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Management of Fore-arm Fractures

By

Dr. C. VYAGHRESWARUDU, M.B. M.S. *(Gen. Surgery)* M.S. *(Ortho.)*

Among the daily occurrences both in children and adults Fore-arm fractures are the commonest. These fractures are notorious in earning a bad name to most of the Surgeons if they are not properly handled. Many Bone-setters have earned their name by treating these fractures in children which are fairly simple and unite without any difficulty. In contrast to above fore-arm fractures of adults have been mismanaged and spoiled by bone-setters as these in adults are most troublesome. Many surgeons have burnt their fingers in their treatment of these fractures in adults by attempting to give best results by operative methods.

This paper is based on a personal experience of treatment of fractures of forearm for the last twelve years, and also by observing the results of operative treatment done by experienced surgeons. The treatment suggested in the following lines is after assessing the results of 150 cases of forearm fractures out of 250 cases treated.

A consideration of few anatomical principles are necessary for the proper understanding of the treatment of the forearm fractures. The two bones Radius and Ulna are bound together by the interosseous membrane. The attachment of pronators and supinators to these bones displace the fragments in different directions which makes the reduction of the fracture difficult. The fractures are divided as upper 1/3 fractures which occur between the attachments of supinator proximally and pronator teres distally, as such the upper fragment of Radius gets supinated and the lower fragment of Radius gets pronated. It is necessary to supinate and forearm to get correct alignment in the treatment of upper 1/3 fractures. The fractures of middle and lower 1/3 occur distal to the attachment of pronator

teres and so the upper fragment of Radius fixed in mid-pronation, as such the forearm must be fixed in mid-pronation. In the fractures at the lower end of Radius the fragments are both in pronation as such reduction is done in pronation. All these fractures must be immobilised in the same position after reduction.

Forearm fractures have to be considered in two parts, those occurring in children and those in adults. In children the bones are malleable and soft as such they bend easily without breaking completely producing the common Green-stick fracture. If the violence is great complete fractures occur with displacement of fragments similar to those in adults and the management of these fractures is same as in the case of adults which will be discussed separately.

Classification: Bohler has classified these fractures in the following way:- (1) Transverse of both bones 2) Oblique and comminuted fractures of both bones, 3) Fractures of lower 1/3 of Radius alone, 4) Fractures of Ulna lower 1/3, 5) Fractures of upper 1/3 of ulna with dislocation of the head of radius.

The above classification is satisfactory for purpose of consideration of treatment. Transverse fracture after reduction are stable and if correct reduction is achieved plaster fixation will retain the fragments in position. The reduction cannot be maintained in oblique fractures. In fractures of single bones reduction by manipulation is difficult to achieve.

Treatment: For proper treatment of fractures of forearm X-Ray pictures of the fracture is absolutely essential as it will show the displacement and the position of the fracture in relation to the muscle attachment.

1. GREENSTICK FRACTURES IN CHILDREN.

The Greenstick fractures in children which show angulation should be corrected and put in plaster for a period of 3-4 weeks. If the patient seeks advice after 2 or 3 days the angulation can not be corrected without completing the fracture and it should be done and immobilised in plaster for 6 to 8 weeks.

These are the fractures in which the bone-setter gets the credit for curing them without plaster and with some herbs. These fractures unite very easily, only thing that is required is the correction of deformity which is done by straightening the forearm and hence the credit.

2. COMPLETE FRACTURE WITH OVER-RIDDING OF FRAGMENTS IN CHILDREN.

These require manipulative reduction under anaesthesia, the over-ridding must be corrected by traction and counter traction. CORRECT ANATOMICAL ALIGNMENT IS DESIRABLE BUT NOT ESSENTIAL. If the fracture is more than four days old and if there is lot of edaema overridding of fragments can not be corrected by closed manipulation. However reduction may be tried by angulating the fragments. Blount has described these fragments in bayonet appostion (over-ridding). These fractures require immobilistion a little longer i.e., 3 to 4 months, at the end of which period the fracture unites without any difficulty. Blount has shown that complete moulding will occur in due course and the bones will be completely normal, by follow up. In no case open reduction should ever be done in these fractures-

3. TRANSVERSE FRACTURES WITH OVER-RIDDING OF FRAGMENTS IN ADULTS.

These are the most difficult fractures to treat. Manipulative reduction under anaesthesia must be tried in all cases. There are various methods of traction described such as fixed traction point from the wall or traction apparatus contained in the

Albee's table. Majority of these traction apparatus are not of much use. A trial for reduction should be made obtaining the help of trained assistants for traction. The best method of obtaining correct reduction is by angulating fragments by increasing the deformity and then straightening them so that fragments might get locked. Even 1/3 apposition if achieved is quite satisfactory and immobilistion in p.o.p. cast should be done and continued for a minimum period of 4 months. Majority of fractures unite without any difficulty.

These fractures after the original good reduction are prone to get redisplaced in plaster. In due course the muscles of forearm get wasted soon after the swelling disappears, and as such the plaster becomes loose, which gives space inside the plaster. Due to gravity there develops posterior angulation and some times displacement. This may be noted only after the plaster is removed to utter surprise of the practitioner. This can be easily prevented 1) by changing the cast once every month 2) by following Charnley's technique,"three point pressure" Plaster, in which the pressure is applied at site of fractures so that it produces a slight convexity and which forms one point of pressure and the other two points are either end of forearm, i.e. wrist and elbow. Because of the moulding of the plaster cast, it keeps the fragments in position without getting angulated. This I have followed in the treatment of my cases and I routinely do the moulding which prevented the angulation of the fragments.

If the reduction is not satisfactory and if the over-ridding of the fragments is not corrected what is to be done? The answer to the above question by CHARNLEY, WATSONI-JONES, COLONNA, BHOLER, HOWORTH, etc, is operative reduction. But all of them agree that operative reduction might result in either nonunion or delayed union in many cases. Normally a fracture takes about 3 to 4 months to unite, but after open reduction it takes at least 8 months to 2 years. The open operation strips the periosteum and the muscles around, which interferes with proper blood supply, hence the delay. The use of internal fixation material such as wires, plates, screws, and intramedullary nails also delay the union.

Many surgeons have attempted open reduction for achieving best result but to their utter disappointment most of them ended in nonunion. First of all there is lot of difficulty experienced in fixing of the fragments by plates and screws and even after fixing them correctly union has not occurred even after number of years. So some people tried bone-grafting which also ended in failure. I have seen many such bad results which have been ultimately left alone with psuedarthrosis. So then why open reduction? As far as possible better not to do it. The over ridding of fragments will cause shortening which shortening is negligible in the upper limb and it will not interfere with good function. The limitation of supination and pronation will occur equally in cases treated by open operation and by closed manipulation. It is impossible to crrectly assess the amount of rotation of the fragments even on operation table as such even though correct anatomical alignment is achieved the movements of pronation and supination will never be complete. Deformity and angulation can be avoided even without operation provided proper moulding is done after manipulation before the cast has set. Above all without operation the fracture unites within 5 months but after operation it will take at least 8 months to two years. This time factor will tell upon the patient economically and psycologically.

X-rays of few cases are shown here. In one case the fragments are in bayonet apposition and could not be corrected but the final x-ray shows complete and sound union. In another case where open reduc-

No. 1

X-Ray Picture of Rt. Forearm after closed manipulation showing the fragments fairly correct position.

No. 2

X-Ray Showing the fracture after 4 months showing the union of radius and nonunion of ulna, this subsequently united.

No. 3

X-Ray of left forearm which was treated by open reduction 5 years back shows union but angulation present markedly. This fracture took two years to unite and at the end it has united with angulation. So how is open reduction better than closed manipulation? The patient is able to get back to work after closed manipulation after 4 months whereas it took 2 years for the patient to get to his work after operation, and at the end still with deformity.

No. 5

X-Ray of the same fracture after one year showing complete union and moulding of the fragments. The patient was able to go to his work soon after the P.O.P. cast was removed i.e., after six months of original injury, this would not be possible if open reduction was done as it will take at least two years for the union to occur.

No. 4

X-Ray showing marked over ridding of the fragments of radius and ulna could not be reduced even after three manipulations and so it was left alone after applying P. O. P. cast for 6 months.

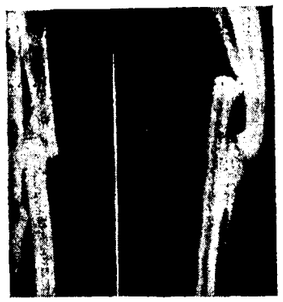
No. 6

X-Ray photo of forearm showing the fracture of radius and ulna with over-ridding of fragments.

No. 7

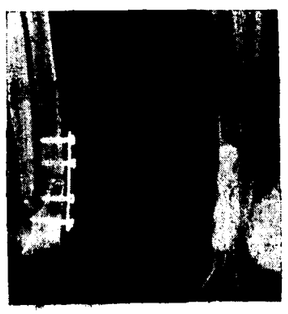
X-Ray of the same patient after 6 months showing complete consolidation and moulding of both bones. These are examples of natures moulding power. This clearly demonstrates that there is no need to do open reduction to get good union.

No. 8



X-Ray photo of a patient in whom open reduction was done by a reputed orthopaedic surgeon five years back still showing non union and pseudo-arthroses. This is the evil of operation.

No. 9



X-Ray of another patient showing open reduction with fixation by screws and plate after three years still no union has occurred. Another example of evil of operation.

No. 10

X-Ray of another patient where open reduction was done 15 years back in Poona still showing non union of radius and deformed forearm with bad function.

tion done by an experienced surgeon the fragments have not united even after several years. There are many examples of such cases but it will not be possible to publish all those X-rays for want of space.

R.P. Singh of Patna in a reiew of 207 cases of forearm fractures concluded that operative treatment of these fractures is not as satisfactory as closed manipulation.

In conclusion the following points to be remembered in the management of forearm fractures.

1. Trial to be made by all means to attain correct position by manipulation either by traction or by angulating the fragments. If sucessful well and good if not immobilise in bayonet apposition after moulding the plaster as described in text. Union will always occur within a period of 5 months.
2. Open reduction should not be under taken lighty without understanding the implications.
3. Open reduction should be done only in grossley deformed cases.
4. The deformities will not occur if the plaster is properly applied.

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AFTER CARE CENTRES FOR T. B. PATIENTS

A New Delhi announcement made on March 4, says, the Union Ministery of Health has approved proposals for the creation of new after-care and rehabilitation centres for T. B. patients as well as for the improvement of such centres where they already exist. The scheme will cover Delhi, Lucknow, Madras. Amargadh, Poona, Dhubulia, Hyderabad and Mysore.

The centre at Delhi will be started in association with the New Delhi T.B. Centre. A grant of Rs. 2,25,000 has been sanctioned to the T. B. Association of India for putting up buildings. The Association will also be in charge of the administration of the centre on behalf of the Union Government.

Non-recurring grants amounting to Rs. 1,38,188 have been sanctioned to the Governments of U.P. and West Bengal for setting up centres at Lucknow and Dhubulia. The centres are expected to be opened by the various State Governments during 1959-60.

Sixty sets of X-ray and laboratory equipment for the establishment/upgrading of T.B. clinics in various State have already been supplied. The equipment, the cost of which is estimated at Rs. 30 lakhs, has been distributed to the States of Bombay, Punjab, Delhi, Madhya Pradesh, Himachal Pradesh, Rajasthan, Madras, Bihar, West Bengal, Andhra Pradesh, Jammu & Kashmir, Uttar Pradesh, Kerala, Mysore and Assam. It is proposed to place an order for X-ray and laboratory equipment during 1958-59 for another 20 clinics.

The Ectopic Kidney

By

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INTRODUCTION:-The incidence of ectopic kidney is not very uncommon in surgical practice and according to Thomas and Barton (1936) this anomaly occurs in a fair number of individuals. While bylateral dystopia is rare unilateral dystopia is often met with in surgical practice. According to Butler (1951) in cases of dystopic kidney of the left side abnormalitis in the rotation of the midgut has been recorded. We recently operated on two cases of ectopic kidney which are reported below :-

CASE REPORTS :

Case No. 1 – B. S. 23, Hindu Male was admitted to the Nilratan Sircar Medical College Hospital on 12th December, 1957. He complained of presence of a lump of 15 days' duration in the right lower part of the abdomen. From time to time he experienced slight dull aching type of pain over the region of the lump. On examination, a freely mobile non-tender spherical lump about the size of a small melon was detected occupying the right lower quadrant of the umbilical region, practically the whole of the hypogastrium and the right iliac zone. The lump was very freely mobile in every direction and as the patient did not complain of any urinary symptoms, we made a provisional diagnosis of a greater omental cyst. On the 6th of January, the lump suddenly disappeared overnight and we reconsidered our provisional diagnosis and this time we diagnosed the case as "Hydronephrotic change in an ectopic kidney". Cystoscopy on 8-1-58 revealed a normal appearance of the bladder except for slight mucous protrution from the right ureteric orifice. Urine examination report was within normal limits while the bio-chemical examination of blood revealed a bloodurea of 28 mg. and N. P. N. 25.2 mg. per 100 cc. Intravenous pyelography revealed a functioning right sided hydronephrotic kidney while no excretion of dye could be seen on the left. (Fig. 1). Presently an attempt was made to pass ureteric catheters into the ureters through a cystoscope but the catheters could not be passed up for more than 2 cm. on either side. Perirenal insufflation with oxygen on 8-3-58 showed presence of a normal sized kidney on the right side while the left renal fossa was completely empty and filled up with gas- (Fig. 2). Subsequently, we attempted translumber aortography but as the X-Ray department had not had a casset changer, the dye passed down the aorta before the picture could be taken.

The patient was operated by me on 12th March and at operation a sack like kidney at least double the normal size was detected in the retroperitonial space on the sacral promontary on the right side of the prosterior abdominal wall, acutely kinking the right ureter and receiving an anomalous blood supply from the right internal iliac artery. The long axis of the kidney was almost vertical and its ureter after emerging from the substance of the kidney described two sharp bends and ended up in the bladder. (Fig. 3). There was not much difficulty in removing the kidney and the figures 4 and 5 will show its appearance as a whole and on section. The pelvis of the ureter the calyces major and minor were grossly disorted with presence of multiple small cysts on either poles of the kidney.

It was interesting to note that the cysts did not communicate with the calyceal system. Post Operative recovery was uneventful.

Case No. 2 S. B. women of 21 was admitted to Nilratan Sircar Medical College Hospital on 2 1-58 with symptoms of appendicular lump the duration of which according to the patient was of 5 days. She had slight amount of nausea and on admission she had a temperature of 100° F. The signs and symptoms suggested a typical attack of acute appendicities while the only urological symptom was slight degree of frequency. The patient was treated with antibiotics and the lump subsided to a considerable extent with great relief of symptoms. The patient was discharged on 7-2-58 and was advised to report in four weeks time. She however reported on 3-4-58 and was again admitted to the ward. On examination we found that the lump in the right iliac fossa was still there. It was slightly tender and mobile to some extent in every direction. We revised our diagnosis in favour of an ectopic kidney. Routine examination of urine and blood did not reveal anything abnormal. Cystoscopy however revealed a delayed efflux from the right side. Attempt to negotiate a catheter into the right ureter failed as it could not be pushed up for more than 2 cm. Intravenous pyelography unfortunately could not be done due to some unavoidable reasons. She was operated on 26-4-58 by me and at operation, we found an ectopic kidney situated in the right iliac fossa. The left kidney was normal in size and was occuping a normal position in the left renal fossa. The right kidney was receiving an anomalous blood supply. Its upper pole was receiving blood supply from the right internal iliac and also from the left internal iliac arteries. A direct branch entered the hilum of the kidney behind the ureter from the left internal iliac artery. The kidney as a whole was slightly smaller than the normal size and oval in shape (Fig. 6).

The cut section showed gross distortion of the calyceal pattern and the pelvis of the ureter instead of being situated in the middle was situated at a higher level (Fig. 7). The axis of the kidney was almost vertical. Post operative recovery was uneventful and the patient was discharged on 7-5-58.

DISCUSSION: It is to be noted that in the first case, the ectopic kidney was mistaken for a greater omental cyst while the second case was mistaken for an appendicular lump. In both the cases, no abnormalities of midgut rotation (Butler 1951) could be seen. According to Forbes (1945) the axis of the ectopic kidney changed from a vertical to a more horizontal position when the same is situated in a lower position but both the cases under report did not show any deviation from the normal axis. It has been remarked by Forbes (1945) that it is most unusual for an ectopic kidney to be supplied by only one renal artery. In our first case the kidney was supplied by only one renal artery which came from the right internal iliac but in our second case the kidney had multiple sources of blood supply. Ranshoff (1930) described a case of volvulus of a dystopic kidney situated in the pelvis. The volvulus took place round a narrow mesentery. We believe, the early symptoms in our case No. 1 which simulated a greater omental cyst was due to partial volvulus round its pedicle. With untwisting of the volvulus the lump disappeared in a matter of hours. In the first case the cystoscopic finding of potrusion of the mucosa through the right ureteric orifice and slight degree of hydro-nephrotic change were obviously due to the pressure exerted by the ectopic kidney on the right ureter (Fig. 3).

ACKNOWLEDGEMENT: My thanks are due to Dr. A. K. Datta Gupta, Principal-Superintendent of the Nilratan Sircar Medical College Hospital for kindly permitting me to publish these cases.

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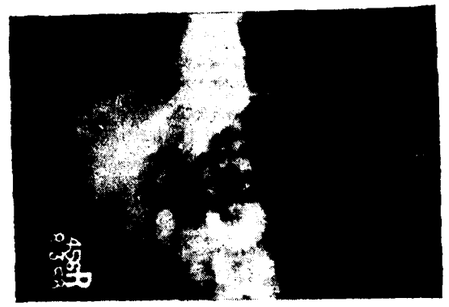
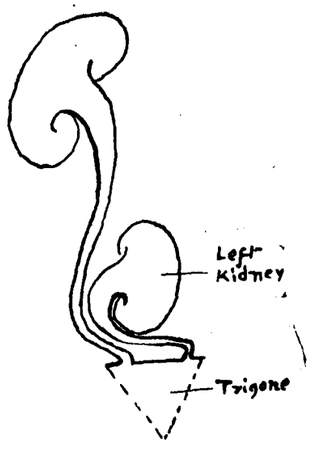
I V P showing no excretion of dye on the left side and hydronephrotic change on the right



Perirenal insufflation with oxygen has outlined the right kidney while the left side is completely filled up with gas indicating absence of kidney.



Showing the position of the ectopic left kidney. Note the pressure caused on the right ureter and the sharp bends described by the ureter of the ectopic kidney.

Section of the kidney showing gross distortion of the calyceal pattern with cystic changes at either poles.

Ectopic right kidney of case No. 2 showing multiple sources of blood supply.

Section of the kidney showing distortion of the calyceal pattern.

Thyroid Hormone Therapy

By

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An adequate supply of thyroid hormone is not absolutely essential to life, but it is necessary for normal growth and development and for the maintenance of good health. The function of the thyroid gland is to extract iodine from the blood and bind it to protein, thus forming thyroglobulin. This is stored in the gland and, according to bodily demands, thyroxine is liberated by enzyme action and discharged into the bloodstream. Thyroxine enters the body cells and, by further enzyme action, is deiodinated to triiodothyronine which is thus the ultimate thyroid product.

The release of thyroxine from the thyroid gland into the bloodstream is governed by T. S. H. (thyroid-stimulating hormone or thyrotrophin) which is produced by the anterior lobe of the pituitary. This process is variable and reciprocal in that a low blood level of thyroxine will stimulate T. S. H. output and a high level will diminish it. The reason why thyroid substances are active when given by mouth is probably because the gland was not originally endocrine, but secreted directly into the mouth. Thus, in amphioxus a thyroid-like organ communicates directly with the alimentary tube, whilst in man the thyroglossal duct and foramen caecum of the tongue are vestiges of a similar system which occasionally persist as thyroglossal cysts or a lingual thyroid. Thyroid substances therefore have an advantage over many other endocrine gland hormones by being active when given orally, but this very simplicity of administration should not encourage indiscriminate therapy.

DEVELOPMENT OF THYROID THERAPY

Thyroid :-Some eighty years ago - in 1873- Sir William Gull, physician to Guy's Hospital, described myxoedema under the title of 'A cretinoid state supervening in adult life in women'. He referred to the article by Hilton Fagge, who had described cretinism in 1871 and had speculated upon the possibility of the condition arising in adult life. Gull evidently took his cue from this report and suggested thyroid disease as the cause of the adult disorder. By thus drawing attention to the clinical evidence favouring thyroid deficiency in myxoedema Gull stimulated others to lay the foundations of clinical endocrinology by taking the first steps in thyroid replacement therapy. Within a few years thyroid grafting operations had been attempted and injections of sheep's thyroid had been given before it was realised that raw or lightly cooked sheep's thyroid was effective by mouth. Finally, Murray in 1891, initiated the first successful treatment of a case of myxoedema with a glycerinated extract of sheep's thyroid. Shortly afterwards dried thyroid, or thyroideum siccum, was produced and this remains the standard preparation in the BRITISH PHARMACOPOEIA today.

Thyroxine :—The active principle in thyroid extract was isolated by Kendall in 1915 and named thyroxine. This was synthesized by Harrington and Barger in 1927 in the racemic form and later work showed that the laevorotatory form

(l-thyroxine) was some 8 to 10 times more potent than d-thyroxine which had little activity.

Triiodothyromine: Doubts had always existed, however, as to whether thyroxine was the true or ultimate active thyroid substance. Thus it was relatively insoluble, there was an appreciable time-lag after administration before its action became manifest, and the activity of a known quantity of thyroid extract appeared to exceed that of its thyroxine content. It was not until 1952 that Gross and Pitt-Rivers clarified the position by isolating from human plasma a substance named triiodothyronine. This has since been synthesized and shown to be some three times as potent as thyroxine. It appears that thyroxine (tetraiodothyronine) is deiodinated in the body cells to triodothyronine which exerts the physiological action of thyroid hormone.

Thyroid therapy has thus advanced a long way in eighty years, owing to the achievements of research workers in isolating and synthesizing the active principles. We now have thyroid, thyroxine and triiodothyronine for clinical use. Each has the same action, but differs from the others in potency and speed of action. This must not imply that the newest and most potent is therefore better than the older and slower-acting substances. Indeed, like motor cars, the latest and fastest models are not necessarily the best and safest for everyday use.

PHYSIOLOGICAL CHARACTERISTICS OF THYROID HORMONE.

Thyroid hormone, in brief, is responsible for maintaining the metabolic rate of bodily processes and it is largely concerned with proper growth and development. It acts directly upon tissue cells and regulates their oxidation processes and so their oxygen consumption. Its action upon growth is probably concerned more with differentiation of tissues than with actual increase in size. Its effect is ultimately exerted with that of the pituitary growth hormone, but is probably independent of it. Thyroid hormone influences carbohydrate metabolism by promoting the release of glycogen from the liver and accelerating the oxidation of carbohydrate by the tissues. Apart from the reciprocal relationship with the anterior pituitary whereby the output of T.S.H. is balanced against the circulating level of thyroid hormone, there is no intimate or direct linkage with other endocrine glands if we except the effects mediated by alterations in the general level of bodily metabolism.

The physiological effects of thyroid, thyroxine and triiodothyronine differ for practical purposes only in the speed and intensity of their actions. If the crude thyroid substance is given by mouth the body has to break it down ultimately to triiodothyronine before an effect is produced. But if thyroxine, or triiodothyronine itself, is given the effect is produced more quickly, and with a correspondingly smaller dose.

THERAPEUTIC CHARACTERISTICS OF THYROID HORMONE.

Thyroid B.P. (syn. Thyroideum siccum, dry thyroid extract, thyroid gland) is prepared from the thyroids of oxen, sheep or pigs by drying, extraction of fat and powdering. The residue is mixed with sufficient lactose to bring it to the pharmacopoeial standard of 0.1 per cent of iodine in combination as thyroxine. The powder, or tablets made from it, must be kept cool and dry. The official dose is 1/2 to 4 grains (30 to 250 mg) daily. A proprietary preparation is "elityran" (Bayer) which contains 0.09 mg of thyroxine, partly synthetic and partly as thyroid extract. Two tablets are approximately equal to 3 grains (0.2 g) of thyroid B.P.

Thyroxine: There is no official pharmacopoeial preparation. The synthetic substance contains 65 per cent of iodine. It is available as "eltroxin" (Glaxo) in the form of l-thyroxine sodium. The dose is 0.05 to 0.2 mg which is equivalent to approximately 1/2 to 1 grain (30 to 60 mg) of thyroid. Thyroxine has certain advantages over thyroid. It is a standard substance of constant composition and potency in any country. It does not deteriorate on keeping and has been shown to have as satisfactory therapeutic properties as thyroid (Hart and Maclagan. 1950).

Triiodothyromine: There is no pharmacopoeial preparation. It is available as tablets of "tertroxin" (Glaxo) or Cynomel' (Smith, Kline and French). The dose is 5 to 25 micrograms. Its actions are the same as those of thyroid and thyroxine but more rapid and transient. A rise in the basal metabolic rate is produced in a few hours as compared with several days for thyroid or thyroxine. It has been found to be therapeutically effective in the initial treatment of myxoedema (Gross et al., 1952) and is likely to have its main use in cases of myxoedema coma in which rapid action is desirable. But the very speed of action is in itself a danger because of the risk of inducing heart failure.

The comparative retail costs of the preparations mentioned are:—

Preparation	Dose	Cost
Thyroid, B.P.	1/2 Grain (30 mg)	1s 3d per 100 Tab
Eltroxin	0.05 mg	2s 9d ,, ,, ,,
Elityran	0.09 mg	9s 0d ,, ,, ,,
Tertoxin	5.0 mcg.	5s 4d ,, ,, ,,
Cynomel	5.0 mcg	7s 11d ,, ,, ,,

INDICATIONS FOR THYROID HORMONE THERAPY.

It should be axiomatic that thyroid therapy is replacement therapy and that the indication for it is hypothyroidism. If clinical evidence is not conclusive, the diagnosis should first be established by the various tests for thyroid function before treatment is started. Apart from hypothyroidism in its various forms, there are a few conditions in which thyroid therapy may justifiably be used in order to reduce or suppress the pituitary output of T.S.H. These include cases of thyrotoxicosis with hyperexophthalmos or exophthalmic ophthalmoplegia and some cases of simple goitre. Thyroid therapy is also given without any sound justification, in male infertility, primary amenorrhoea with or without obesity, and in obesity itself. Triiodothyronine has recently been used for the treatment of a newly described syndrome of "non-myxoedematous hypometabolism".

HYPOTHYROIDISM

Cretinism: The sooner cretinism is diagnosed and thyroid therapy started the better is the outlook for normal physical development. But mental development is less predictable for it is now recognised that in some cases the mental defect is congenital and not the result of cretinism so that it does not respond to thyroid.

Treatment consists in the lifelong administration of thyroid, but the initial dose must be carefully controlled as infants are very sensitive to it. One-eighth of a grain (8 mg) of thyroid daily or one-quarter of a grain (16 mg) on alternate days, should be given for the first week, increasing cautiously by the same amount at weekly intervals until the optimum dose is reached.

Clinically, the state of the infant's bowels is as good a guide as any. Continuing constipation indicates the need for more thyroid, and diarrhoea or looseness for less. It may well be necessary to check the dose by estimations of the serum cholesterol (normal 150 to 220 mg per 100 ml) which is raised while hypothyroidism persists. Schlesinger and Fisher (1951) however, emphasize that serial measurements of the height and x-rays of the wrist are also desirable in order to guard against over-dosage with thyroid. This is because thyroid therapy, while stimulating growth, also encourages closure of the epiphyses. If too much thyroid is given for too long the epiphyses will close prematurely and so bring growth to a standstill.

As the child gets older it will be necessary to increase the dose of thyroid and progress should be checked at six monthly intervals. Once a satisfactory dose has been established for the time being, a change can be made to thyroxine in equivalent dosage if desired but apart from the advantages already mentioned, there are no special indications.

Juvenile Myxoedema: Here the situation is rather simpler than in cretinism because the child will have passed normally through the early years of life and the mental status will be apparent. Investigations are also easier because the child may well be old enough to co-operate in basal metabolism estimations or radioiodine uptake tests. Treatment will be on the same lines as for cretinism and with the same precautions. Thus, for a child of, say, ten years the initial dose will be one-quarter of a grain (16 mg) of thyroid, or 0.025 mg of thyroxine, daily for a week with weekly increments of that amount up to the maintenance dose.

Adult Myxoedema: For present purposes this includes primary myxoedema and secondary myxoedema resulting from Simmond's disease (panhypopituitarism) or from Hashimoto's thyroiditis (hymphadenoid goitre).

The treatment is by thyroid or thyroxine, and the full daily replacement amount is usually about 3 grains (0.2 g) of thyroid or 0.3 mg of thyroxine in divided doses. It is particularly important not to give too much of either in the early stages for fear of inducing heart failure or anginal pain from sudden and undue raising of the heart rate. Initial doses should be half a grain (30 mg) of thyroid or 0.05 mg of thyroxine, once daily for the first week, twice daily for the second week, three times daily for the next two weeks and then four times daily. The case should then be reviewed before proceeding to daily doses above 2 grains (0.12 g) of thyroid, or 0.2 mg of thyroxine. Any tendency to palpitations, nervousness or looseness of the bowels is an indication to reduce the dose by half a grain (30 mg) of thyroid, or the equivalent of thyroxine, daily until the symptoms disappear.

Myxoedema Coma:-In this dangerous state the therapeutic problem is one of urgency. The patient is comatose or nearly so, hypothermic, and the bodily processes are at such a low tempo that life is only just sustained. The administration of thyroid by mouth or of thyroxine by injection takes at least a week to show any manifest action because of the extremely sluggish circulation and minimal metabolic activity. Thus triiodothyronine is indicated because of its rapid action and gives ground for hope of a better prognosis than hitherto for myxoedema coma.

The condition is uncommon and few reports of the use of triiodothyronine have yet appeared in this country. But it seems reasonable to suggest 20 micrograms by intramuscular injection six-hourly until consciousness is regained, when the frequency may be reduced. But it must be remembered that in changing over to thyroid or thyroxine there will be a time lag of several days before their action is apparent. It will therefore be necessary to keep on with triiodothyronine after the patient is able to swallow tablets but to be prepared to stop it promptly when the effect of the oral hormone commences. A close watch must be kept upon the pulse rate and body temperature–both of which will rise as improvement takes place—and any signs of tachycardia or cardiac embarrassment will call for reduction in the dose of hormone.

THYROTOXICOSIS WITH HYPEREXOPHTHALMOS OR EX-OPHTHALMIC OPHTHALMOPLEGIA

In some cases of thyrotoxicosis there is a greater degree of exophthalmos than would be expected from the severity of the toxicity. This may exist before any treatment or develop afterwords with or without opthalmoplegia. It has been assumed, but never conclusively proved, that exophthalmos is caused by an excessive output of pituitary T. S. H. or some other more specific exophthalmos-producing pituitary hormone. In view of this, some authorities combine antithyroid drug therapy with thyroxine in the hope that the latter will replace the normal thyroid output and so suppress or reduce the secretion of pituitary T. S. H. Russell Fraser and Wilkinson (1953) recommended the addition of 0.1 mg of thyroxine to 50 mg of methylthiouracil thrice daily. Similarly, after thyroidectomy in exophthalmic patients the administration of thyroid or thyroxine is started immediately by some surgeons in order to forestall any possible hypothyroidism, which might make the exophthalmos worse by stimulating T. S. H. output.

SIMPLE GOITRE

It is generally conceded that a simple goitre is ultimately due to iodine deficiency. This may be brought about absolute dietary deficiency, by relative deficiency when bodily demands exceed the supply, or by a variety of possible goitrogenic factors, which interfere with the proper utilization of iodine by the thyroid. As Spence (1952) pointed out, iodine deficiency leads to a diminished output of thyroxine and this stimulates T. S. H. output with resulting hyperplasia and enlargement of the thyroid. Some authorities therefore give thyroid in order to supply the deficit and so reduce T. S. H. output and the size of the goitre. This treatment is quite safe with a smooth simple goitre such as a recent puberty Goitre in a girl. But it is not so safe in a simple goitre which has been present for some years and in which, as is almost inevitable, nodular change has taken place. This is because some nodules, especially the apparently solitary ones, are not above suspicion of malignancy and others may be degenerate and not amenable to reduction in size by thyroid therapy. On the whole, simple nodular goitres are better removed surgically if any treatment is indicated. The simple smooth goitres can be treated by ½ to 1 grain (30 to 60 mg) of thyroid or the equivalent of thyroxine daily, but it is better not to exceed this dose as there is a risk of inducing thyrotoxicosis.

MALE INFERTILITY

In the past, thyroid therapy has been recommended for male infertility; that is to say, for improving the quality of a sub-standard seminal fluid. Since the only criterion of success is pregnency in the female partner, and since there is such a multiplicity of possible factors involved in this, it is extremely difficult to asses the efficacy of thyroid or any other therapy. It is perfectly true that a man suffering from myxoedema may have poor quality seminal fluid as a result–although this is by no means certain–but he is very likely to have diminished libido or impotence and thyroid therapy will probably do more good by correcting the latter. But in a man without clinical evidence of hypothyroidism and with a normal libido it is most unlikely

that thyroid therapy will improve the quality of the seminal fluid and it certainly should not be given for the sake of "doing something". Swyer (1956) has summarized the evidence on the subject and deplores the indiscriminate use of thyroid. Male infertility should first be properly investigated and testicular biopsy be carried out if necessary. Rational treatment by gonadotrophins or testosterone is far more likely to be effective than thyroid.

PRIMARY AMENORRHOEA

The combination of primary amenorrhoea with obesity in girls at the expected time of puberty is not at all uncommon. The possibility of hypothyroidism is often raised, probably because of the erroneous but widespread belief that hypothyroidism causes obesity. There certainly appears to be some relationship between amenorrhoea and either gross obesity or gross wasting, but its nature is unknown. Thus, the periods sometimes start in formerly obese girls after dieting has brought their weight down to normal for their age but even then it is impossible to say that the periods would not have appeared in any case. In anorexia nervosa amenorrhoea is a cardinal spmptom which accompanies the loss of weight, and reappearance of the periods is an obligatory eriterion of cure. Whatever may be the relationship between gross abnormalities of body weight and amenorrhoea, there is no evidence—apart from frank juvenile myxoedema—that the thyroid plays any part in it.

The temptation to use thyriod in girls with amenorrhoea whether obese or notshould be resisted because it is correct treatment for neither amenorrhoea nor obesity.

OBESITY

The use of thyroid therapy in obesity is unfortunately all too common and seems to be based on several quite fallacious beliefs. The first is that hypothyroidism causes obesity; that is to say, increase of weight from excessive fat. This is incorrect because the patient with myxoedema is overweight due to bloating with fluid. When thyroid is given this is released and excreted with fluid. When thyroid is given this is released and excreted with resulting fall in body weight—but not from loss of fat. In fact, patients with myxoedema usually lose their appetite and it sometimes happens that thyroid therapy stimulates it, so that they may put on more weight by eating than they lose by treatment.

A second fallacy arise from the fact that the basal metabolic rate is apparently lowered in cases of gross obesity. This is because the surface area of the body is so increased by the inert fatty covering that it no longer bears the average relationship to height and weight upon which tables for calculating surface area are based. The effect of this discrepancy is to vitiate the mathematical calculations upon which the basal metabolism result is founded, and a falsely low figure is obtained. A third fallacy is that thyroid therapy will stimulate the metabolism and so miraculously burn up the many pounds of fat which surround an obese individual. In practice it would be quite impossible to do this without giving for a long time a huge dose of thyroid which could never be tolerated.

In my experience, thyroid either makes no difference, even in surprisingly large doses of up to 4 or 5 grains (0.25 to 0.3 g) daily, or it stimulates the appetite and makes matters worse. It can be categorically, stated that thyroid therapy has no place in the treatment of simple obesity. The proper treatment is dieting supplemented, if need be, by dexamphetamine which will reduce the appetite.

NON-MYXOEDEMATOUS HYPOMETABOLISM

This syndrome was reported by Kurland et al (1955) from the United States. In their cases the basal metabolic rate was slow, but thyroid function appeared to be normal according to radioiodine studies and serum cholesterol estimations. There was no response to thyroid extract or to thyroxine, but triiodothyronine both relieved symptoms and raised the basal metabolic rate. Similar cases have since been reported, but the underlying defect has not yet been elucidated.

The symptoms of which these patients complained included lassitude, nervous irritability, headache, vague limb pains, intolerance of cold, menstrual irregularity in women and diminished sexual activity in men. Unfortunately, these are common symptoms and may be present in a wide variety of conditions, both organic and functional. They have been widely publisized in advertising material to doctors concerning the indications for the use of triiodothyronine, and this has been the subject of leading articles in the British Medical Journal (September 22. 1956) and the Lancet (October 20, 1956). In both articles warnings were given against the indiscriminate use of triiodothyronine for patients with the above symptoms. It cannot be too strongly emphasized that triodothyronine is an extremely potent substance which should not be given to any patient unless clearly indicated after full investigation.

CONCLUSIONS

The main object of this article has been to describe the characteristics of thyroid substances and to emphasize the legitimate indications for their use. What has been said applies to the present, but the future may well hold in store both a wider range of thyroid substances and a wider scope for their use. Already several synthetic modifications of thyroxine have been produced, such as triiodothyroacetic acid (triac) and tetraiodothyroacetic acid (tetrac) which have shown selective ability to influence the basal metabolic rate or the serum cholesterol level separately. Much more research will be required before their therapeutic indications can be defined, but they are mentioned to show that the future of thyroid therapy is likely to be as exciting as its past.

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Book Section

ANNOUNCEMENT

We are proud to announce that the 'Mediscope' dedicated to serve the Indian Medical Profession, has ventured to publish 'Text Books' for Medical Students & Doctors, thus affording our regular subscribers to possess 'Text Books' *without* paying specially for them.

Eminent authorities—Professors, Lecturers and Specialists—in Medicine and Surgery have graciously come forward to have their text books published in the 'Mediscope' serially, each author taking about eight to sixteen pages in each issue until the Text Book is completed.

From Feb. '59 issue the 'Mediscope' has commenced the valuable work of Dr. R. J. Maneksha, F.R.C.S. (Eng), on "PLASTIC SURGERY FOR MEDICAL STUDENTS & DOCTORS". From April '59 issue we have commenced publishing, concurrently, the text book on "RETINAL DETACHMENT & ITS MODERN TREATMENT" by Dr. J. M. Pahwa, M.B., B.S., D. O., Z. O, (Vienna) M. S., Senior Ophthalmic Surgeon, Eye Hospital, Sitapur. Ofcourse the Text Books will be in addition to the usual features of Articles, Case Reports, Gleanings, Notes & News etc.

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Writing of a 'Text Book' suitable for the Universities is the hardest job, requiring the full time attention of an author at the sacrifice of his practice, not to mention of the financial risk.

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Although the talent is not lacking in our country to write Text Books suitable to our Universities, many an authority on Medicine & Surgery, under whose coaching the Indian Medical Profession has today grown to a lakh and odd strong, have not ventured-rightly, to indulge in the highly speculative art of writing text books. Consequently this great Nation still depends on the resources of our brethern abroad to feed us with text books. It certainly does not stand in good stead of our National Prestige.

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We fervently hope that the Indian Medical Profession will appreciate our aim—and make our efforts a success.

—*Editor.*

BOOK SECTION-I

(Contd.)

PLASTIC SURGERY
FOR
MEDICAL STUDENTS
AND
DOCTORS

BY

Dr. R. J. MANEKSHA, F.R.C.S. (Eng.)
SPECIALIST IN PLASTIC SURGERY

B. Depression in the Midsection:—

1. When the septal support is present—saddle deformity may be due to various cases like prominence of the tip of the nose or of the bridge. This is corrected by reducing the tip or the bridge. In simple cases upturning of the cut ends of the upper lateral cartilages over the septum and suturing together is advisable, the mucosal lining is left intact. Shortening of the nose may be done at the same time.

A build up of the midsection could also be done with a cartilage implant from septum, ear, or lower lateral cartilage hence avoiding a second major operation elsewhere on the chest, etc. Homogenous grafting may be done if facilities are available.

Narrowing of the nose by resection at the nostril helps to build up the defect when there is "Negroid" type of nose with wide alar.

2. When septal support is absent—the first consideration is whether the bridge of the nose requires resetting for excessive width and whether alar resection is necessary. If the nasal bridge requires resetting then this preliminary osteoplastic procedure is done and the dorsal support added after two to three months. The alar narrowing can be done at any time. If the bridge is narrow from the start, the operation is completed in one stage by adding the dorsal support.

C. In the type II of Joseph i.e., the complex saddle nose with tip in normal position but loss of the overlying skin it is necessary to replace the nose with healthy skin before adding dorsal support. A free graft of skin will not take on account of the poor bed hence a pedicle graft from

forehead or elsewhere is necessary. The dorsal support is later on added.

In type III where there is shortening of the nose and the tip of the nose is displaced, there is scarring and loss of mucosa. The preliminary and important step is to replace the tip of the nose to its normal position and also to have sufficient normal mucosal lining. The lining can be provided in various ways by

(1) Interned local flaps of skin.

(2) Skin flap from the arm via the columella.

(3) Free skin graft held in position by a mould—this is done by approaching the nasal cavities through the fornix of the upper lip and making an oronasal fistula till such time as the graft has stabilised. The mould is held in position by a splint attached to upper teeth.

After the mucosal lining is provided then the dorsal support is added after three to six months.

In a case of specific infection it is advisable that all ulcerations inside the nose should heal up with treatment although the blood serology may not become negative.

How is the dorsal support provided ?

Technical details regarding the Dorsal support:-Replacement of the defect in saddle nose has been attempted from times immemorial. All types of foreign bodies like paraffin, to steel rods etc., have been tried. Majority of these have proved a failure and ultimately extruded at a near or distant future. The ideal substance is autogenous bone taken from the ilium.

Autogenous cartilage has many advocates as it is easily shaped. It has an unpredictable tendency to warp after

insertion leading to most embarrassing situation and often removal of the same. Preserved homogenous cartilage and bovine cartilage are free from this disadvantage but their absorption rate is higher, susceptibility to infection is also greater. Autogenous cartilage is difficult to get in young children in sufficient quantity whilst in old age it may be calcified.

What are the different shapes of the grafts ?

Shape of the Grafts—A L shaped graft either in one piece or in two is the most commonly used. When the tip of the nose requires elevation the L shaped graft is essential. When applied in two pieces it is liable to displacement.

B. Dorsal strut graft—This is useful when the tip of the nose does not require further elevation but the depression is in the region of the bridge or midsegment. Its main disadvantage is that if not properly fixed it is liable to ricochet. To prevent this complication it requires a good bony platform near the bridge of the nose. The shape of this dorsal strut varies according to the defect present.

C. Crossbar transplant—in cases of extreme retrusion of the lower nasal elements (dished in appearance) on the maxillae a crossbar transplant is necessary from one alar to the other passing underneath the columella. Tear of nasal or oral mucosa must be carefully avoided. An acute columello-lip angle is also corrected by this graft.

What are the essential requirements of grafts?

An ideal graft should be a permanent one. It must not be mobile and for this it requires a very good fit at the glabella. The graft should reach the uppermost point of the glabella and not start at any point below it. In a L shaped

graft the lower end is fixed to the maxillary spine. In a successful take the graft requires a good bony bed at the bridge of the nose and a cartilaginous one lower down. Haemostasis at the time of grafting should be perfect.

What are the incisions used in these operations ?

In the majority of cases the midline Columellar incision has many advocates. It requires a two layer closure of the deeper skin layers. The winged incision lifting up the whole columella may also give a good exposure and is often invisible after healing. If only a dorsal strut is to be introduced then an intercartilaginous incision on one side is enough, for good approach—it avoids any external scar.

What is the post-operative care?

It is very important that the graft be immobilised during the early period. This is done by intranasal packing and splinting the nose from outside. The intranasal packs can be changed on the fourth or the fifth day. The external splintage (by plaster of paris cast) is retained for ten to fourteen days. Any trauma to the nose is carefully avoided later on.

What are the likely complications ?

Amongst the early complications haemorrhage and sepsis are outstanding. Haemorrhage is avoided by careful intra and extranasal dressing. Collection of blood should be evacuated early.

Advent of sepsis suggests a slip in the aseptic technique during operation. A haematoma could easily get infected. Breach in nasal mucosa unnoticed at the time of grafting may infect the graft. Imperfect healing of the midcolumellar

incision with exposure of the bone graft leads to sepsis of the graft. Sepsis of the graft once it has occurred is very difficult to control and ultimately the graft has to be removed.

Amongst the late complications—Delayed extrusion of the graft is uncommon but has been noticed when foreign body implants have been used (over 50% of cases). The author has given up the use of acrylic implant in the nose.

Late absorption of the graft—this is noticed when homogenous or bovine cartilage is used. With autogenous cartilage the tendency is much less. Autogenous bone absorbs the least and hence is mostly used.

FOREHEAD OR INDIAN RHINOPLASTY

(1) What is Indian or forehead rhinoplasty and why is it so called?

Forehead rhinoplasty originated in India many years ago before the introduction of modern advances of anaesthesia. Indian surgeons knew this art which then spread to the Mediteranian countries and arm rhinoplasty is called the Italian Method.

What are the indications to do a forehead rhinoplasty ?

It is mostly used in cases of partial or complete loss of the nose. This most often happens in India as a type of punishment dealt out by jealous husbands on unfaithful wives or in cases of vengeance amongst men.

What are the main advantages of forehead rhinoplasty ?

(1) Nose made from the skin of the face has the same colour and texture of the lost nose skin—taken from arm pedicle the colour generally differs and it looks like a patch on the nose.

(2) Operation is not very difficult and could be done under local anaesthesia also.

What are the disadvantages ?

Its main disadvantage is scarring of the forehead. This can be avoided by a simple trick—the triangular raw area is closed up by a rotation advancement flap from the fronto-parieto-temporal region. The small defect in the temporal region is skin grafted. The skin grafted area is well hidden by the surrounding hair.

How is the operation done?

1st operation :-Under general anaesthesia the marked out flap from the fore-head is elevated deriving its blood supply from supraorbital artery. The skin on the remaining part of the nose was reflected down to form the lining of the lost part. A large size rotation advancement flap is cut on the fronto-parieto temporal region. All the three flaps are then stitched in their new positions. A small skin graft from the arm is taken to fill up the defect in the temporal region. The part is dressed. Wait for 3 weeks.

2nd operation :-The pedicle is separated from the frontal attachment. The top part of the new nose is dissected to about the middle of the nose. The skin is defatted as low down as possible on the nose but not dangering its blood

supply. The redundant skin is excised and part stitched. The skin is closed in frontal area. (In some cases the frontal defect at the first operation skin is grafted and during the second operation all the available skin is again replaced on the forehead to minimise the area of grafted forehead or also that graft is now removed and a small flap rotated from the frontal area.)

Retinal Detachment
AND
Its Modern Treatment

BY
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CHAPTER VII

Defects of the Ear

* * *

What is the normal structure of the ear ?

The salient points of the anatomy of the normal ear consists of a thin piece of cartilage surrounded on both sides by skin but without the presence of any subcutaneous tissue. The cartilage thrown into varigated folds of the most intricate nature. The outermost margin of cartilage is known as the " Helix ". Parallel to the helix and a couple of millimeters inwards is another fold known as the " Anti-helix " which bifurcates superiorly forming the superior and inferior crus of the antibelix. Separating the helix from the antihelix is the area known as the " scapha ". The depression between the antihelix at the back, and the piece of cartilage known as the " tragus " is the depression known as the " Concha ". The Concha forms an angle with the mastoid bone which is approximately 90° and is known as the " Cephelo Conchal angle ". The Concha forms a second angle with the scapha due to the formation of the anti-helix and is approximately 90° again and is known as the Scapho-Conchal angle hence we can see that the ear is approximately parallel to the mastoid bone. Variation of 15° of these angles is within normal limits.

Does the shape of the ear alter with age ?

No. Not very much.

CHAPTER II.

Aetiology

* * *

The aetiology of idiopathic retinal detachment is a complex and as yet not fully understood. The literature on this subject is enormous and a study of it shows that many who have theorised on the subject have erred in their attempt to include all types of detachments under one particular heading. As said before this should not be the case, because the condition forms an incidence in many pathological processes. Before going on to the actual mechanism producing detachment or its pathogensis etc., it will be of interest and value to consider pre-disposing factors in its aetiology. I herewith give the table for my 100 unselected cases admitted in Sitapur Eye Hospital for nearly a period of 5 years.

100 CASES

Male	=	74 Cases
Female	=	26 Cases
Bilateral.	=	11 Cases
Family History.	=	1 Case
Aphakia.	=	18 Cases

Age Group.

10-20 Years.	=	3 Cases
21-30 ,,	=	12 Cases
31-40 ,,	=	16 Cases
41-50 ,,	=	37 Cases

Age Group.

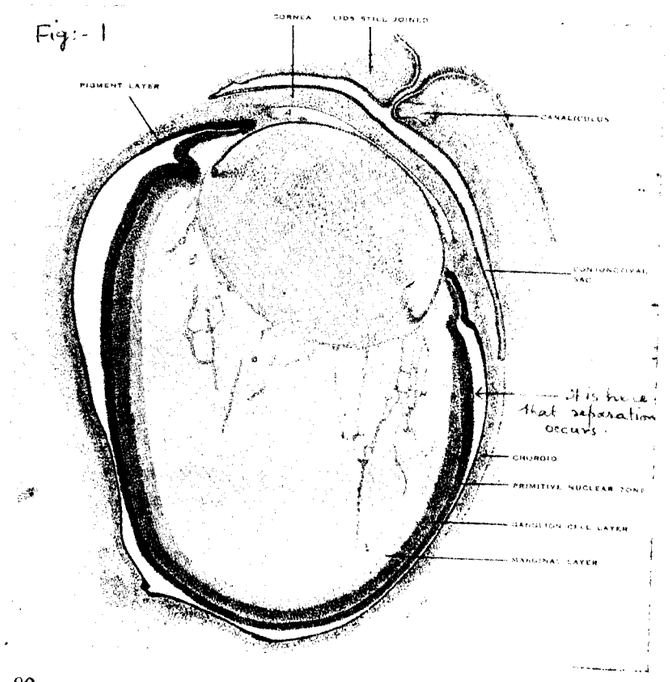
51-60	,,	=	24 Cases
61-70	,,	=	6 Cases
More than	70	=	3 Cases

MYOPIA.
43 Cases.

1- 4	Dioptres	=	12 Cases
5-10	,,	=	10 ,,
10-14	,,	=	11 ,,
15-20	,,	=	10 ,,

(Fig. 1)

Fig:- 1



PRE-DISPOSING FACTORS

1. Race:

The marked preponderance among Jews is interesting. Gonin found that in his cases it occurred ten times more frequently in this race than in others. It is less frequent in Indians because of less incidence of high myopia.

2. Sex:

The influence of sex is marked, male being affected in about a 2/3rd majority, a preponderance which probably depends largely but not exclusively on the incidence of trauma. The figures given by various surgeons are Stallard 62% Arruga 60% and Shapland 61%.

These observations led Prof. Weve to the hypothesis that the blood vessels of the retina of men are more vulnerable than those of women, but perhaps there is also a relation with the following:

The ratio between the blood-pressure in the arteria centralis retina and that in the arteria brachialis according to Bailliart is normally 0.45%. This ratio is higher for men than for women. Dubois found men 0.48 for women 0.45.

3. Age:

Detachment of the retina is very rarely congenital and most of the cases which have been published show that it is due to major trauma at birth followed by haemorrhage, gross intra-uterine inflammation or in association with congenital deformities. Detachment due to congenital retinal fold (Ablatio falciformis congenita) and Retrolental fibroplasia must be kept in mind. Again in infancy detachment are rare but the incidence increases rapidly at 20 years and

much more rapidly again at 40 attaining a maximum between 50-60 years, to fall rapidly after 70 again. Since senility favours it, so retinal detachment is more common in the decade when senile changes usually begin to take place.

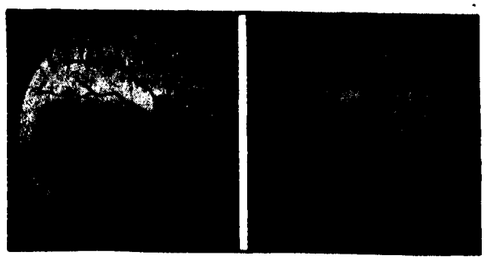
4. *Proportion of Right & Left Eye:*

It is more common in right eye as has been seen by many observers. Weve found the ratio to be 11:10 and he said that it is difficult to give an explanation of this curious fact. Perhaps a difference in pressure in the retinal vessels is responsible. Fritz found the pressure in the retinal art centralis in the left eye as a rule 10mm. higher than in the right, which he explained by the fact that the right carotid artery comes from the innominate artery and the left carotid from the aorta. Thus the left eye might as a rule be better nourished. On the other hand we must state that the majority of observers could not find any difference between the retinal arterial pressure of both eyes.

5. *Heredity:*

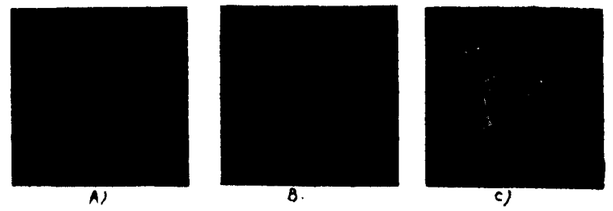
This appears to have its influence very occasionally, but it must be kept in mind while taking history. A number of families recorded, however, were myopics and it seems probable that this tendency rather than the detachment was inherited (Salzman and Arruga). Vogt has pointed out that cystoid degeneration and retinal atrophy, like all senile and presenile characteristics, although they occur in later life, must necessarily be preconditioned in the germ plasma. Richner collected the genealogies of 52 families including the material of Vogt, in which detachment of the retina had occurred 15 times in one generation and 18 times in the following generation. In one family retinal detachment had occurred in three generations. The heredity was from

(Fig. 2)



(Fig. 3)

(Fig. 6)



A)

Peripheral Pigmentary Atrophy

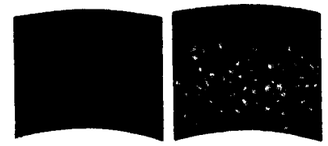
B.

Peripheral Cystoid Atrophy of The Retinal

c)

Peripheral Cystoid Atrophy with the formation of . Retinal Holes

(Fig. 7)



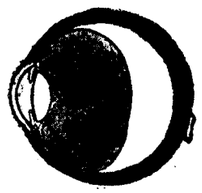


Fig. 8 Complete simple posterior detachment (Diagramatic).

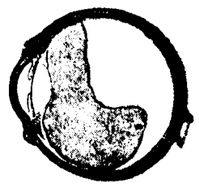


Fig. 8b Complete posterior detachment with collapse. (Diagramatic)

parents to children directly in all but three cases. The form of heredity is usually a dominant one but occasionally it may be recessive (Rieger). Recently familial juvenile idiopathic retinal detachment has been described in three generations by A. Fegen-Baun of Jerusalum. It appears that the hereditary element which is transmitted is the retinal degeneration that predisposes to detachment.

6. *Bilaterality*:

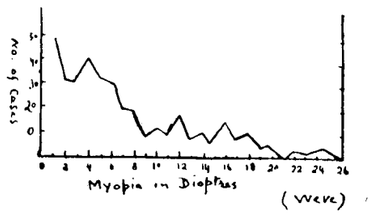
A detachment of the retina frequently occurs in both eyes Arruga 7.7.% Gonin 11.6%. Shapland 15.6% Indeed the tendency to bilateral occurrences is sufficient to merit anxiety if a unilateral detachment occurs without a precedent chain of events. Apart from traumatic cases and secondary detachments, the above figures show a sufficiently large proportion of bilateral cases to excite interest. So it should be a part of our routine examination, to explore particularly the periphery of other fundus in every case of detachment of the retina. Very many eyes can be saved by timely light diathermic application or Photo-coagulation of degenerated aseas or holes without detachment. One of the most interesting features is that the detachments in the two eyes are usually symmetrical in position and that the same type of hole or dialysis exists in both (Fig. 3). This suggests some congenital weakness or a tendency to pre-senile degeneration which pre-disposes to detachment : as we have just seen. So the occurrence of familial detachment suggests that such a tendency can on occasion be hereditary.

The average time for the involvement of the second eye is 5 years.

Aetiology

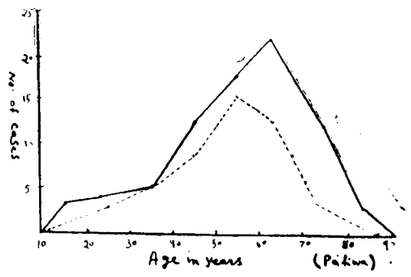
7. *Myopia*:

The first to draw attention to the fact that a retinal detachment was a frequent complication of myopia was Von-Graefe (1857) who found that this refractive condition was present in 50% of cases. Other authors give similar figures, Arruga 58%, Shapland 62%, Gonin 66% and Weve 55.5%. So it appears that nearly half to 2/3rd of the cases occur in myopes. The detachment occurs with considerable frequency in all grades of myopia but it has been seen that higher the myopia, the greater is the pre-disposition for retinal detachment. No doubt there are many cases of detachment in patients with slight myopia, but its incidence in this large group is less than in the much smaller group of patients with high myopia. (Fig 4)



(Fig. 4)

One more fact requires notice is that they tend to develop the condition at an earlier age, the maximum height of the curve is between 50-60 years, *whereas* the other curve shows its maximum height between 60–70 years. (Fig. 5) Theory of "Stretching of



——*Senile*.....*Myopic*

(Fig. 5)

GLEANINGS FROM THE MEDICAL PRESS

EFFECT OF RICE DIET ON DIABETES MELLITUS ASSOCIATED WITH VASCULAR DISEASE. W. Kempner, R. L. Peschel & C. Schlayer, Postgrad. Med 24: 359-371 (Oct) 1958 (Minneapolis) Via J. A. M. A. Jan. 3, 1959 Vol. 169. No. 1.

This report is concerned with 100 consecutive patients who had diabetes mellitus associated with vascular disease and who were treated with the rice diet. They were followed for from 3 months to 11 years and the average period of observation was 22 months. Nine patients died. The rice diet is a high-carbohydrate, low protein, low-fat and low-sodium diet, containing 565 to 570 Gm. of carbohydrate, 20 to 25 gm of protein, less than 5 Gm of fat, and 70 to 120 mg of sodium per 2400 calories. It was well tolerated. Average insulin requirements as well as average blood sugar levels decreased. Manifestations of cardiovascular and renal disease, such as hypertension, enlargement of the heart, electrocardiographic abnormalities, azotemia, and proteinuria, improved significantly in the majority of patients. Hypercholesteremia, present in 80 of the 100 patients, decreased in 85% from an average level of 325 mg to an average level of 227 mg per 100 cc.

The effect of the rice diet on "specific" diabetic retinopathy (aneurysms; punctuate, preretinal vitreous hemorrhages; waxy exudates; retinitis proliferans) in 44 patients was as follows; progression of lesions, in 9 patients; improvement in one eye but progression of lesion in other eye, in 7; no change, in 15; improvement in 13. In 19 patients who had hypertensive, arteriosclerotic or renal retinopathy (papilledema, hemorrhages, exudates, venous thrombosis) the lesions progressed in 3, did not change in 5, and improved in 11 patients. It is not known what single factor causes the effects of the rice diet on diabetes mellitus and its vascular complications. It contains less sodium, protein and fat than any other diet used in the treatment of diabetes mellitus. The authors conclude that an attitude of resignation with regard to the prognosis in diabetes mellitus with vascular complications including diabetic retinopathy is no longer justified, since the course of the disease can be favourably changed by treatment with the rice diet.

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ULCER DISEASE IN CHILDREN C. C. Hatfield Virginia M. Month. 85: 561-564 (Oct) 1958 (Richmond) Via J. A. M.A. Decr 20, 1958. Vol. 168, No. 16.

The author presents the histories of 2 girls, aged 9 and 13 years, and 2 boys aged 14 and 17 years, who had a variety of abdominal symptoms and in whom investigation revealed duodenal ulcer. The children were observed in the course of less than 13 months. The 9 year old girl exhibited typical under symptoms and the author feels that had she been 20 instead of 9, a diagnosis would have been made at the first office visit. The 13 year old girl offered a more difficult problem since her symptoms were vague; she resembled the adult patient, with mild epigastric distress and vomiting without definite physical findings. The 17 year old boy had an almost classical picture except for absence of relief by food; his symptoms were all referable to his gastric retention. The 14 year old boy had typical ulcer symptoms for 2 years with retention being the outstanding cause of complaint.

Ulcer disease in children presumably runs the same course as in adults. There is pain, hypermotility, gastric retention, food

relief, flatulence, nausea and vomiting. In the children of this series fluoroscopic examination proved of greater value in identifying the site than did the conventional plates. The use of a spot film device aids in capturing the involved area at critical moments. It is well to remember that ulcer disease may appear at any age. Symptoms and signs are the same in children as in adults. Response to treatment is excellent. If the physician is aware of the possibility of ulcer disease in children and keeps it in mind, he will be able to diagnose the condition in many of these patients earlier and rehabilitate them more quickly.

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PROBLEMS IN CANCER

Until we know more about the factors that control the spread of cancer, we cannot generalize about the subject of cancer. There is at present no scientific basis upon which any one is justified in advocating simple mastectomy, radical mastectomy, or irradiation therapy as the single or even the chief method of treatment for cancer of the breast. There may be a place for all of these types of treatment, for just as there are 3 types of cancer of the skin (basal cell, squamous cell and melanoma) so there may be at least 3 biologic types of cancer of the breast. If so, each deserves its own treatment. The challenge to the surgeon is to try to find a way to distinguish each of these biologic types from the others. Individualization deserves more emphasis than it has been given in our cancer clinics in recent years. Our tendency to overgeneralize about cancer reminds me of the Polynesians who live under the cocoanut palms, yet, oddly have no name for a "Cocoanut". Instead they have three names for cocoanuts. They have a name for the immature cocoanut which gives the milk, another for the half ripe cocoanut that gives the jelly, and a third name for the ripe cocoanut that gives the meat. But you can't ask for "a cocoanut" in the South Pacific. It is too general a term. Perhaps "Cancer" is too general a term for us G. Crile Jr., M. D. F. A. C. S., Problems in the Treatment of Cancer, *Maryland State Medical Journal, September 1958. Via J. A. M. A. Jan. 3. 1959 Vol. 169 No. 1.*

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CHANGING FACTORS IN DISEASE:

Our bodies are complicated built-in chemical laboratories, evolved ages ago under primitive conditions. Already we are discovering disquieting facts. Longer life span is being purchased at the cost of increasing numbers of the aged whose survival creates new problems...Not merely is mastery of existing diseases incomplete; germs and viruses are learning to thrive on drugs which, a year or two ago, were fatal to them. The history of past epidemics is a tragic story...It may be thought that, as we now understand carriage of disease by lice, fleas, contaminated water, flies, rats and mosquitoes, the history of past epidemics has but slight significance. Such thinking is of the ivory castle brand. Life is never static. We are losing resistances to certain germs, and germs are evolving in their race for survival. Owing to their extraordinary rate of reproduction, the possibilities of a new variety by mutation is very real. The delicate balance between immunity and disease may be tipped against us. The rapidity of international travel fosters air-borne and contact dissemination of disease on a world scale and is creating a situation which may be difficult to control. We would indeed be well advised to continue to read and disseminate the history of epidemics as a spur to continued vigilance in the field of public health – J. Bostock, M. D., Medicine's Need for History.

The Medical Journal of Australia, Octr. 25; 1958. Via J. A. M. A. Jan. 3. 1959 Vol. 169 No. 1.

SOME AETIOLOGICAL ASPECTS OF CORONARY HEART DISEASE: AN INDIAN POINT OF VIEW BASED ON A STUDY OF 867 CASES SEEN DURING 1948-55 R.P. MALHOTRA AND N.S. PATHANIA. BRIT. M.J. 2: 528-531 (Aug 30) 1958 (London) (via Medical Literature Abstracts) J.A.M.A. November 15, 1958. Vol. 158 No. II.

The author's report on 754 men and 113 women with coronary heart disease who were admitted to hospital are seen in private practice in Amritsar in the Punjab. India, between 1948 and 1955. Observations on these patients concerning age (including the younger age groups) profession, family history, body build in general, and association with diabetes mellitus and hypertension did not in any way differ from those of Western workers. The ratio of men to women was more or less the same as that described by Western Workers; thus, the degree of relative immunity from coronary disease enjoyed by the female sex in India is no greater than in the west despite the fact that women lead a comparatively much more sheltered and indoor type of life. that they are mostly vegetarians, and that addiction to tobacco or alcohol is practically unknown among them.

The role of the fat content of diet in the causation of coronary disease is a controversial point. The fat content of the diet taken by most of the 867 patients was poor as compared with European standards. Consequently it seems difficult to believe that dietary fat can play any significant part in the causation of coronary disease. The observations on these patients showed that vegetarians are no less prone to the occurrence of coronary disease, and the same is true of nonsmokers, since no less than 50% of the patients belonged to the Sikh sect whose religion forbids smoking. Obesity has long been recognised as an important predisposing factor. Of the 754 men, 204 were obese, 500 were of average type of build, and 50 were thin; of the 113 women, 48 were abese, 57 were of average type of build, and 8 were thin. These data suggest the greater importance of obesity in the causation of coronary disease in women than in men.

Coronary disease is a mojor cause of deaths in countries that are materially more advanced. Of the 867 patients, only 123 (14%) were from rural areas, but this finding does not justify the assumption that the disease is less prevalent among persons living in places remote from modern civilization. Patients from villages came to the town hospitals only when they were severely disabled by congestive heart failure or when their physical activity was seriously curtailed by severe anginal pain on effort. Brief or mild episodes of coronary disease remained unnoticed, and the same was true for sudden deaths. Furthermore, small villages near big towns cannot be considered rural in the real sense of the word. A great deal of work and money would be required for an investigation in those remote areas of India in which the mode of life continues to be what it was in the 18th century. With the present standard of vital statistics in India, it is difficult to give the true incidence of coronary disease in this part of the world. But with 867 cases of coronary disease (28.4%) occurring among a total of 3,054 patients with diseases of the heart seen during the observation period, it is difficult to share the view held by Western workers that coronary disease is uncommon in materially less-favoured countries.

Notes & News

CONSUMPTION OF PENICILLIN

In a written reply to a question in the Rajya Sabha, Shri D. P. Karmarkar said on February 12, that the consumption of penicillin in India was approximately 55 million mega units per year.

MEETING OF STATE LEPROSY

Addressing the conference of State Leprosy Officers on March 10, in New Delhi, Shri D. P. Karmarkar, Union Minister of Health, said that leprosy should be grappled as a national problem, and that the attempt should be made to achieve a " practical end " within the next ten years. This should not be difficult with earnest effort, adequate finances and availability of technical personnel.

Referring to the progress of the scheme the Minister said that against 64 units sanctioned so far out of 100 proposed under the Second Plan, 39 were established by the end of December, 1958, the total at present functioning being 72 including those started during the First Plan. Surveys in project areas covered a population of about 53 lakhs. Nearly 35 lakhs were examined and the number of known cases was about 77,000. Patients who registered for treatment were about 65,000 of whom 46,000 attended for treatment. Cases from outside the project areas who registered and attended for treatment were about 36,000 and 23,500 respectively. Healthy contacts under observation totalled 1,64,000 approximately.

Sizeable and precious work was also being done by various private organizations, Shri Karmarkar said. He assured them that Government would always willingly help such bodies and individuals. They had drawn up plans with the intention of fanning out and getting more people interested in the work. Although the ideal arrangement was to place a centre under a doctor, yet where social workers with long association with leprosy work had gained enough experience to take charge of centres. There could be no objection to place them in charge.

MALARIA ERADICATION PROGRAMME

Two landmarks in the fight against the scourge of malaria are the extraction of quinine from Cinchona bark in 1820, and the discovery by Sir Ronald Ross (of the Indian Medical Service) in 1897 that mosquito is the agent that spreads malaria.

Although in India attempts had been made earlier to control malaria, it was not till April 1955, when the National Malaria Control Programme was started, that the country declared virtual war against this disease. Control of malaria war taken up as a top priority project among the public health programme of the First Plan. Between 1953-54 and 1956-57, there was a fall of about 66 percent in its incidence.

From April 1958, the control programme was converted to one of eradication of malaria, calculated to be ultimately cheaper than continued control measures. Under this programme intensive insecticide spraying in every human habitation and cattle shed in areas where malaria is endemic will be carried out from 1958-59 to 1960-61 During the second phase, which will be known as the 'surveillance phase', special staff will detect residual malaria cases and will help in determining the advisability of stopping spraying operations. Lastly, vigilance will be continued for a further period of three years.

The estimated cost of the eradication programme during the current and next plan will be about Rs. 63.24 crores whereas a control programme for the same period is expected to cost about Rs. 52.02 crores.

For supply of D.D.T., which is one of the principal insecticides used in the programme, a D.D.T. factory sponsored jointly by the UNICEF, WHO and the Government of India was set up at Delhi in 1955 at a cost of Rs. 40.33 lakhs. A second plant at Always in Kerala is under construction. This is being financed by the Government of India.

UNICEF ALLOCATION FOR INDIA

In a written reply to a question Shri D. P. Karmarkar, Minister of Health, said in the Lok Sabha on March 12, that the Executive Director of the UNICEF had recommended for approval to the March, 1959 Session of the UNICEF Executive Board; an allocation of $2.867,700 for various UNICEF-assisted projects in India. The UNICEF assistance, the Minister added, was meant not only for children but expectant and nursing mothers also.

The allocation of $2,867,000 would be utilized as follows: Expanded Nutrition Project, Orissa, $165,000: MCW and School Feeding (348 million pounds of skimmed milk powder) $370,700 (freight): Milk Conservation Bombay City Dairy; $1,000,000; Milk Conservation Rajkot. $150,000; Tuberculosis Control, $330,000; BCG Campaign $279,000: and DDT Plant Delhi, $73,000 — Total $2,867,700.

EQUIPMENT FOR T. B. CLINICS

In a written reply to a question in the Lok Sabha, Sri D. P. Karmarkar, Union Minister of Health, said on March 4 that the Central Government had supplied X-ray and labratory epuipment to 60 T. B. clinics in various States and of these 85 clinics were functioning.

Giving a list of the 25 T.B. Clinics where the equipment had not been installed, the Minister added that the State Governments concerned had already taken necessary steps to expedite the provision of accommodation, electric power and staff so that the clinics might start functioning as early as possible.

TURKEYS, DUCKS, PIGEONS JOIN PARROTS ON DANGER LIST

Turkeys, ducks and pigeons have now joined parrots on the danger list of public health as transmitters to man of a generalized virus infection known as psittacosis or ornithosis, according to an article in the latest issue of the Bulletin of the world Health Organization.* The author is Dr. K. F. Meyer, of the George Williams Hooper Foundation, University of California, San Francisco.

Ninety-eight species of birds (57 of them belonging to the parrot and parakeet family) have been found to be naturally infected with this disease, which is by no means always benign in man, since until recently it killed 2. 6% of its victims. With modern antibiotic treatment, the number of deaths has been considerably lowered. The disease is marked by pulmonary disorder and high fever

The attention paid to this disease, both from a public health and from an economic point of view, has increased with its spread as an acute infection in poultry—turkeys pigeons and ducks—and among people in contact with them, farmers, workers in processing plants, truck drivers, butchers cleaning packaged poultry, etc. The infection may also be transmitted indirectly: feathers and offal or waste from duck farms may endanger people only remotely connected with these breeding places. Epidemics have been reported from many countries, including the USA, Canada, Czechoslovakia, Austria, the USSR, Germany, etc. So far as is known, the disease has never been contracted from eating diseased birds.

* Vol. 20, No. 1, 1959. The disease in known as psittacosis when it affects parrots and orte. psittacine birds (parakeets, etc.) or ornithosis for its equivalent in other birds.

Ornithosis is of growing concern to large groups of people, including flock owners, the poultry industry, agricultural agencies, poultry processors, labour unions, insurance companies, health agencies and biologists, and Dr. K. F. Meyer recommends that all efforts be made to improve diagnosis of the disease to remove sources of infection, and to improve inspection of flocks and processing plants. Physicians should be notified of all poultry epidemics and farm and other workers made aware of the danger they are exposed to. Now that effective treatment is possible such measures should prevent serious illness and deaths among the population, says Dr. Meyer, who points out that in the past, the infection, had sometimes not been recognized until after several people had died.

And pigeons too

In Argentina and Australia, the infection is found in wild psittacine birds, in the USA the growth of the trade—and smuggling too, says Dr. Meyer—of pet birds, particularly parakeets, after World War II increased the incidence of the disease in the population. Psittacosis resulting from contact with cage-birds has also been reported from Germany, Denmark, Switzerland, Great Britain and Japan. In Italy and France, ornithosis is apparently endemic in other birds and gives rise to human infection from time to time.

World-wide prevalence of isolated infections among pigeon fanciers and operators of pigeon lofts is also noted in Dr. Meyer's article. A few fatal infections in infants and occasionally in old people who spend a considerable time in public parks cast suspicion on the vast numbers of free-flying pigeons as a public health hazard.

Addition of tetracycline compounds to poultry feed has been successful in eradicating the infection from a few parakeet-breeding aviaries, but the results with pigeons and turkeys have been less promising; it is hoped, nevertheless, that a suitable chemotherapeutic method can eventually be developed.

Merck Names Prof. Kalman C. Mazey Director of International Clinical Research

To develop its extensive programs of clinical research on drugs throughout the world, Merck & Co.. Inc., Rahway, New Jersey, recently announced the appointment of Prof. Kalman C. Mezey as Director of International Clinical Research, in its Merck Sharp & Dohme Research Laboratories Division.

Dr. Mezey was formerly professor of Pharmacology and Therapeutics at Javerians University School of Medicine, Bogota, Colombia. He is the author of many papers on clinical and pharmacological subjects, and has also exercised executive positions in the pharmaceutical industry. Dr. Mezey was born in Hungary, and received his medical education in Switzerland specializing in Cardiology and Internal Medicine. He is an accomplished linguist.

In his new post, Prof. Mezey seeks to broaden Merck's foreign clinical program for the medical evaluation of new drugs, to include a wider study of local environmental conditions in the development of drugs for specific local disease conditions. He will work in close collaboration with the firm' International Division.

Prof. Mezey assumed his new duties in February.

CORRIGENDUM

We regret to note a few typographical errors crept in the article entitled "Congenetal defect of the Skull" on page 2, of April 59 issue. The sentence should read as "The patient was sent over to the Neuro-Surgical department of the S. S. K. M. Hospital for Ventriculography: He was sent back to us with a remark..."

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Editor

EDITORIAL

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