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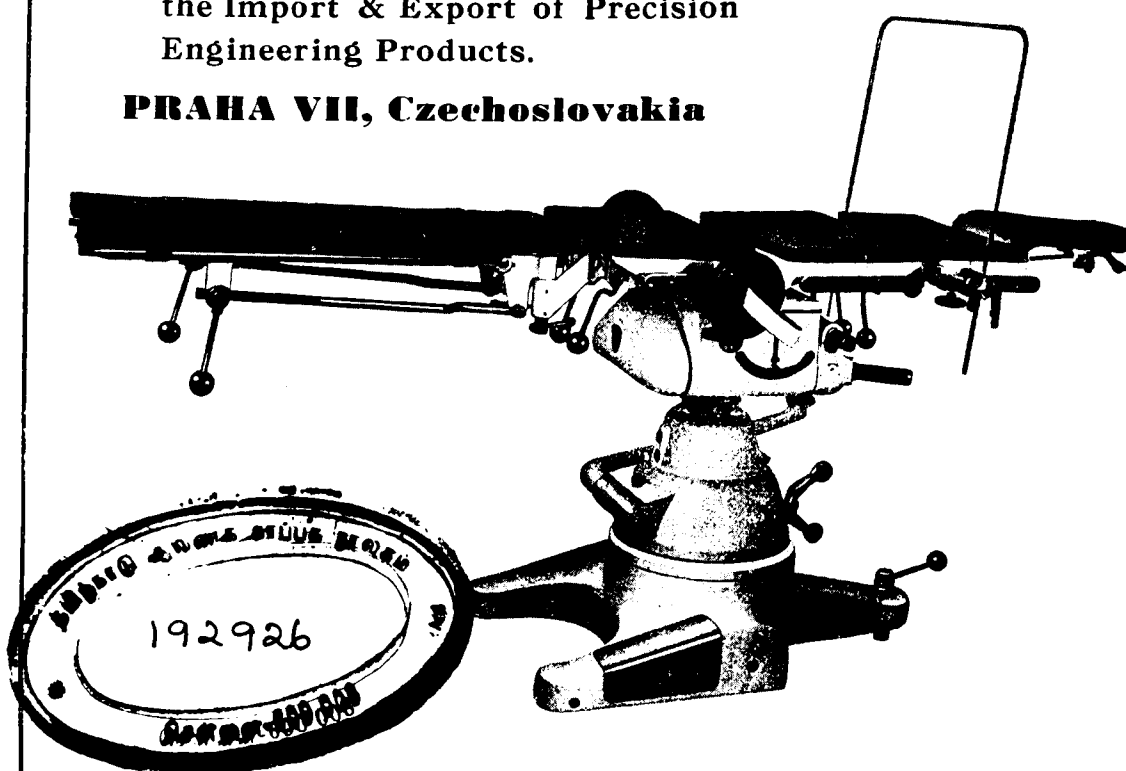
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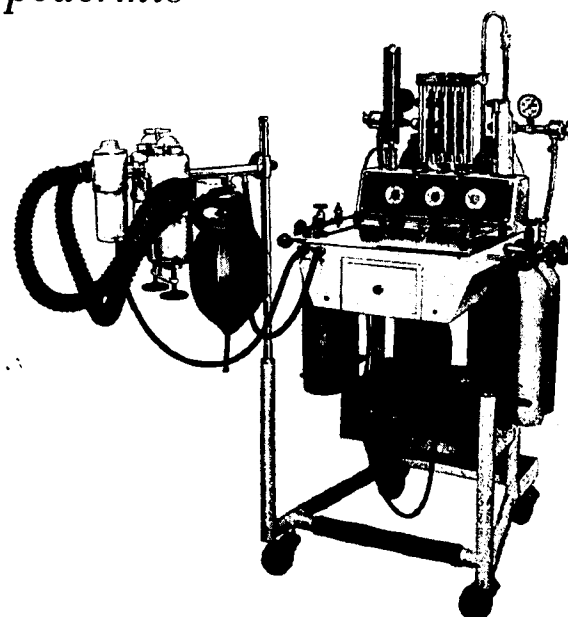
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RESEARCH IN MEDICINE

THE Indian scientist who was visiting a foreign country was astonished. He found an elderly man working with his own hands on a research problem. "Good heavens! In my country he would have become a director by now" I read this in a weekly published by that pioneer among Indian cartoonists—Shankar.

One of the reasons why the quality of our medical research is so poor is contained in the innocent remark which the scientist is supposed to have made.

People are too busy reaching up the top. The possession of knowledge or the discovery of new things appear to have no intrinsic value. To be at the head of an office or a department is the burning ambition of all, for that carries with it social prestige, position and power. To pay lip service to research is fashionable and it smooths the way to reach the administrative summit. Once there, the holder of that office becomes omniscient, omnipotent and infallible.

The chief surgeon was exploring the abdomen. The viscera in the lower part appeared to be normal but when his hand wandered up into the upper reaches he exclaimed "The liver is on the left. The spleen is on the right". There his interest ended, although the fact remained that if he were not talking nonsense the condition was so rare that even a distinguished comparative anatomist could only just imagine it. The surgeon beckoned to his assistant to feel. "Yes, indeed it is." His assistant was not bothered where the liver was. His main object was to advance his career and be sure to remain in his boss's good books.

This apathy and servile willingness to accept without question, merely because it comes from a superior, is another reason why research does not thrive in our land. Who dares to question the superior's infallible diagnosis?

Research requires leisure to reflect and to think about problems. Leisure is a luxury only the rich can afford. And those who are rich are too busy becoming richer or trying to become more powerful. Academic research is for their inferiors who are also equally busy jostling with each other to obtain higher positions and official favours, and the emoluments that go with it.

It is said of Sir Frederick Gowland Hopkins, famed discoverer of vitamins, Nobel laureate, and one time President of the Royal Society that he would never allow his name to be used in any publication of importance by his juniors unless he had done a large

part of the work himself. He did not believe in his juniors slaving and himself enjoying the fruits of their labour. In our land it is the privilege of those at the top to monopolize the glory. When a research problem has been completed, it is possible that those who actually did the work may not even receive any credit. A distressing cynicism has crept in: an apathy that is truly shocking.

Our national character appears to endure injustice as long as it does not come from foreign rule. It is simpler, safer and more paying to shrug our shoulders and accept it as inevitable.

Our national planners are making a great success of the Five Year Plan. The world is full of admiration for them. The natural resources of the country are being exploited. Dams are being built across rivers to irrigate more land and to harness power. Community projects and village reconstruction proceed smoothly. Why? Because the planners have learnt one thing. The peasant is the backbone of our land. The plans are for him more than anyone else—for the ordinary tiller of the soil who reaps such poor rewards for his labours. He has to be consulted and taken into confidence. The concept of 'people's participation' has been realized and it has proved immensely popular and successful.

That same idea has eluded us in the medical fraternity. Officialdom has become top heavy. There are many in the lower rungs who are highly qualified but they are unwanted or do not have much place. There are people who have been abroad and returned with new ideas but they have to curb their tongue and follow in the same rut. Ideas should appear as if they have come from above. Many govern by virtue of their age and seniority. There is room below only for those who can remain servile, and say "Yes" to them. There is no equivalent yet of "people's participation" here. Should anyone dare to question authority the result is inevitable. He will be crushed without mercy.

In such an atmosphere research does not thrive.

Clinical research is based on team work. The persons doing it should in the first place be keenly interested in what they are doing. Access to a variety of clinical material and to the laboratories can only be had in large hospitals—Such hospitals are run by the State. Any work that is done is almost invariably directed and never assisted. There are some exceptions but these are few. Should anyone

have the temerity to challenge direction he is promptly relieved. The unfettered pursuit of science does not flourish in such an atmosphere.

The basic thing is this. The struggle for existence is intense. Perhaps the court intrigues of olden days pale into insignificance when compared to what is happening to-day. It is probably easier to remain a President of a small Latin Republic in South America than rise to the academic summit in one's chosen field of study. Having reached the top one naturally comes to expect that he should be the central figure on the stage. To have anyone under one's administrative control who is likely to question one's sole monopoly of knowledge or seeks to share the stage becomes intolerable. The junior immediately becomes a potential rival, an enemy who has to be destroyed before he breaks the existing order of things. And as ruthlessly as Dictators, we are prepared to smite him down. Officialdom offers many subtle ways of doing so quite effectively and strangulation by red tape is invariably lethal to the spirit.

The pleasantest thing is to be surrounded by admiring mediocres and sycophants who fawn upon their chief every day and sing the praises of their "lord and master." This is a most wonderful feeling—the fruits of a lifetime of endeavour to reach to the top.

Our great and fearless Prime Minister Jawaharlal Nehru, one of the few who can dare to court "unpopularity for the sake of truth" may claim that qualified men of science who have special skill and training should be at the helm of the nation's technical progress. Alas the machine is so clogged that such people can never flourish unless they strike out independently on a private enterprise. They may do very well for themselves—but their contribution to the progress of the State will be negligible and the opportunity for medical research outside the precincts of the hospital and laboratory is necessarily limited.

What then is the answer?

We should reorientate our attitude towards research. Leisure should be valued and given freely to those who can use it well. Research is expensive and we must be liberal with our monetary grants. Success in research is brought about by indefatigable and patient work of medical men assisted and guided but never directed or dictated by those above.

Those who pursue research should be relieved of all economic hardship so that they can put aside their personal problems and devote their whole-hearted attention.

to their work. They should not be constantly on the look out for a lucrative post which can enable them to throw up their research and quit. Modern research is team work and credit should be shared equally. Research workers are not paid employees to do work at the behest of and for the "boss".

We have to adopt a new attitude to the subject. There are many among us who have been abroad long enough to study the manner in which progressive peoples conduct their research.

We have become drunk on local adulation that we have ceased to care what is happening elsewhere. We have become euphoric and live with the delusion that there is no one to better us and that we know the last word on all subjects. In such an atmosphere humility has no place and our pride and egoism does not permit us to tolerate even for a moment independent thought, or fearless expression of views from our juniors. Our reaction is the same. We lift the powerful sword which we wield on account of position, prestige and power and strike; and few on the lower rungs of our medical hierarchy can survive such a blow.

We must look first to the welfare of the nation. We must strive to alter conditions so that a truly democratic spirit of scientific enquiry may prevail unfettered by the desires for personal advancement and gain for those, in whose hands much of the direction of research lies.

Research is assisted, perhaps guided but never dictated.

One patient asked his surgeon, "Are you certain, Doctor, that I must undergo this operation?"

"Definitely."

"No medicine, perhaps an osteopath, can help me?"

"I am certain, Sir we'll have to go on with the operation".

"Then get me a preacher."

"Are you that nervous?"

"Not exactly. But if I must be opened, I want to be opened with a prayer."

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Chronic Amoebiasis and History of Its Treatment—A Review

By CH. KRISHNAMURTY

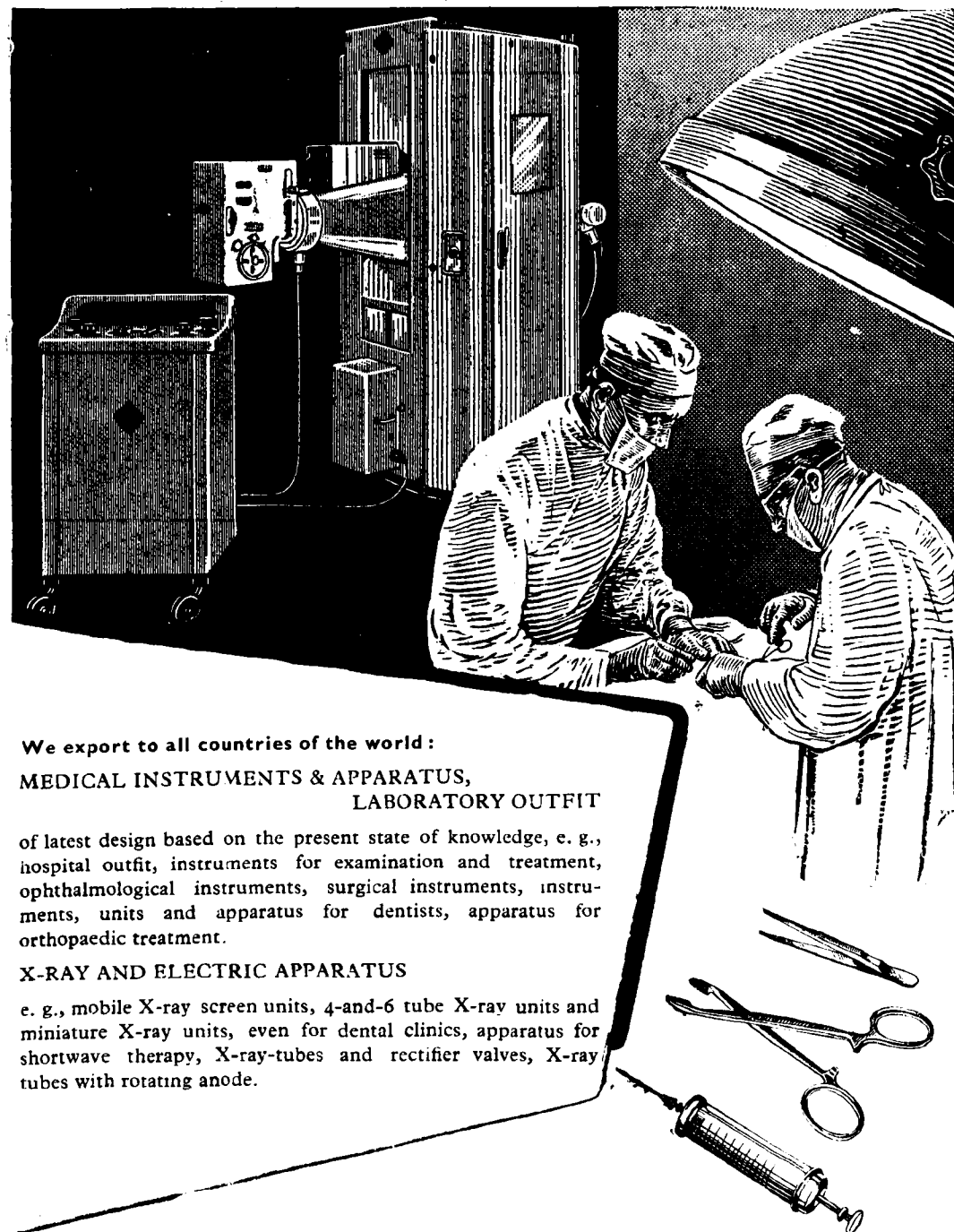
Retired Civil Assistant Surgeon, 7-604 Srikrishnanagar, Visakhapatnam-2

IF there are three diseases that have assumed great importance in medicine to-day they are (1) Amoebiasis, (2) Hypertension and (3) Coronary lesions of the heart. The first one forms an etiological factor for the other two. An eminent authority regards the root cause for hypertension as due to the imbalance of the autonomic nervous system, arising from chronic bowel infection, usually Amoebiasis in 95% of the cases. The toxæmia of Amoebiasis has its repercussions on many organs of the body by metastasis—the liver, Pleura and the lungs, heart and the pericardium, the appendix the spleen and the kidneys, the Brain and the skin. The nervous system is no exception and the majority of the male population to-day in the urban areas has a hectic existence and is neurasthenic. Most of the indifferent health in the form of digestive upsets or Dyspepsias is mostly due to this cause but owing to the constant compromise that takes place between the Amoeba and the host not much notice is taken by the patient until the parasite is assisted by a secondary infection, it is rightly called 'walking dysentery'. Latent carriers carrying trophozoites or the cysts scarcely exhibit symptoms until there is some indiscretion in diet, emotion or exhaustion promoting secondary infection. In spite of various drugs and other measures ushered in for four and half decades permanent cure for the patient is still a doubtful one and reinfection is always likely. A course of treatment with any accepted drug is a relief and the carrier should lead a careful life like an invalid for the rest of his years, always maintaining the resistance at the maximum and avoiding any factor dietetic or emotional which offends the parasite. There are personal characteristics noticed in chronic amoebic carriers—they have a well developed intellect they are overcareful and exaggerate neatness. There is morbid tendency towards extreme decency in words and manner. They dislike vulgar expression and hate coarse jokes. They are meticulous in their work and keep their home in perfect order. They are very sensitive and will brood about things for days on end, they appear modest and have a high opinion about themselves and are inwardly full of criticism for others. They are egocentric. They talk of helping others but really do not do anything outside their own fold. Their attitude towards life is passive and they do not strive to better their position.

They choose the path of least resistance. They are not aggressive. They have a great need for love sympathy and affection. They become unhappy and helpless when they do not receive the above. They are reticent and there is a mental conflict in their conversation. They are worried and depressed than had happened. They tend to be ashamed of not being able to manage their own conflicts. They live in good health so long as their wishes and desires are satisfied and as long as they live a sheltered life. They should be given an opportunity of unburdening their emotions and given simple encouragement and suggestion. The use of drugs is an invaluable adjunct to restore them. Amoebiasis is primarily intestinal and as it becomes chronic in the bowels metastasis through the portal veins and other channels occurs and extra-intestinal lesions are seen as stated above. When once a patient becomes a carrier he will be one for all the rest of his life. I have known carriers of 40-50 years carrying on in apparently good health. In chronic intestinal amoebiasis the patient may complain of a gastro colic reflex, he has an urgent desire to defaecate within half an hour after taking meals or even a hot drink like coffee. Flatulence is a common distressing symptom, abdominal distension is greatly increased after food and may persist for hours. The patients complain of Anorexia, bad taste in the mouth alternating constipation and diarrhoea, indigestion, loss of appetite and weight. Skin is muddy or yellowish and there is mild anaemia, malaise and constant worry of his intestinal condition leading to neurasthenia. Signs and symptoms of duodenal ulcer may result from reflex pyloric spasm and there may be dyspepsia or acidity. Tachycardia, palpitation, breathlessness sense of discomfort in the chest, Arthritis, allergies like eczema, Urticaria or even Asthma may be seen. Mere emotion is enough to excite an acute attack in a carrier.

TREATMENT

Although Ipecacuanha root was used for dysentery and diarrhoea as early as 1660 A. D. and it was not until 1912 that Emetine was first used parenterally by Col. ROGERS in Amoebic dysentery, Hepatitis and liver abscess. Before this period Ipecac-Radi-Pulvis 30



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gr. in boluses on an empty stomach preceded by a dose of Tinc. Opii with rest in bed without a pillow was the practice for 10 days. Invariably the patient used to vomit in spite of elaborate precautions. When Emetine hydrochloride became available freely it began to be used parenterally; it used to be given in one grain doses intra-venously for 9 consecutive days and after a rest period of 3-4 days another course of three grains was the rule. Deek's bismuth treatment side by side was also given. No treatment for the elimination of cysts was in vogue until a few years later. Emetin bismuth iodide was the first and it used to be given in 3 grain doses at bed time in gelatin capsules or keratin coated tablets for ten consecutive days. It had the same nauseating effect as Ipecac and patients more often vomited it out and although more effective than entero-vioform and other similar compounds, it could not be tolerated. Arsenicals like Stovarsol or Carborosane were next introduced but sometimes their toxic effects interfered with their usage. Severe stomatitis was common and damage to the liver function was seen. Alcresta ipecac tablets then came in. These contained total alkaloids of Ipecac but without the nauseating effect. They were better tolerated. Next came in Yatrin, Entero-vioform Diodoquin and various other compounds of hydro-oxy-iodo-quiniline, all powerful in virtue of their iodine content. Resochin, Chloroquin, Resotrin came in one after the other. Each had a place and Didoquin is declared to be better for relapsing cases, chronic carriers and as a prophylactic. It is least toxic and side by side Yatrin or Chinoform was used as a retention enema. (2½% solution 6-8 ounces after a cleansing enema of 1% soda bi-carb.) This became cumbersome as it had to be retained for at least 6 hours or more. After the anti-biotics came in, treatment became simplified. Aureomyecin, Bacitracin, Oxytetracycline and every other broad spectrum anti-biotic is claimed as a cure. In spite of all these, cases were resistant and such were due to either secondary infections with other organisms like *Streptococcus faecalis* or mixed type of amoebic and Bacillary dysentery. Preliminary course of Sulphanomide like Guanadine or Thalazol and Pencillin was begun. Thus the orthodox treatment was till recently for chronic intestinal amoebiasis consisted in (1) a course of Sulphas and Pencillin, (2) a course of Emetine injections, (3) Entero-vioform for 10 days, (4) an Arsenite for a week after Entero-Vioform, (5) retention enemas with Chenoform or Yatrin. This again was taxing and during the recent Korean war the American and the British physicians found after labourious trials that Oxytetracycline is superior to Aureo-

myecin, cure rate being 97.5% and milibis (Glycolyl bismuth arsenalite) is 1/10th as toxic as Carborosane and it is almost unabsorbable and the final verdict to-day is Aureomyecin 500 mgms, Carborosane or milibis, latter preferred if available 0.25 gms, Dihydro-oxy-quiniline 0.6 gms, and chloroquin 0.2 gms all given together at 6 A.M., 2 P.M. and 10 P.M. The 6 A.M. and the 10 P.M. doses are given after a dring of milk and the 10 P.M. one after lunch. This is given for six days and is followed without a break by dihydro-oxy-quiniline and chloroquin for 14 days. If there are any residual symptoms after 6 weeks, irrespective of a negative stool, a second course of oxytetracycline of 500 mgms, carborosane or milibis 0.25 gms. and Mepacrin 100 mgms. all together for six days at 6 A. M., 2 P. M. and 10 P. M. is given. Although several drugs are available no single one is able to eradicate the amoebic infection from the bowel in all cases while 9-12 gr. of Emetine was thought necessary and even intra-venously, 4 grains or even less will quickly control the acute phase of infection in view of toxic effects of Emetine and ½ gr. intra-muscularly every day for 6 injections is usually sufficient to eliminate the trophozoites.

The average Indian with poor resistance is not able to stand more than ½ grain of Emetine and in most cases even four injections of ½ gr. each intra-muscularly will quite well do. Intra-venous administration of Emetine is quite unnecessary and may even be harmful from its rapid action on the heart. A cardiac stimulant like Thiamin or Strychnine is better given simultaneously if the patient is not of average health. If the case demands longer therapy there should be an interval of 4-6 days to remove the cumulative effects before another course is given. The patient should not take active exercise while under Emetine therapy and should rest in bed at least for some hours after the injection. Emetine is no longer necessary when the trophozoites disappear from the stool, however small the dose, and the smaller the better. Emetine has no action on the cysts and Oxyquinolines or arsenicals have no action on the vegetative forms—Another chief use of Emetine is in the treatment of extra-intestinal amoebiasis like Amoebic hepatitis or liver abscess, pulmonary amoebiasis and abscess of the lung, Appendicitis etc. In all these cases a course of Emetine and Pencillin injections and sulphas by mouth should first be given. Even amoeboma disappear with Emetine. Many cases of appendicitis of even suspicious amoebic origin, clear up with Emetine. Surgical intervention is needed only if there is no resolution after Emetine therapy. Resochin or Chloroquin is equally effective

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in the extra-intestinal amoebiasis. Chloroquin does not however effect the intestinal amoebiasis as it is rapidly absorbed in the upper bowel. Resotrin, a chloroquinoline-iodoxy-quinoline compound, is claimed to be effective in both intestinal and extra-intestinal amoebiasis and in the acute phase with trophozoites. Its effects are however often irritable, Colicky pain, severe diarrhoea, vomiting and even threatening collapse are noticed in some cases.

To destroy the cysts Emetine Bismuth Iodide, Entero-Vioform and Diodoquin should be given for ten days consecutively. This is better followed by an arsenical like Carborosane for 8 days provided the liver function is normal. Simultaneously with internal treatment for the cysts, local treatment with retention enemata with Yatrin or Chinoform 2½% solution 6 ozs. should be given. This is preceded by a cleansing enema of Soda-bi Carb 1% one pint. The retention enema should be retained for atleast for 6 hours and the patient should change his position in bed every now and then so that the fluid may reach as large an area of the bowel as possible. Ext. Kuruchi Liquid or Kurchi Bismuth iodide, indigenous preparations of Holarhoea Antidysentrica are also effective for the cysts but are not as effective as Emetine Bismuth Iodide. They are less toxic and nauseating. Kurchi-Bismuth-Iodide is also given for ten days like Emetine Bismuth Iodide. Several combinations of anti-biotics and other drugs were tried with success during the Korean war by the British and the American physicians but the treatments were prohibitively costly in civilian practice. The American plan consists in a preliminary course of Pencillin and succyl Sulpha

thiazole for 3 or 4 days followed by Emetine for 4-6 days and Emetine Bismuth Iodide for 12 days without a break. During the course of Emetine Bismuth Iodide a daily retention enema of Chinoform is given. During the next 12 days either dihydro-oxy-quinoline or Carborosane is given. If cure is not obtained a second course is given after 10 or 12 days. The British method omitted the Chinoform enemata. After a preliminary course of Pencillin and Sulpha-thiazole or guanidine, Emetine for 2 days followed by Emetine Bismuth Iodide for 10 days and Carborosane for 8 days. In addition the patient received Dihydro-Oxy-quinoline through out the course. A patient who does not respond to two courses is not likely to respond to a third one. In spite of the above it was found that the cure rate was only 81.5% and some developed hepatitis from 6 months to 5 years after wards. Aureomyecin and Oxytetra cycline were found to combat a secondary infection and destroy trophozoites and cysts at one stroke and it became possible to substitute them for Pencillin and Succyl-Sulphathiazol, Emetine and Emetine Bismuth Iodide and thus make the treatment more effective and simplified though costly. Details of the treatment are given in earlier pages.

Finally a course of Liver extract, Iron, Folic acid and B. Complex is necessary to restore the patient to normal health.

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Lancet 12.3.55

She had been tired from a shopping tour, felt throbby in the head, and decided to relax in a movie house. In the darkness she fished in her voluminous handbag for an aspirin, swallowed it and sat back to enjoy the picture.

Suddenly she bolted upright. Forebodings gripped her. On her shopping tour she had purchased in a seed store some pills guaranteed to make her garden bloom. Perhaps she had swallowed one of them instead of the aspirin.

She dashed to the ladies' room and phoned her physician, but he suggested that before thinking of an antidote she should find out the chemical contents of this garden pill. So she phoned the seed store and what they told her really made her swoon. "In each pill, madam, is the equivalent of a ton of fertilizer." She survived the ordeal; but her friends won't let her forget the incident.

Intramedullary Wire Fixation of Hand Fractures

By DR. HENRY BURLINGTON, M.D.

247, East Market Street, Bethlehem, Pennsylvania

Exclusive to "Surgical & Medical News" (Contributed by invitation)

THE PROBLEM

FRACTURES of the metacarpals and phalanges are exceedingly frequent injuries, seen especially in military and industrial practice and occurring also very commonly in children and in athletes. The majority of these fractures present no especial problem in management, going on to fairly prompt healing and rehabilitation.

Although an uncomplicated fracture in this group is, in a sense, a relatively minor injury, it frequently entails considerable economic loss when it occurs in a working man, since it usually prevents his return to work for a matter of several weeks. In compensable cases, this economic loss is also felt by the employer or insurance carrier.

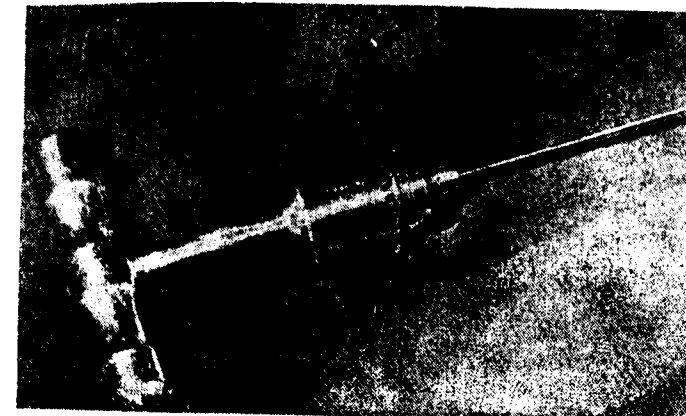


Fig. 1. Hand Chuck.

During the past few years, several writers have described techniques involving the internal fixation of hand fractures with Kirschner wires. In a general sense, these techniques are all very similar, and share the following advantages over the more orthodox methods :

1. Since the need for casts or splints is eliminated, the patient can frequently return immediately to his job while the fracture is healing.
2. Immobilization of uninvolved parts of the hand is eliminated, thus favouring rapid rehabilitation.
3. In most cases, no joint needs to be immobilized, thus favouring rapid and complete return of function.



Fig. 2.



Fig. 3. Pre-Operative.

4. Splinting in unphysiologic positions is eliminated; for example, the extreme flexion position commonly used for drop-knuckle fractures.
5. The need for traction immobilization for certain types of fractures is eliminated.
6. Properly applied, internal fixation frequently affords more nearly complete immobilization of the

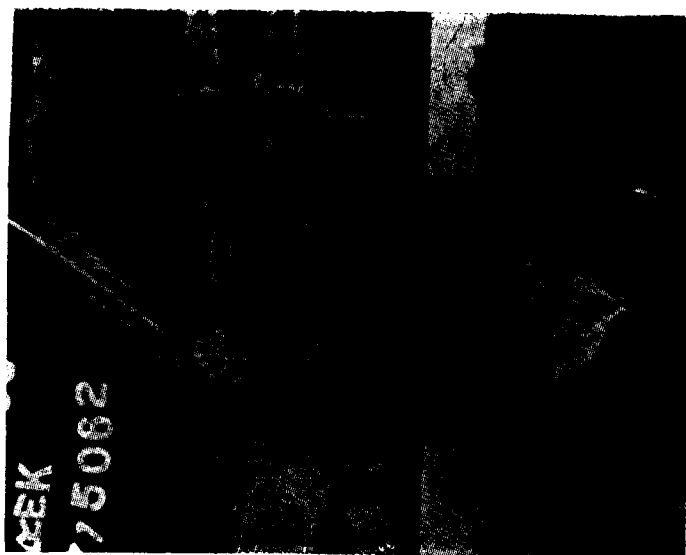


Fig. 3. Post-Operative.

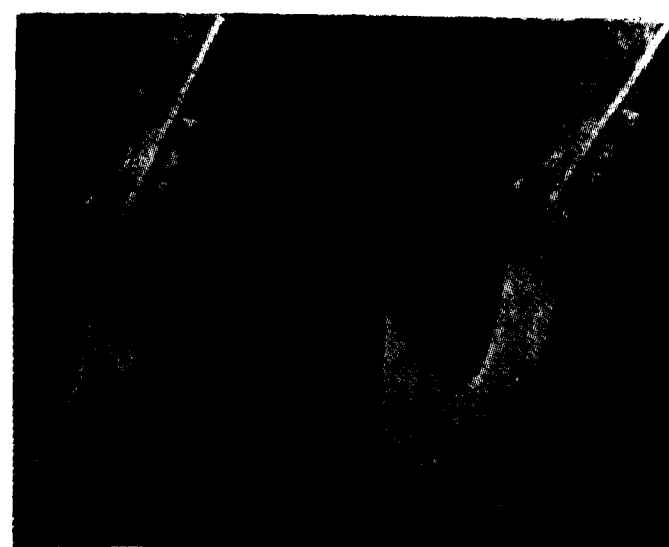


Fig. 4. Post-Operative.



Fig. 4. Pre-Operative.

fracture than is provided by ordinary splinting. This is particularly true in grossly unstable fractures.

THE TECHNIQUE

The procedure is never undertaken except in a well equipped operating room. The hand and forearm, on the involved side, are prepared meticulously for surgery, using the usual methods of antisepsis and draping.

Regional anesthesia, either digital block, metacarpal block, or wrist block, is induced. Local anesthesia *per se* is undesirable, since the swelling induced by the

anesthetic agent at the fracture site may prevent proper palpation of the fracture. Under careful aseptic technique, a very short longitudinal incision is made over the extensor aspect of the joint distal to the fracture. The extensor tendon is held aside while a Kirschner wire is inserted into the dorsum of the involved bone, as illustrated in figure two.

The fracture is then carefully reduced by traction and manipulation. With reduction maintained, the wire is driven along the medullary canal, across the fracture site, and down the proximal fragment until subchondral bone is encountered at the proximal joint. Actual open



Fig. 5. Post-Operative.

reduction, with exposure of the fracture site, is only occasionally needed; when required, it is simply used in addition to the basic technique.

Before continuing further, check x-rays of the fracture, in two planes, are obtained. This step is most important and must never be omitted. Even with an experienced operator, errors of reduction and proper placement of the wire are frequent. The time to discover such errors is at the operating table, before asepsis has been broken, so that any needed correction can be easily performed.

Following the check x-ray, the wire is cut off at a length which permits above 1/4" of the wire to protrude from the site of insertion through the skin. A pledget of cotton, soaked in collodion of Ace Adherent is then applied over the end of the wire. The patient may then be followed as an out-patient, and the wire easily removed with pliers after healing has progressed adequately, usually a matter of three or four weeks.

A very satisfactory type of hand chuck is illustrated in figure one. This consists of an ordinary Jacobs chuck with a simple handle. This instrument seems to give the operator much better control over the position of the wire and the fracture, than is afforded by the usual rotary drill.

Figure two illustrates the basic method applied to a drop-knuckle type of metacarpal fracture. The other illustrations are pre-operative and post-operative x-rays of a few typical cases.

DISCUSSION

Experience in the past few years, with many fractures of the hand treated by this method, has led me to consider it an exceedingly, useful and satisfactory procedure for selected cases. It should not be considered as a routine method for handling all fractures of phalanges and metacarpals. Most stable fractures, especially undisplaced fractures, can be handled by non-operative measures to equal advantage. But for grossly unstable fractures, and especially for oblique fractures and for Bennett's fracture-dislocation of the first metacarpal, the method described is very practical and advantageous. The technique is not especially difficult to master, and in a fairly extensive experience with the procedure, I have seen no complications resulting from the use of the wire.

I would like to express my thanks to Doctor Robert H. Clifford of Detroit, for permission to reproduce figures one and two, and also, incidentally, for having introduced the procedure to me a few years ago.

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He said two Physicians of eminent repute were called into consultation at the home of the patient. The man of the house wishing to know the seriousness of the illness, concealed his twelve-year-old son in a bedroom closet, as an eavesdropper. When the lad came out he told his father. "They used a lot of big words I couldn't understand, but I did hear them say, 'Well, we'll soon find out at the autopsy.'"

Undergraduate Medical Education in India

By G. D. VELIATH, M. D., D. T. M.,

Professor of Pathology, Kasturba Medical College, Mangalore.

IT is generally agreed that the present system of Undergraduate Medical Education in India should be reorganised to suit the needs of the Country. It is essential that our Colleges of Modern Medicine should turn out graduates who can settle down in any part of the Country and practice medicine with efficiency and confidence. In the present set up of our Country, it is not possible to have surrounding every doctor half a dozen auxiliary departments to help him in the diagnosis of cases. He has to depend mainly on his own observations and deductions aided by the limited number of laboratory tests that he can do himself. With this objective in view, it is for us to examine critically whether the education and training that our undergraduates receive at present is sufficient and suited to the task they are called upon to do.

Our present day students of medicine are trained in well equipped hospitals where every modern diagnostic facility is made available. These facilities have more or less replaced the time honoured methods of diagnosis by a careful and thorough case history, inspection, percussion and auscultation. Practically, they have come in between the patient and the medical officer who spends the minimum time talking to the patient or examining him but dictates a series of requisitions to the Radiologist, Pathologist and the Biochemist. And on his daily rounds, he is very often more concerned looking at the charts and the reports than at the patient. Students naturally get accustomed to this diagnostic procedure and when confronted with a case, think only in terms of skiagrams, blood culture, urea clearance and liver function tests. If these are not available they feel helpless and handicapped. They have not been sufficiently trained in the use of their powers of observation, curiosity and sensitiveness of touch and hearing; while the personal contact with the patient is almost completely neglected. In the hospital the students' time is virtually taken up by attending to clinics or watching major operations. They hear instructions like "Prepare the patient for operation," "Give a soap and water enema" or "apply a Thomas's splint," but seldom get an opportunity of doing it themselves or even watching it done. In our major training hospitals the system works like a well oiled machine and so long as our students are attached to these hospitals they feel quite at home. But once they pass

out and settle down in the Country to practice, they find themselves faced with problems for which they have not been adequately trained. There is no Radiologist, Pathologist or Biochemist to help in the diagnosis, no trained nurse or ward-boy to receive orders, and the young doctor finds to his confusion that he is called upon not only to prescribe and operate but also carry out many other items of treatment which in the training hospitals formed part of the duties of the nursing staff.

At present in our Medical Colleges, during the I and II M.B., B.S. course, the so called Non-Clinical subjects are taught by specialists who have no collateral work in the attached hospitals and very little contact with patients. It must be admitted that the approach and outlook of the specialist is different from that of the practicing doctor. The former studies the subject as an end and aim in itself and very often he is engrossed in its never ending problems and this attitude colours his teaching—the stress and importance he gives to the various aspects of the subject. The natural tendency is to make the students miniature specialists in each subject. Usually they are made to learn a number of minute details and data of no use to them afterwards which they cram up for the sake of the examination and forget almost immediately afterwards, while certain aspects of the subject of great importance to the general practitioners are not sufficiently stressed. It is the common experience of many examiners to come across students who can repeat verbatim practically everything about the typhoid bacillus—its morphological and cultural characteristics, sugar reactions and antigenic structure—but who are ignorant where to look for the bacilli in the course of typhoid fever or how much blood to be taken for culture or Widal. The centre of attention is so much focussed on the absolute study of the bacillus that its intimate relationship with the disease produced by it gets only a secondary place. For a general practitioner, the latter information is all important while the growth peculiarities of the bacillus he can well afford to neglect. Unless the specialists have collateral work in the attached hospital and come in contact with patients, the practical aspect of the subject is bound to be neglected and the study will be mainly of a theoretical nature.

The following changes in the system of Undergraduate Medical Education are presented for consideration:

1. *Every Medical Student both clinical and non-clinical to work in the attached hospital in the mornings.*

During the first eighteen months while they are in the 1st M.B., B.S. class, studying Anatomy and Physiology, their hospital duties will be under the guidance and direction of the sister tutors who will train them in the essentials of nursing. Patients will be allotted to them—both surgical and medical—and they must be made to do every item of nursing treatment to these patients. Thus an opportunity is afforded to the students not only to learn the elements of nursing but also to know the patients intimately, spend some time talking to them and understanding their conditions of living, watch their progress in treatment and get a mental impression of diseases, correctly diagnosed by senior Physicians and Surgeons.

2. *The Clinical Teaching of the students to be mainly in the Out-Patient Department of the training hospitals:*

Here the students in small batches must be made to examine every new case and note down their findings and deductions to be corrected or confirmed by the medical officer. This will naturally stimulate their powers of observation and deduction and they will be curious to follow these cases in the wards if they happen to be admitted. They will also learn how new cases, acute, chronic or emergency are handled by experienced Physicians and Surgeons. At present the out-patient departments of our teaching hospitals are comparatively neglected. This state of affairs must change. The

senior medical officers must attend these departments daily where the most serious diseases like Cancer or Tuberculosis present themselves in their early incipient stages and are most likely to be missed.

3. *Every Medical College in India should run a Rural Relief Centre at an adjacent village:*

Medical Students from 1st year onwards will attend this Centre at least once a week. They will make a detailed study of conditions of life in that village, their water supply and sanitation and the diseases common and prevalent in that area. This study will shift from village to village. By the time, the students pass out of the Medical Colleges, they will have a comprehensive idea of our village life and the poverty and the environmental factors that may often play an important role in the causation of diseases in India.

4. *Non-Clinical subjects to be taught not by specialists but by Professors with collateral work in the attached hospitals:*

It is advisable that the Non-Clinical Departments like Physiology or Pathology attached to Medical Colleges in India be under a Director who is solely concerned with study and research in the subject. He will direct research and post-graduate study. He will have an associate Professor with collateral work in the attached hospital who will be in charge of the teaching and training of undergraduates. At present in almost every medical college in India the task of teaching and training undergraduates as well as conducting research in the subject, is entrusted to one Professor with the inevitable result that both suffer. The above arrangement will go a long way in rectifying this defect.

A patient had an infected finger. His doctor suggested he bathe the finger in very hot applications of epsom salts.

The patient returned next day and sheepishly reported to the doctor that the finger had improved, not, however, from any use of epsom salts but rather from a poultice of bread, soap, and water.

"You ignored my advice then," reared up the M.D.

"Wasn't my fault, Doc. My sister-in-law was visiting us and she insisted the poultice would do the trick."

"Poultice, eh? That's queer. My mother-in-law, who lives with us, insists epsom salts is indicated in such cases."

BENIGN ALBUMINURIA

BY DR. D. P. GUPTA, M. B., B. S.

Pathology Department, S. M. S. Medical College, Jaipur.

ALBUMIN is a protein and its appearance in the urine—termed albuminuria was significantly pointed out in correlation to various forms of nephritis by Bright in the 19th Century. Besides the pathological albuminuria, there is nowadays being recognised a well defined entity named Benign Albuminuria, the chief criterion of which has always been the absence of signs of renal disease. Albumin in the urine rarely occurs alone and is usually accompanied by globulin in the ratio of 10:1. Hence it will be more appropriate to term the condition as benign Proteinuria.

Benign albuminuria has a ghost of synonyms. Thus designations like physiological, cyclical, intermittent, transitory albuminurias etc. are merely of historical interest, whereas synonyms like postural (Stirling 1877), orthostatic (Teissier 1899) and lordotic (Jehle 1908) point to the association of the stature of the body especially lordosis which is often associated with benign proteinuria.

Clinical Features : The condition is usually met with in adolescent and young people but may occur in old individuals as well (Bull & Jones 1948). There are no symptoms and the condition is usually diagnosed when the patient takes a routine physical examination such as a medical examination for a Government service, army or life insurance. Results of general physical examination including blood pressure, microscopic examination of urine and ophthalmoscopic examination are all within normal limits. The condition is characterised by the absence of albuminuria when the patient is lying down and its appearance on the assumption of erect posture. Thus the urine specimen collected first thing in the morning after a night's rest is free from albumin but as the patient exerts through the day, albumin appears in the urine.

Pathogenesis : Most authors are of the view that the condition results from venous stasis. Thus Jehle (1913) postulated that such venous stasis results from lordosis when the patient assumes the erect posture. Likewise, Sonne (1920) by passing catheters up the two ureters in a patient having lordosis noticed that when the

patient assumed the erect i. e. lordotic posture, albumin appeared from the left kidney but not the right. It was thought that since the left renal vein has to cross in front of the aorta to reach the inferior vena cava on the right side of the vertebral column, it got compressed between the superior mesenteric vessels and aorta in the presence of lordosis. However, benign proteinuria has also been observed to originate from the right kidney (Ekehorn 1931, Bull 1948). Therefore Bull in 1948 postulated the compression of inferior vena cava against the spine by the posterior surface of a rotated liver but only in the lordotic position. Eppinger in 1912 proposed that the effect on the inferior vena cava might be located at the diaphragmatic opening. Bull later on also gave support to this contention. However, this theory does not explain the proteinuria which occurs in persons without lordosis.

The above conception of venous stasis phenomenon causing benign proteinuria is, however, refuted by other workers like Lagerlof, Eliasch, Werko and Berglund (1951) who noted an increase in the systemic pressure in the horizontal (supine) position as compared with the upright.

Leaving aside the question as to how this venous stasis is caused, the actual mechanism by which protein enters the urine has been explained in three ways:—

A. Pre-renal Mechanism : Normally the glomerular filter is permeable to proteins according to their molecular weights. The limit as to the molecular weight is thought to be in the order of a weight slightly lower than that of serum albumin. Thus some unknown qualitative change in the plasma proteins leading to lowering of their molecular weights may cause a leakage of the affected protein in the glomerular filtrate i. e. proteinuria occurs by a pre-renal humoral mechanism without implying any disorder of the renal nephron. This view found support by the experimental observations of Bayliss, Kerridge and Russel (1933) and Addis (1945, 1948). But the latest observations by modern workers including Erick Lowgren do not lend any support to this hypothesis.

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B. Renal Mechanism : i. e. proteinuria is due to some disorder in the renal nephron. This may be considered under three headings:—

1. It is believed that the normal glomerulus filters plasma proteins in small but significant amounts which is reabsorbed by the tubules. Addis (1948) emphasised that proteinuria even of a high degree or grade could be explained by the depression of tubular reabsorption in some way or other. No data are, however, available on the normal protein filtering function of a normal healthy kidney. Moreover modern investigations on the nephrotic syndrome by Barnett, Forman and Lauson (1952), Grief and Hiller (1954) do not support the view that the nephrotic proteinuria can solely be explained by a decreased tubular reabsorption of normally filtered protein.
2. Most authors and modern writers subscribe to the view that proteinuria is due to increased permeability of the glomerular filter. This view, too, lacks sufficient explanation and suffers

from certain drawbacks. Thus the qualitative conformity of the protein in the glomerular capsule and the protein voided in urine from the same kidney has not been proved so far. A tendency to cylindruria and hæmaturia is missing (Naerra 1936). Even high protein values without casts have been observed (Wolman 1945). Thus there seems to be little support for the view of glomerulus filtering the urinary protein in benign proteinuria.

3. Kaiserling (1942), Frey (1949, 1951) and Jahnke & Scholtan (1953) believe that tubular excretion of protein is at work in the nephrotic syndrome i. e. proteinuria is explained by tubular excretion of protein. However, this view is denied by Addis (1948), Smith (1951), Barnett, Forman & Lauson (1952), Squire (1953), Chinard, Lauson, Eder, Grief and Hiller (1954).

C. Post Renal Mechanism : To solve the prevailing controversy outlined above, a post-renal mechanism in the pathogenesis of benign proteinuria was put

forward by Quincke in 1912 according to which protein is added to the urine beyond or below the renal nephron. This implicated the renal lymphatics as the primary agent and aims at explaining the proteinuria as being due to an admixture of lymph with urine. A rich lymphatic anastomoses has been demonstrated in the region of the fornices of calyces of renal pelvis and a great importance has been attached to this region by Narath (1951). This is the region where pyelolymphatic refluxes have been observed and where there is a discharge of protein from the renal lymphatic system. The exact knowledge of the process of admixture is lacking. Narath maintains the possibility of mere reabsorption i. e. without mechanical rupture of the endothelium. Mechanical rupture, however, occurs in cases where the reflux is of a high degree. Quincke's hypothesis has recently been supported by the observations of Erick Lowgren.

The widely accepted view of the importance of a disturbance of the venous return from the kidney may be correlated with the lymphatic system by saying that a venous stasis increases the flow of lymph from the organ in question.

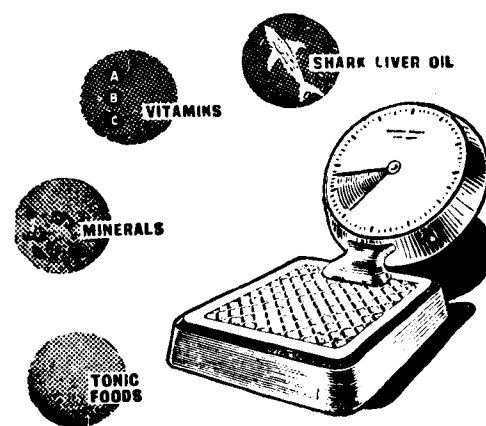
Prognosis : Prognosis of benign proteinuria as such is excellent (Fox 1921, Salvesen 1948, Fishberg 1954, Boyd 1953). Kidneys, the seat of benign proteinuria do not show any tendency to later inflammatory or degenerative parenchymal diseases. The few cases which have been submitted to a post mortem study have not presented any histological alterations in the nephron (Rytand 1937, Addis 1948, Salvesen 1948). Such kidneys are no more prone to any of the renal affections as the normal kidneys. In some cases, the condition tends to clear up and even disappear as the person grows through adolescence.

Acknowledgment :

I am thankful to Dr. J. C. Sarin, M.B., B.S., D.T.M., Lecturer in Pathology for his help in preparing this paper.

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SADDLE BLOCK ANAESTHESIA IN OBSTETRICS

(Report of 106 Cases)

By DR. M. D. ADATIA,
BOMBAY.

INTRODUCTION

THE saddle block anaesthesia in obstetrics is getting more and more popular and has several advantages. There is increased safety for mother and the fetus. The relief of pain is immediate and of a very high degree and the method of administration is also extremely simple.

It was attempted in 106 obstetrical cases for relief of pain and the side effects of this procedure were compared with those obtained in a series of 100 control cases.

SELECTION OF CASES

A rigid routine of alternating trial and control cases was not possible. Obstetrically difficult cases were preferred for the anaesthesia. The number of primiparas in the trial group is, thus, significantly more.

The anaesthetic was usually administered after four fingers dilatation of the cervix for relief of pain during second stage of labour. During the first stage of labour the patients were usually managed with chloral hydrate, potassium bromide and Pethidine.

The absence of Contra-indications was meticulously observed in every case. The main contra-indications considered were disease of the central nervous system local infection at the site of lumbar puncture, patients in shock and coma, severe hypotension, cardiac failure, and constriction ring dystocia. Neurotic type of patients and those suffering from chronic backache, headache and migraine were not taken up for trial.

TECHNIQUE OF SADDLE BLOCK ANAESTHESIA

I. Injection of Atropine 1/100 gr. was given hypodermically about one hour before the anaesthesia. Ephedrine 0.04 grammes was given intra-muscularly just before the lumbar puncture. This regime was carried out to guard against the fall in the blood pressure.

II. Heavy Nupercaine of Ciba was used for the saddle block anaesthesia. This substance as a specific gravity of 1.024, which is heavier than that of C. S. F. Lumbar puncture was

done between the Lumbar 3rd and the 4th vertebrae with the patient in the sitting posture. Cisternal puncture needle was used, which is equal to 24 gauge needle of B. D. type. 0.5 c. c. of heavy Nupercaine was injected slowly into the subarachnoid space, without previously removing the cerebrospinal fluid and without previous admixture with it. The patient was maintained in the sitting position for 3-5 minutes. The movement of the heavy solution within the subarachnoid space in governed by gravity and the inclination of the spinal column. As the patient is sitting up the heavy solution sinks to the lowest part of the thecal sac and it affects only the sacral roots. Except for the soles of the feet, the legs are not anaesthetised.

III. The administration of oxygen was carried out in all cases.

ANALYSIS OF RESULTS

The effectiveness of the anaesthesia was evaluated solely on the basis of subjective relief of pain obtained by the mother.

SUBJECTIVE RELIEF

Out of 106 cases 99 cases had complete subjective relief of pain, 5 cases had incomplete relief and 2 cases had no relief.

TABLE I

Relief of pain in 106 cases of saddle block anaesthesia

Complete relief	99 cases
Partial relief	5 cases
No relief	2 cases

Patients were classified as incompletely anaesthetised when they continued to feel the uterine contractions to some extent. The two cases who did not obtain any relief of pain were not successfully anaesthetised. Nupercaine could not be injected in the spinal canal at all in those cases as after repeated lumbar puncture only blood stained fluid came out.

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The duration of the subjective relief of pain varied from two to three hours. 94 of the anaesthetised cases delivered within two hours. The remaining 12 cases of the series delivered within 3 hours. In several cases even the episiotomies and the perineal tears could be sutured, without any further anaesthesia.

PARITY

Out of 106 cases 28 were primipara, 12 were second para, 13 were third para, 12 cases were fourth para, 9 were fifth para, 11 were sixth para, 6 were seventh para, 5 were eighth para, 4 were 9th para, 3 were tenth para, 1 was an eleventh para and 2 were twelfth para.

TABLE II

Para	Trial Cases (106)	Control Cases (100)
I	28	5
II	12	4
III	13	18
IV	12	20
V	9	3

Para	Trial Cases (106)	Control Cases (100)
VI	11	22
VII	6	16
VIII	5	6
IX	4	3
X	3	3
XI	1	—
XII	2	—

More than 40% of the cases taken up for trial were either first para or second para, because the labour was expected to be prolonged and distressing in this group.

TYPES OF DELIVERY

68 were spontaneous deliveries, 18 were delivered after forceps application on which 12 were right occipito-posterior, 18 were of breech presentation, which were assisted or extracted, and in two cases internal version was done to deliver the child. The spontaneous deliveries may have been possible in some more cases, by waiting for longer time and educating the patient to

bear at the time of uterine contractions. In some cases prophylactic outlet forceps was done. Twelve cases were of right occipito posterior and with the low forceps easy delivery could take place. In the control series 14 were forceps deliveries, and four delivered by breech.

TABLE III

Types of Delivery	Trial Cases (106)	Control Cases (100)
Spontaneous deliveries	68	82
Forceps	18	14
Breech	18	4
Internal Version	2	—

82% of the cases in the control group had spontaneous deliveries as opposed to 64% in the trial group. 36% of the cases in the trial group presented some sort of obstetrical difficulties and definitely required anaesthesia. In none of these cases the saddle block anaesthesia was supplemented with any other form of anaesthesia.

SIDE EFFECTS

TABLE IV

Side Effects	Trial Cases (106)	Control Cases (100)
Temparature	16	14
Headache	16	8
Neuritis	5	12
Catheterisation	9	—
B. P. Fall	9	—
Sciatica	1	—

The saddle block anaesthesia is not without certain disadvantages. The number of patients who complained of headache in the trial group was double than that in the control group. This headache is supposed to be a post spinal headache. It is caused by the hypodynamics of the cerebro spinal fluid circulation, or it may be due to the pulling of blood in the splanchnic vessels and in the lower extremities. The sudden release of intra abdominal pressure occurring after delivery further augments the vaso motor paralysis due to action of spinal anaesthesia on the splanchnic nerves. (Leighton) 3 (Mehl) 4.

HEADACHE AFTER ANÆSTHESIA

TABLE V

Duration of Headache	Trial Cases (106)	Control Cases (100)
No Headache	90	92
For 1 day	7	6
For 2 days	4	—

Duration of Headache	Trial Cases (106)	Control Cases (100)
For 5 days	3	—
For 10 days	—	2

Usually the patient complained of dull ache in the back of the neck extending to the occipital region and occasionally to the frontal region. Prostigmine, benadryl, ephedrine, Nicotinic acid were tried but without much help. Tight abdominal binder gave good relief in some cases.

There is no suggestive evidence that the third stage of labour in unduly prolonged after this anaesthesia.

TABLE VI

Time	Trial Cases (106)	Control Cases (100)
Within 10 minutes	82	95
Within 20 minutes	23	4
Within 35 minutes	4	1

It appears from the above table that there are more cases in the anaesthetised group where the third stage of the labour was delayed for more than 10 minutes. But it should be remembered that many of the cases taken up for anaesthesia presented some obstetrical problem and their third stage of labour was likely to be prolonged in any case.

Incidence of catheterisation was slightly higher in the anaesthetised group. Catheterisation within 24 hours after delivery was not considered abnormal. 8 patients had to be catheterised for two days, and only one patient was catheterised for 6 days. Early ambulation diminished the frequency of catheterisation. 24 hours after delivery the patients were allowed to go to the bathroom. Urinary tract infection was not noticed in any of the cases.

The incidence of fever was nearly the same in both the groups. Fall of blood pressure upto about 20 mms. of mercury was noticed in few cases. Majority of these cases were of eclampsia and pre eclampsia.

Danger of neurological complications is supposed to be always associated with this form of anaesthesia, but no permanent neurological damage was observed in this series. Tingling and numbness in the lower extremities, and pain in the distribution of sciatic nerve were reported, but all these patients were relieved of their symptoms during their usual stay of ten days in the hospital.

The incidence of the abnormal child birth is classified in the following :

TABLE VII

Condition of the New Born	Trial Cases (106)	Control Cases (100)
Twins	2	—
Still births	7	4
Premature	10	5
Neonatal deaths	5	—
Congenital anomalies	3	—

From the above table it might appear that incidence of fetal abnormality is more in the trial group. Criterion for selection of cases in both the groups were different, and more abnormal cases were taken up for anaesthesia. Hence, the fetal abnormalities and the fetal mortalities in the cases of the trial series should not be necessarily attributed to the anaesthesia. Usually the babies born after the anaesthesia were of good colour and muscular tone, and their cry and breathing were spontaneous.

COMMENTS

There is no doubt that the saddle block anaesthesia has definite place in the obstetrical practise. It is better suited for cardiac patients and those patients suffering from respiratory diseases. There were no respiratory complications following the anaesthesia in the present series.

The relaxation of the genital passages was complete. The presenting part was brought to the outlet in many cases by the action of the uterine contractions alone. The mechanical trauma to the fetal head was minimised by the elimination of the involuntary bearing down reflex. There were no ill effects on the new born. The after care of the anaesthetised patients was easier. Convalescence was remarkably smooth. The patient was returned to her room soon after delivery without any signs of fatigue and was able to take nourishment when desired.

The time of administration of the anaesthesia required definite mention. It should not be given till the end of

the first stage of labour. Its administration should be reserved for the relief of pain in the second stage of labour. Earlier administration of the anaesthesia may impede the progress of labour. The rotation of the head will occur usually before the late first stage. If anaesthesia is administered after this rotation, the deliver is more likely to be spontaneous. Too early administration of the anaesthesia may necessitate a repetition of it in the later part of the labour.

The incidence of the post spinal headache is 14%. But in none of the cases of this series it was very severe and long lasting, neurological complications are very rare and nothing of significance could be noted in the present series.

Huston and Leberg 2 and Green 1, and his associates have shown that smaller the gauge of the spinal needle, the lower the incidence of post spinal headache. They had reduced it to 2.8%. In this series 24 gauge cisternal puncture needle was used. The incidence would have been lessened if smaller gauge needle was used.

SUMMARY

- I. Saddle block anaesthesia with heavy Nupercaine solution was attempted in 106 cases obstetrical cases. It provided complete subjective relief in 99 cases.
- II. The side effects of the anaesthesia were compared with a group of 100 control cases where no anaesthesia was used. The incidence of the post spinal headache was 14% in the anaesthesia were noted in the series.

References :—

1. Green B. H., Goldsmith M. and Lichtig S. Amer. J. Obst. Gynec. 58 : 709, 1949.
2. Huston J. W. and Leberg T. B. Amer. J. Obst. Gynec. 63 : 139, 1952.
3. Leighton H. T., and Hershenson B. B. Obst. & Gynec. 1 : 426, 1953.
4. Mehl L. B. Amer. J. Obst. Gynec. 68 : 1105, 1954.

On one occasion, our actor-surgeon had deftly performed a delegate brain operation near the petrous portion of the temporal bone. At its conclusion, his fellow surgeons broke out into spontaneous and spirited applause.

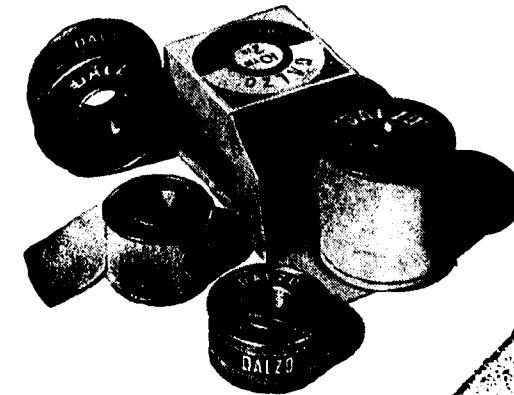
Our actor-surgeon bowed graciously. Then, for an encore, he quickly anaesthetized the tonsils and snipped them off with rhythmic dexterity.

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