by 50 – 100%, the resorption decreased by 90%.[1] The value of creatinine in the serum was found to be twice normal possibly due to release of creatinine from another source besides the body musculature. Can it be creatinine phosphate from the brain tissues? The level of creatinine in the venous cerebral drainage was studied and compared to the level in mixed venous blood. The curve of creatinine in venous cerebral blood shows two rises a) after brain damage, b) after arrest of cerebral circulation. This is a significant finding. To clear the problem we studied two canine models having a) a sustained cerebral circulation after brain death resulting in an increased level of creatinine in venous cerebral blood and b) an arrested cerebral circulation and brain death resulting in a stable creatinine level in venous cerebral blood.

The difference in creatinine level depends on the time between brain damage and arrest of cerebral circulation.[2] While the changes in filtrations are approximately the same the value of creatinine in cases with a delayed arrest of brain function is higher. It appears that serum creatinine level is not a good enough parameter for assaying kidney function.[3]

Conclusion

The canine model provides a basis for studying the differential effect brain death alone or combined with arrested cerebral circulation has on other organs. The application of these findings to the human model with brain death will clear problems associated with efficiency of the kidneys for transplantation.

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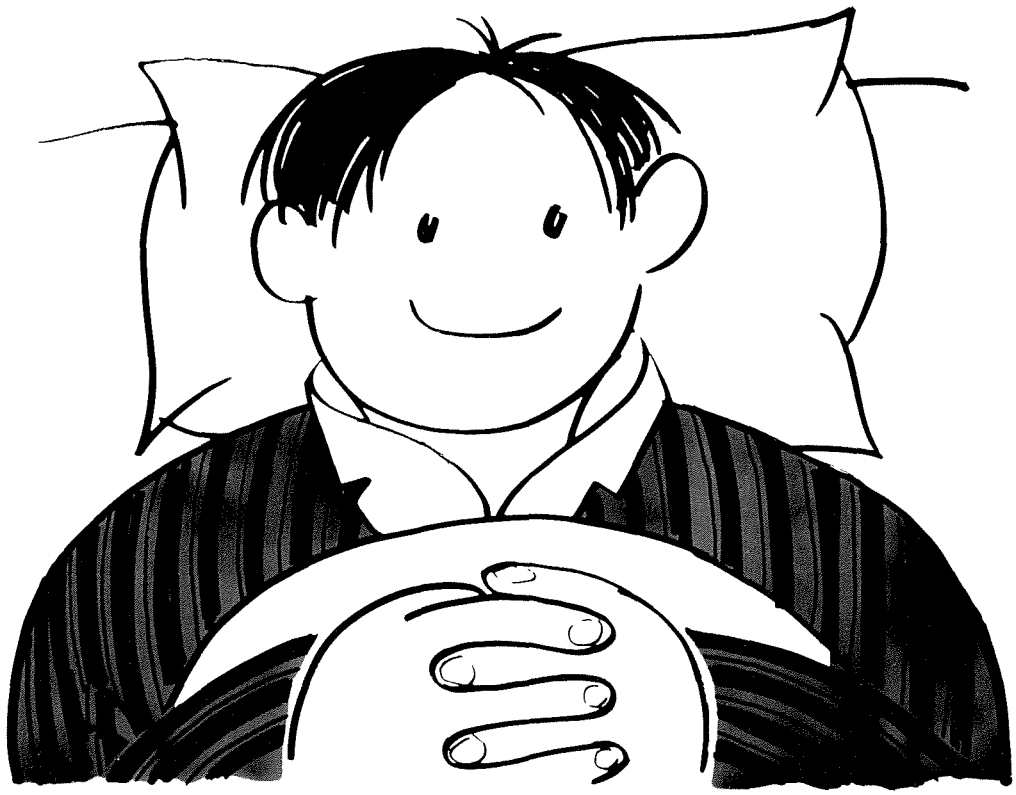
COMING ROUND TO NUBAIN* ANALGESIA



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The Attitudes of Maltese Medical Students to Anaesthesia

D. SPITERI, D. FARRUGIA, G. FARRUGIA

Summary

A survey of the attitudes of Maltese medical students to anaesthesia, their experiences during their anaesthetic training and their current tentative choice as regards post graduate work is compared to past surveys in Malta, in 3rd. World and in developed countries.

Introduction

Questionnaires were handed out to medical students enrolled at the Malta medical school during 1985. The pre-clinical students had no contact with anaesthesia while the final year students had undergone a two-week posting in anaesthesia as part of their curriculum.

Questionnaire 1: For pre-clinical medical undergraduates

1. Age
2. Sex
3. Have you heard about Anaesthesia before? Yes, no?
4. Do you know what an Anaesthetist does? Yes, no?
5. If the answer to Question No. 4 is Yes, briefly state below what you think an Anaesthetis does.
6. Have you ever had an anaesthetic administered to you? Yes, no?
7. Indicate in order of preference (a,b,c, etc.) what you would like to do after graduating as a doctor:
   a. Anaesthesia
   b. General Practice
   c. Medicine
   d. Obstetrics & Gynaecology
   e. Paediatrics
   f. Pathology
   g. Preventive and Social Medicine
   h. Surgery
   i. Health Administration
   j. Business Administration
   k. Any other (State):_____
   l. Don't know
8. Why did you decide on your first choice?

Questionnaire 2: For final year medical students (after 2 weeks posting in Anaesthesia)

1. Age
2. Sex
3. What is your impression about your posting in Anaesthesia? Just one specially in my curriculum
   (a) Dull and boring
   (b) Important & Interesting
   (c) No impression
4. What do you enjoy most during your Anaesthesia posting? Watching operations?
5. What improvements would you like to see regarding your posting in Anaesthesia?
6. Indicate in the order of preference (a,b,c, etc.) what you would like to do after graduating as a doctor;
   a. Anaesthesia
   b. General Practice
   c. Medicine
   d. Obstetrics & Gynaecology
   e. Paediatrics
   f. Pathology
   g. Preventive and Social Medicine
   h. Surgery
   i. Health Administration
   j. Business Administration
   k. Any others (State): _____
   l. I don't know
7. At what stage of your training did you decide on your first choice?
8. Why did you decide on your first choice?

Results

The pre-clinical medical students are 34 in number, aged 17 – 20 years (avr. 18.7) with an ever so slight preponderance of males (18:16). Almost half of them did not know what an anaesthetist actually does and two said that they had never heard of such a thing as anaesthesia. Of those who thought they knew, 6 said that anaesthesia involves sedating the patient before the operation. 5 went further and said that the anaesthetist monitors the patient

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throughout the anaesthetic. Two of these were aware that anaesthetists are involved in ITU work. 8 students had undergone general anaesthesia and of these 'unfortunates' only one was fully aware of the duties of the anaesthetist.

Anaesthesia was the first choice for just one student as a postgraduate career but for quite questionable reasons – 'it pays well and one works less'. It was an alternative choice for two other students. One student described himself as an 'electronics nut' and said he wanted to work as a 'medical technician' – he might find himself attracted to the increasing gadgetry to be found in an ITU and the anaesthetist's cockpit. Surgery and paediatrics were joint favourites for later careers. The other favourites were obs. & gynae. and general practice. Medicine was a definite non-starter among the traditional choices. Pathology was surprisingly popular among the 'lesser' specialities, followed by psychiatry and preventive medicine. At least 11 were unsure of their choices; most gave two alternatives and two gave four alternatives!

The final year medical students were 36 in number. Of these two had not yet been posted in anaesthesia. Their age ranged from 20 to 25 (avr. 20.9). Only 6 were females this time. Almost half (17) of the students thought of anaesthesia as just another speciality crowding their curriculum. A further 5 were unimpressed one way or another. Only one had the nerve to actually say it was dull and boring. 6 students thought anaesthesia important and interesting. Another two while conceding that anaesthesia was important pointed out that it was not *that* interesting. 7 students liked the anaesthetic posting for the chance it gave them to see the operation and watch the surgeon. Only two students were 'amazed' and 'fascinated' at the way the patients' consciousness was controlled to enable them to have painless, safe surgery. One third enjoyed the practical sessions and tutorials, especially the explanation of respiratory physiology. The highlight of the postings were intubations and spinal but one liked the dummy best and another liked 'the coffee breaks'. Although 3 actually said that they were disappointed at what they got, all of them wanted more practical sessions and more personal attention.

One student gave the impression that he likes anaesthesia a lot but left the question about choice of career blank. (The suspense is killing us!) 2 other students gave anaesthesia as an alternative choice, while one student was quite vehement that he would never choose anaesthesia for a career. Surgery was again the most popular tentative choice, followed this time by medicine and paediatrics. General practice and obs. & gynae. were further down the list. Two are interested in sports medicine and one in tropical medicine. More than one third were unsure of what to do next. Of those who made choices "special interest in the field" was the commonest reason. 4 students had made their choice before even entering the course. The others made up their minds in the 3rd and 4th years. (One said that his mother made the choice for him!)

Discussion

A study of I, III, and Final year students was done at this medical school and published in the 1969 edition of 'Chestpiece'. In a table listed one could see that among those who sought specialisation (65.5%) surgery started as an overwhelming choice among first years (41.4%) but this dwindled down to 14.8% among the final years. On the other hand medicine jumped up to a height of 22.2% from a paltry 6.5% among the third years. Among the Final years paediatrics was next popular with 7.4%, obs. & gynae., psychiatry and basic science(?) were among the also rans. Anaesthesia was not separately listed and must be weeded out from among the 3.8% 'others'. General Practice was a solid 23% over-all choice among the I, III and Final years.

A similar study was done in a Saudi Arabian medical school last year, among pre-clinical and final years. Among the 40 all male 19 year old pre-clinicals 2/3 had heard about anaesthesia; half of these knew what it was vaguely about. None chose anaesthesia for their career. (surgery 43%, medicine 20%, paediatrics 18%, general practice 12%, obs.&gynae. 0% and 'don't knows' 7%.)

The 26 also all male 24 year old final year students thought their anaesthesia posting important and interesting in all cases. Most (12) liked their ITU rotation best, only one liked emergency duty. The Saudi students would also have liked more practical involvement and a longer posting. One of these students decided on anaesthesia as a first choice for a career. Medicine won over 31% of the students, surgery and general practice joint second place with 19%. Main reasons for the choice given were special interest, prestige, national interest and need.

In Nigeria obs.&gynae ranked the highest among 55 all male final year students with none mentioning anaesthesia as their choice.

Medical students in two U.K. medical schools showed an 8.2% choice of anaesthesia for their

future work. On the other hand 349 practising U.K. anaesthetics participating in a questionnaire showed that just 13.7% of them had formed their plans as undergraduates. 27.5% picked their job as housemen while the majority decided after full registration (57.6%). It is probable that competition in the main specialities in the U.K. was the main reason for the sudden upsurge in 'vocations'!

In an Australian survey the commonest reason for not choosing anaesthesia was lack of 'direct reference to health care' or because it was thought of as a 'behind the scene affair'. The awareness that anaesthetists are involved in ITU's and Pain clinics should change the unattractiveness of the speciality.

In the U.S.A. 4% of medical practitioners were anaesthesiologists in 1982. In some countries a ratio of one anaesthetist to 20,000 population is to be found but in others there are few or no native anaesthetists. In regions where there is a national shortage of doctors, specialities involving direct patient care (and an independent source of income) are much more likely to be taken up. For those who are ambitious it is to be expected that a speciality which is often subservient to the surgical department will look like a dead end. The status image of anaesthesia is not helped by the existence in some countries of the technician anaesthetist and this will also deter some individuals from taking up anaesthetics.

The attitudes of medical students only reflect those of the general popultion. A lot of advertising is needed so that the public appreciates our speciality for what it is. Towards this end it is our belief that more time spend in an unhurried reassuring talk with patients in the pre-operative visit would go a long way to inform the public about our work.

Conclusion

It seems that in the underdeveloped countries a state of misinformation exists regarding what anaesthesia entails. This is shown in the very few medical students who go to medical school with the ambition to take up anaesthetics. Social and national factors keep the more well informed final year students away from a career in anaesthesia. In the developed countries it also seems that although more students are prepared to take up anaesthetics early on in their career the majority are led to make their choice much later and perhaps only for secondary reasons.

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Working Report of Acupuncture and Maxibustion Department in St. Luke's Hospital, Malta

C. GONSUNG, L. BAOMING

Introduction

The Acupuncture and Maxibustion Department was formally opened on the 9th April, 1984 and since then we have seen 6203 cases (person times or session). In all there were 717 new cases, 67 different kind of diseases were treated with acupuncture and maxibustion therapy, i.e. migraine, arthritis of shoulder joints, diarrhoea, herpes zoster etc. We have also provided acupuncture anti smoking treatment to patients. These treatments proved effective to people from all walks of life and even to non-Maltese. The foreigners who have received acupuncture and maxibustion treatment are from 17 different countries, such as Britain, Italy, Poland, Yugoslavia, India, Pakistan, Korea, and China etc. Most of the patients were satisfied with our work and showed their appreciation and encouragement on the effect of acupuncture treatment and on our working technique.

Methods

In the process of diagnosing and treating diseases according to the therapy of Traditional Chinese Medicine, we tried our best to establish the diagnosis in accordance with modern medicines through physical and chemical examinations. In difficult and complicated cases we have even consulted other specialists. We have applied different kinds of acupuncture treatments in clinical practice, such as body acupuncture, ear acupuncture, head acupuncture, embedding needles, plum-blossom needles, three edges needles, electric needles, moxa stick, moxa cone, warming needles, cupping, water needling and electric massage and so on. For all the cases, we set up possible indexes for observing the effect of treatment scientifically, and even follow up cases by tracing them periodically.

Results

According to the basic statistics of 428 cases, the cured cases came up to 21 (49%); marked effect cases 150 (35.5); fair effect cases 173 (40.42); little effect cases 51 (11.92%); no effect cases 33 (7.71%). Little effect indicates that there is only partial relief, or else patient feels better temporarily, or else the symptoms were relieved by themselves. So in this way we consider the concept of little effect as giving results far below the desired and therefore not effective. According to the above-mentioned analysis, the total effective rate is about 80.37%. Better effect may be achieved especially for those diseases hereunder: acute sprain and contusion, frozen shoulder, tennis elbow, migraine, carpac tunnel syndrome, peripheral facial nerve paralysis, hysteria, constipation, bed wetting, premenstrual tension, herpes zoster, cancer pain etc. (Table 1).

To stop smoking mainly relies on people's will power but according to the statistics for anti-smoking treatment in the past one year, we have found out that the effective rate is up to 60.37%. This proves not only by words but also by deeds that the acupuncture treatment may help smokers stop smoking or decrease in amount. (Table 2)

Discussion

It is the first time that an acupuncture and maxibustion department has been set up in the government hospital of Malta, as well as in Europe. The health department has put the Acupuncture and Maxibustion department on the same level as other departments in order to develop the therapy academically and to enrich modern medicine. The requirement to write individual case histories improves the effectiveness of modern acupuncture therapy enabling it to enjoy the high reputation of both Maltese and Chinese medical workers and other foreign doctors.

During the past one year we have also given some lectures introducing Chinese acupuncture and maxibustion therapy and the mechanism of acupuncture anaesthesia at the invitation of the Malta Medical School and the Anaesthesia

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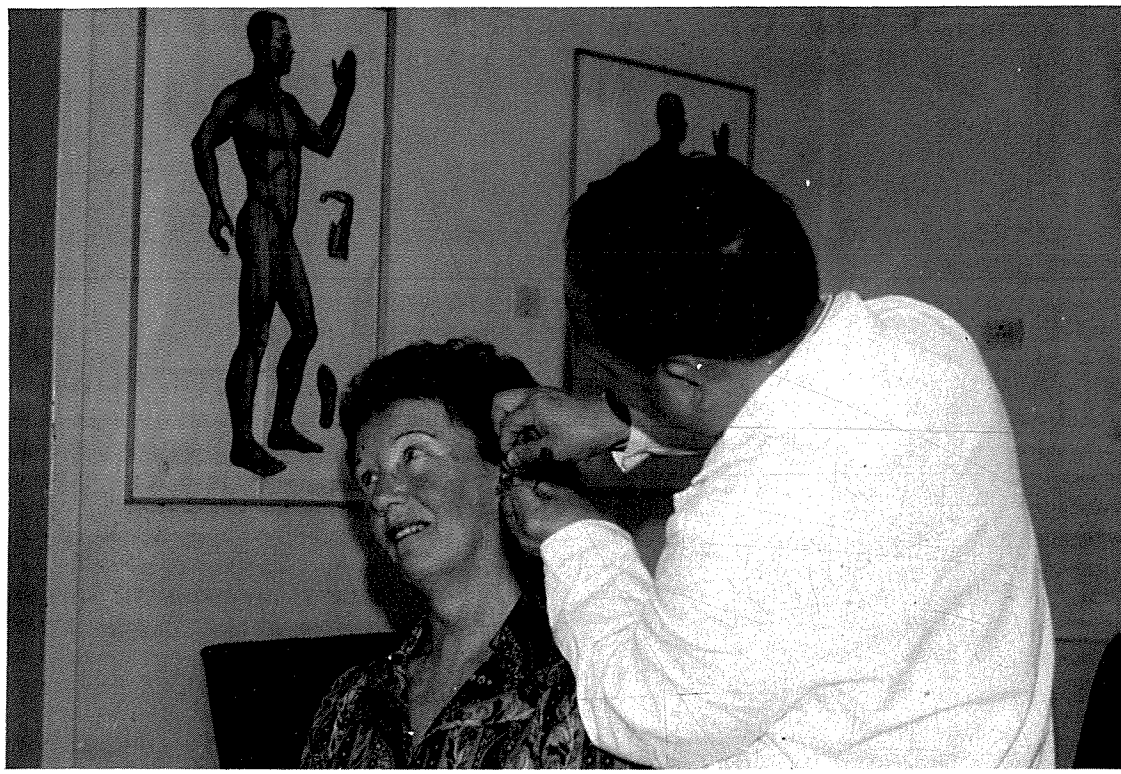
Mr. Li Baoming, Assistant.



Dr. C. Gongsun consultant acupuncturist practising ear acupuncture for joint pain.

Association. Doctors and medical staffs inside and outside the hospital have come to visit us and have discussions with us about acupuncture and maxibustion therapies. Medical students and student nurses often comes to do some pre-clinical practice in our department in turns; two doctors from Yugoslavia have been in our clinic for one-month pre-clinical practise under the arrangement made by the superintendent of hospital. We have also cooperated with some doctors and collected medical data and took valuable photos for reference purposes. Many medical doctors have experienced the effect of acupuncture and maxibustion themselves. Among 428 cases treated with acupuncture and maxibustion, there were 25 doctors, 24 nurses and 20 other medical workes. Some doctors asked us to cooperate with them to observe the effect of acupuncture and maxibustion together for certain diseases; some of them came to visit our department whenever they had time; still some others even asked us to introduce them to study acupuncture and maxibustion systematically in China.

Patients asking for acupuncture and maxibustion treatment are increasing and an appointment system has been introduced. Up to now there have been 311 patients registered on the waiting list for treatment besides 103 patients asking for anti-smoking treatment. The longest patient on the waiting list is about 8 months already. We feel very sorry with these patients but we have no way out.

Trial treatment for diseases which could not be cured satisfactorily with modern medicine have been administered at the request of some doctors and patients. Diseases like cervical spondylosis, osteorthritis of knee joint, after effect of central nervous system disorders etc, cannot be cured with acupuncture and maxibustion but only some relieve is achieved. So we have spent a lot of our time on these unsatisfactory cases even though only a minimum amount of relief has been achieved after long courses of treatment. However as these diseases are very common here, we cannot see them all and give very long treatment. But as doctors we cannot refuse the patient's request for longer treatment

since some little improvement with acupunctue and maxibustion occurred and besides more and more patients have begun to like acupuncture and maxibustion, (there is no side effect, a common case with chemical tablets). On the contrary some diseases with better prognosis and effect i.e. some acute cases have to be kept on the waiting list. We are afraid that there is too much work which may effect the quality of treatment. Thus we even have no time to cooperate with other departments so as to do some research or observations on certain diseases.

There have been 276 anti-smoking cases booked up to the end of February 1985. Those who have received the acupuncture and maxibustion treatment for stopping smoking since September 1984 are 218. Among the 218 cases, 20 patients failed to come for further treatment due to different excuses. Therefore they have received only one treatment and also cannot be traced. The result of other 188 anti-smoking cases are summarised as follows:

Effect	*No of cases (percentage)*	*Total Effective Rate*
Stop Completely	36 (19.15%)	
Marked Effect	26 (13.83%)	
Fair effect	20 (10.64%)	63.83%
Little Effect	38 (20.21%)	
No Efect	68 (36.17%)	

Remarks

1. Stop completely i.e. stop smoking for more than 6 months.
2. Marked effect i.e. stop smoking for 3 – 6 months or decrease 80% for more than 6 months.
3. Fair effect i.e. stop smoking for 1 – 3 months or decrease 80% for 3 – 6 months, or else decrease 50 – 80% for more than 6 months.
4. Little effect i.e. stop smoking for 1 week or decrease 50% for 1 – 3 months, or else decrease 20 – 50% for 3 – 6 months.
5. No effect i.e. not up to the standard of little effect.

Table 1: The statistics of the effect for 428 cases

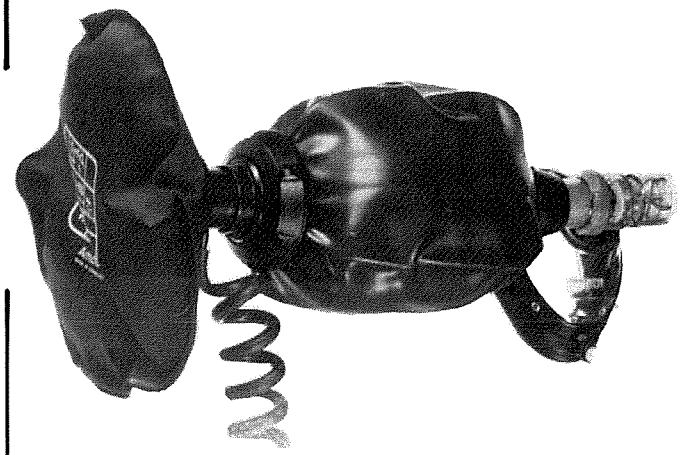
Name of Disease **Disease of Motor System**	Case No	Cured	Marked Effect	Fair Effect	Little Effect	No Effect
Stiff neck	1		1			
Acute sprain (shoulder)	4	1	3			
(elbow)	1	1				
(lumbar)	3	1	2			
(knee)	2		1	1		
Cervical Spondylosis	41	1	11	17	9	3
Frozen shoulder	14	3	7	4		
Other shoulder pain (O.A. Changes & Rheumatoid arthritis)	8		2	3	3	
Tennis elbow	12	1	8	1		2
Golf Elbow	2			2		
Elbow joint pain after injury and Operation	3				1	2
Wrist joint pain (O.A. changes and rheumatoid, fracture)	9		2	5	1	1
Pain of palm and fingers	2				1	1
Lumbago (O.A. rehumatoid slipped disc, injury of m & ligament)	22		11	6	4	1
Other lumbago (Femoral neuralgia, neuralgia over buttocks except sciatica)	39		19	16	3	1
Hip pain after artificial joint operation	1	1				
Knee joint pain (O.A. rheumatoid injury of meniscus)	49		13	26	6	4
Spasm of calf muscles	3	1	2			
Ankle pain (rheumatoid sprain of ligament & burst)	10	2	i	3	4	
Toe pain (gout, trauma)		1	2			

Disease of Nervous System						
Headache (cold, hypertension sinusitis, neurosis)	28		12	13		1
migrane	22		10	11		1
trigeminal neuralgia	7		7			
facial nerve paralysis	1		1			
carpal tunnel syndrome	2		1	1		
sciatica (O.A. slipped disc)	17	6	8	1		2
hysterical paralysis	1	1				
after effect of apoplexy	1			1		
hypochondriac pain	12		1	1		
specific tremor & writers cramp	3		1	2		
Chorea	1			1		
Neuritis & Pain due to diabetes mellitus	2		1	1		
Pain of stump and phantom limb pain after amputation	1			1		
Injury of spinal cord spastic paralysis due to encephalitis multiple sclerosis	1					
pain of half body due to thalmus obstruction	1					
Disease of Digestive System						
Gastric spasm, acute gastritis	4		2	2		
Nausea & Vomiting	4	1	3			
Chronic diarrhoea	2		1	1		
Constipation	12	1	2	7		
Disease of Cardio-Vascular System						
Coronary Heart disease & Dyspnoea	1			1		
Phlebitis of lower limb	2			2		
Buerger disease	1			1		
Disease of Respiratory System						
Cough	4		1	3		
Asthma	6		2	1	2	1
Disease of Urogenital System						
Enuresis	3		2	1		
Cystitis	2		1	1		
Impotence	2			1	1	
pain in perineum after prostectomy	1		1			

Gnaecological Disease						
Dysmenorrhea & pre-menstrual tension	10		3	7		
pruritus vulvae	1				1	
Eye Disease						
acute conjuctivitis	3		1	1		
stye	1	1				
spasm of eye lid	1		1			
ocular paralysis due to DM	1		1			
convergent defect	1				1	
pain due to cornea injury	1		1			
pain due to glaucoma	1		1			
blured vision due to retinopathy	1			1		
E.N.T. Disease						
Tinitus & hearing loss	5		1	2	1	1
nasal obstruction (cold, allergic rihnitis)	4	1		2	1	
Skin Disease						
neuralgia after onset of herpes zoster (acute stage)	4		2	2		
alopecia (bald or partially bald)	6			5		1
Psoriasis	1				1	
Neurodermatitis	1		1			
Other Disease						
Alcohol, drug withdrawal syndromes	4	1		1	2	
obesity	14	1	1	4	1	7
cancer pain	3			3		
Total 67 diseases	**428**	**21** **4.9%**	**150** **35.05%**	**173** **40.42%**	**51** **11.42%**	**33** **7.71%**
		80.87%			**19.13%**	

Ambu®

Resuscitator Mark III



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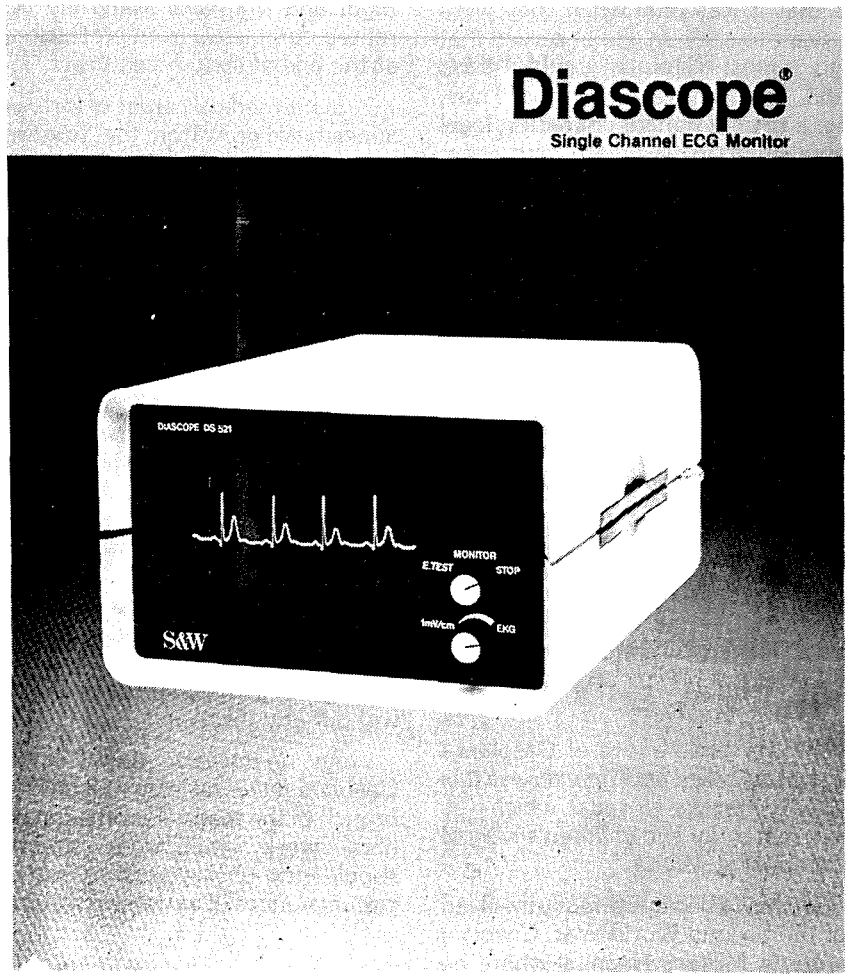

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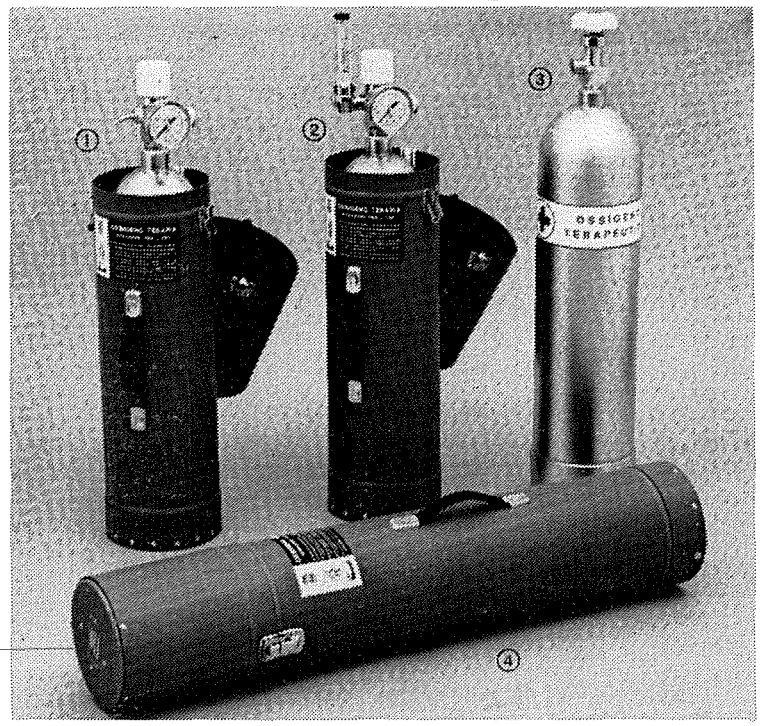

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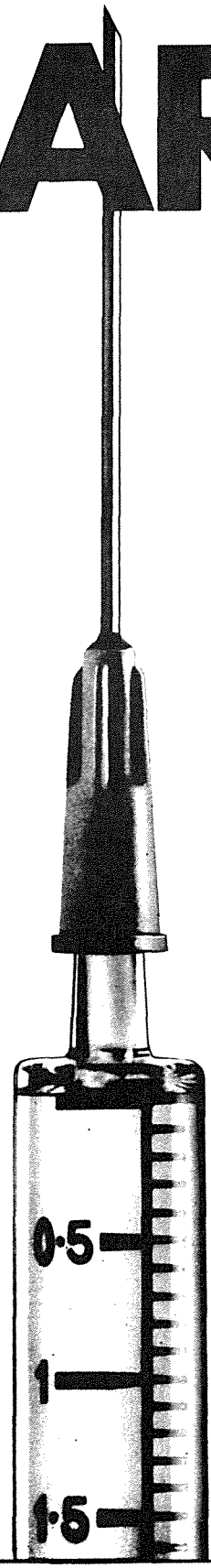

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