MEDISCOPE JOURNAL OF MEDICINE
Surgery

VOL - II NO - VI

SEP - 1959

MEDISCOPE

Journal of Medicine & Surgery

SUBSCRIPTIONS

Yearly Rs. 10/-

H. Yearly Rs. 5/-

SEPTEMBER 1959

VOLUME II

NUMBER VI

Price Re. 1

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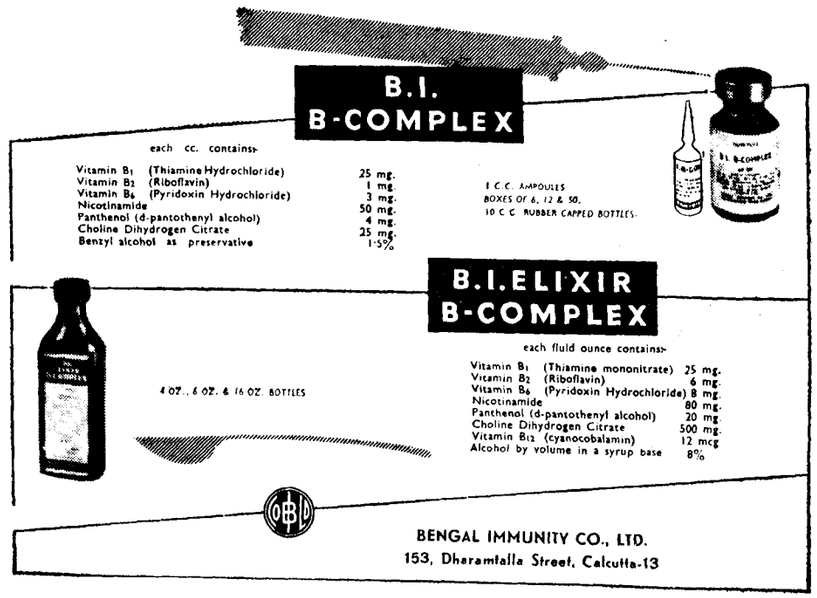

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VOLUME 2 SEPTEMBER '59 NUMBER VI

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CONTENTS

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BOOK SECTION

MEDISCOPE
Journal of Medicine & Surgery

VOL. II SEPTEMBER 1959 No. VI

Skin Diseases Caused by Serious Exudations

By

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Skin diseases caused by serious exudations are those, classified under one of the groups of pure dermatosis.

They are Herpes Simplex, Herpes Zoster, Dermatites — Herpeteformis, Pemphigus, Hydrova-Oestivale, Summer Erruption, Epidermolysis Bullosae and Eczema. Most of these diseases are commonly seen in routine practice either in hospitals or in private Practice by every medical officer and as such it is a fact that most are well acquainted with their treatment also.

(I) HERPES SIMPLEX: (FEVER BLISTERS)

Definition .– Herpes Simplex is an acute eruptive disorder with the appearance of grouped vescicles on an inflammatory base, accompained by sensation of heat and burning.

Common Sites of Infection :— Face and genitalia.

Eteologu ;—The disease occurs in all age and in both sexes. It is neither a family nor heriditary disease. The causitive organism is filter passing virus. Other causes uncleanliness, irritation from recomposing secretions, local heat, friction and trauma. Commonly seen in connection with acute infectious disorders as malaria, pneumonia and influenza etc.

Histopathology :—There is a vescicle formation in superficial part of Prikle-cell layer of epidermis, which results from spongiosis. There is dilatation of vessels of superficial arterial plexus in the Corium The vessels are sorrounded by cupping of leucocytes some of which penetrate the Basal layer of epidermis and into vescicles of prikle-cell layer. In cases of Herpes

Simplex the virus has also been noted in cells of the cornea the central nervous system, liver, testicles and ovaries; (and this is common in animals).

Symptoms:—There is usually complaint of burning pain in the part affected, with swelling and appearance of blisters. The onset is sudden. The patient is often suffering from a systanice disease associated with fever *Eg*: pneumonia, acute coryza, spirochaetal, jaundice etc., or may have undergone protien-shock treatment that has produced artificial temperature rise. Inoculation or vaccination designed to promote an immunity against certain diseases may also be an attended pyrexia and it may cause Herpex Simplex. T. A. B. may get this too. It is thought that the virus is normally sacrophytic and in certain conditions may become pathogenic in the course of a constitutional upset produced by other causes.

Signs: Sudden appearance of grouped papules which soon developed into vescicles, the fully developed picture being a group of vescicles of small Bullae which may after become pustular, closely set on an erythametous plaque.

Sites of election;—Lips, oral mucosae, glands and shaft penis and the vulva in the female.

Prognosis:—Good although scarring may be produced if secondary infection by extraneous pyogenic organisms is severely present. Some individuals appear highly susceptible and recurrence is common with any mild febrile disturbances such as common cold.

Treatment:—Analgesics for pain and treatment of inter-current diseases. Locally application of spirit and dusting powder, containing calaminae preperatae, zinc oxide, acid boric, of 1 dram each in 2 ozs. of amylum. The object is to prevent rupture of vescicles.

HERPES ZOSTER

Etiology: A filter passing virus which is thought to be normally present as a sacrophyte in nasal pharynx and which on certain occasions passes into the circulation and reaches the central nervous system, where it attacks the sensory portion of the Cranial nerve ganglia and the posterior root ganglia of spinal cord. Some workers suggest however that the virus may lie deep in the cells of the central nervous system nor perepharel nerves. The disease is neither family nor hereditary and may affect at all ages and in both sexes. It is rare to find a recurrence following an initial attack but in cases of Tumour of the spine syphilis, mylites, Diabetes and chronic Arsenical poisoning recurrence sometimes noticed. The presence of perepheral neurites as a complication of these three diseases, Syphilis, Diabetes and Arsenical Poisoning proves that the livelyhood of some toxic action on nerve tissue, being present in the case of the disease of the skin. In tissues of the spinal cord or column itself, the pressure factor as regards posterior nerve ganglia, must also be taken into consideration. The virus of Herpes Zoster is now thought closely related to but not identical with like of verisellae and epidermic of one or more diseases are occasionally described which the microscopic appearance of the virus is identical. Nevertheless it is not fully proved that we are dealing in the case of Herpes Zoster with the infection of the central nervous system by the virus and in the case of verisellae with blood stream infection by an identical organism.

Hlstopathology;—As per Herpes Simplex with several additions and discrepencies, the virus is similarly situated relating to the vescicle but is oxophnlic. The vescicle contains numerous lucocytes, many of them Lynaphocytes and may also contain red cells and numerous multinucleated cells which are swollen and degenrated cells of the prikle cell layer (Baloon cells). These later cells are diagnostic of Herps Zoster. There is an intense inflammatory congestion of posterior root ganglia with lymphatic infiltration. There is marked. leucocytosis in the cerebrospinal fluid Virus may be seen in the connective tissue. Lymphocytes in the vescicles are common.

Symptoms:—Shooting neuralgic pain followed by the appearance of a rash confined to usually one side of the body.

Signs:—A grouped vescicular eruption, the group of eruption set on an erthametous plaque. In severe cases the vescicles may be haemorrhagic or pustular and neglected eruption may secondarily be infected by pyogenic organisms from the skin surface. Rarely there may be scattered varsellae from vescicles on the remaining skin of the body (Herpes generalisatus). There may be signs and symptoms of associated disease *eg*; Diabetes in recurrent type or the patient may be receiving a course of arsenical medication.

Pain:—Post Herpetic Neuralgia some times extraordinarily troublesome in aged individuals are long after the acute stage of the desease has passed away.

Site of Election:— Face, Forehead, Limbs and Chest.

Prognosis:—(1) Depends upon the site of the body affected (may be seen in the affections of the gasserian ganglian).

(2) Presence or absence of intercurrent diseases.

(3) Presence or absence of secondary pyogenic involvement of the eruptions. Extensive scaring may follow severe secondary pyogenic invasion.

Treatment.—Vescicles should never be ruptured. Clean the area with rectified or clean methylated spirit and dust the lesions with a

Calmina
Preperata oz i
Menthol ii gr
Starch ozss

dusting powder. Analgesics eg., sodium Lunicnal gr i. T. D. S. is useful. Pituatary inj ½ c. c., Autoheammotheraphy. Biweekly (5 c. c., 5. c. c.-7½ and 10 c. c., 10 c. c.,) to be given. Concentrated staphlococcal vaccines, Antititanic serum have also been tried, but of doubtful value. For any internal treatment disease must obviously be dealt with as far as possible. The post Herpetic Neuralgia response well to the galvanic or faradic current. Vit. Bl is a also good in Post Herpetic Neuralgia. Thiamine chloride 0.05 grams to 0.100 grams may be given (3 or 4 injections). This may also be given orally or subcutaneously. Roentgen irradiation of the spinal ganglia is used as routine treatment in Herpes Zoster, to prevent Neuralgia and also to reduce the intensity of the eruptions.

DERMATITES HERPETIFORMIS:

Eteology:—Unknown, but patients are usually of highly nervous type and worry seems to predispose. All ages and both sexes are affected but more common among women and there is certainly a definite group of cases associated with Hydraua Gyavidorum. There may be some eteological connection between the ingestion of iodine and the development of the disease. The disease is commonly recurrent. Allergy (Easonophilic) virus grouping Herpetoid.

Histopathology:— There is a definite vescicle situated, in the deeper part of the prikle cell layer, the roof being composed of prikle cells and the peripheral structures and the flour either by the basal layer or it may be the superficial part of the papillary part of the corium. There is vascular dilatation in the papillary layer of the corium, and vessels are sorrounded by lucocytes. Many of them are Easonophiles. There is also some generalised Oedema of the Corium and there may be a certain

amount of necrosis of fixed tissue cells with mild fibroblastic repair as healing takes place. The vescicles contain straw coloured fluid and many lucocyte a bulk of which are Easonophiles.

Symptoms;—There is a recurrent rash of blister type and intense itching of continuous nature, relieved only by rupturing of blisters. Complains of severe malaise, Haligen test is usually positive.

Signs:—Papulo-Vescicular eruption, the lesions being situated on erythametous base and in severe cases, may affect the entire skin of the body, but sites of election are that of face, shoulders, sacrum and extensor limb surfaces. The oral mucosa is occassionally also involved. Irregularly distributed among the active lesions are small pigmented scars which the active lesions have a grouping suggestive of Herpes Zostsr. Neglected cases show secondary pyodermia or Lichenification and eomplains on general malaise. In some cases pyrexia may be present, especially in the early course of the eruptions and the urine often contains an excession indican at this stage. The urinary chlorides are sometimes be reduced in these early states, below 5 grams per litre. The blood differential W. B. C. count reveals difinite Easonophelia of 40 to 50 percent. A high percentage of Easonophelia is found in these vescicles.

Differential Diagnosis: Two diseases from which this disease has to be diagnosed are (1) Scabies and (2) Pemphigus.

Scabies.	Dermatites Herpetiformis.	Dermatites Herpetiform's.	Pemphigus.
1. Itching nocturnal	1. Continuous Itching.	Onset early half life.	Usually later life
2. Not usuallly recurrent.	2. Recurrent.	Prognosis good.	Prognosis bad.
3. Burrows present.	3. Burrows not present.	Lesions small vescicles	Large Bullae.
4. Distribution: Face, Shoulders seldom affected.	4. Face and shoulders affected.	*Distribution*: Grouped and symetrical.	Scattered.
5. Acarus found	5. Acarus not found.	*Base of lesion*: Red or yellow.	No areola.
6. Eusonophilia not marked or absent.	6. Eusonophilia Present.	Vescicle fluid contain 40 to 50 percent Eusonophilia. Haligens test positive. Nekolskys sign negative. Mucous Membranes rarely affected.	Mild Eusonophilis. Haligen test negative Nekolskys sign positive.
			Mucous membranes rarely usually affected except in one life.
		Itching Positive	Itching.....No.
		General condition good.	General condition bad.

Haligens Test;— Consists of putting on 20% Potassium Iodide in vaseline ointment to a healed part of Darmatites Herpetiformis and have it for 48 hours. Positive reaction is an outcome of group of vescicles. Diseases such as Eczema, Dermatites and Erythema multiform may occasionally be-differentiated to distinguish from Dermatites Herpetiformis but distribution and test findings should serve to clean the diagnosis in doubtful cases. Impetigo neonotorum and bullous syphalide of young children can be distinguished by the above tests, dark ground illumination and scrological tests in cases of syphilis and findings of staphlococai positive in the vescicle fluid in the case of the socalled pemphigus or Impetigo neonotorum.

Prognosis:- Good prognosis despite recurrence but some highly nervous patients occasionally adversely affected mentally.

Treatment:- All septic focii if any to be attended to. Liq. Arsinicalis up to minims XV. Three times a day successfully controls the eruptions. Sodium Thiosulphate (thoughtto be effective owing to its power of reducing free iodine) is often also given in one grain doses, intramuscularly twice weekly. Autovaccines and protien shock therapy is advocated by some workers, as also in giving of calcium and vitamin 'D' in daily subcutaneous of Intravenous injections Bi-weekly. Germanin (Bayers). 0.5 gms weekly intravenous 3 to 4 doses in 2 courses is very useful.

Dieting:- Light vegetarian diet is preferred during the stage of Acute eruptions. Salt free diet is advocated by some workers in view of the apparent retention of the chlorides in the tissues. Exhibition of iodides in any form should be stopped. Severe cases associated with pregnancy, it is advisable to empty the uterus.

Modern methods of ordinary course of sulphonalamides or sulphopyridine has been claimed to control an acute eruption more quickly. Pencillin in small doses of 20000 units daily once or BD may do good.

Local Methods:- Rest in bed. Anti pruriticlotions, and if need be pastes and creams with or without antiseptics may have to be employed. More chronic cases will do well with sulphur ointment as in scabies.

As regards the army cases; the patients should be evacuated to a temperate climate in severe as skin toilet is difficult to practice. In very severe cases recommend Catigory "C" or "E".

An ointment containing sulphur and oil of cade is of value in very many cases.

R/Acid salicylic	Grs iii
Menthol	Grs ii
Sulpher precipitate	½ dr.
Zinc Oxide	2 drs.
Oleum Cadini	1 dr.
Pul. Amylum	2 dr.
Ung Petrolatum	1 oz.

(for external use.)

PEMPHIGUS:

Eteology:-May be acute or chronic and the acute type is now generally accepted to be a staphlococcal septecemia following infection of the superficial layers of the skin by way of abrasions. The organisms responsible are staphlococil areus and some times heamolytic strepto coccus. Blood stream infection occurs following the entrance of organism through the original abrasion and the skin eruption is a manifestation of general systemic diseases. The chronic type of pemphigus is of unknown eteology although the Bacillus Pyocynious, has been noted to be present in the lesions or atleast one of the chronic type.

The disease occurs at all ages in the form of acute pemphigus due to staphlococcal infection. Chronic type usually occurs during later part of life. Once established, the disease contains with little remission until cure or death.

Histopathology:- There is marked spongiosis in the superficial part of the prickle cell layer and the lower part of the granular layer. The roof of these Bullae is composed of the attentuated superficial layers of the Epidermis and the floor by the deeper prickle celled-layer. The Bullae contain red cells and leucocytes and albuminious fluid. Eusoniphiles are persent but not in excess. There is dilatation of the papillary vessels of the corium with cupping of cells and there is general oedema of the papillary layer itself. In acute type of pemphigus the casual organism may be recovered from Bullae and in one of the chronic sub groups pemphigus foliaceus, Bacillus Pyocyames may also be discovered.

Symptoms:- No complaint except sudden appearance of blisters, although in the acute case there is naturally general malaise and high fever. No itching.

Signs:- Sudden appearance of Bullae, often large, generally not very numerous arising from apparently normal skin. The mucous membrances are affected in all types except Pemphigus foliaceous. There is invariabley a positive Nikolsky's sign in severe cases. There may be anurea and reduction of chlorides in the urine and also may be in blood. Eusonophelia present in chronic type. In acute form polymorphoneuclear leucocytes are present and there may be positive blood culture of the casual organisms. Blister fluid may contain organisms, but does not usually contain any excess of Eusonophelia. The Haligen test is negative.

Types of Pemphigus :-

(A) Acute: (i) Children } a blood stream
(ii) Adults } infection.

(B) (i) Pemphigus Vulgaris Chronic

(ii) Pemphigus Foliacious. (In this form there is flaccidity of the Bullae and secondary infection is ripe. Bacillus Pyocyeous has sometimes been isolated from unruptured Bullae, but it is doubtful if it is more than a secondary invader. The mucous are unaffected.)

(C) *Pemphigus Vegetans*:- In this form there is a tendency to flexular involvement and Pemphigus offensive and crusting of lesions.

All chronic types are slowly fatal with a few exceptions.

Differential Diagnosis:- From (1) Dermatites Herpetiformis (2) other bullous diseases, such as simple Bullous impetigo of children and adults (3) Bullous drug eruptions, urticaria, erythema multiformii which present little difficulty.

Prognosis:- Very grave except in form of Bullous impetigo of children, if it is agreed to recognise as a form of Pemphigus; other acute types rapidly fatal, chronic types slowly fatal but underlying of general health.

Treatment:- Unsatisfactory. Diet should be light and nutritious in chronic cases. Complete and comfortable rest in bed.

Internal medication is of little avail, generally same as that for Dermatites herpetiformis. Morphis should not be with held if severe pain is present in later stages. Sulphonalamide drugs eg: sulphothiozole... Pencillin, Streptomycine, Auromycin are indicated in acute types. I.V. Germanin 5 to 1 gram doses 3 or 4 days for 4 doses is occasionally used in chronic forms. Blood transfusion tried in all types.

Local Treatment:- Continuous soothing baths are advocated. Sulphur ointment should never be used as per Dermatites Herpetiformis.

(To be continued)

—:o:—

Recent Advances In Paediatrics

By

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Recent advances is a vague term capable of various interpretations. So, I shall first of all define the scope of this article. I shall restrict myself to those advances which have a direct bearing on the more common and important clinical problems with which a practitioner is confronted in his daily work. Though I shall discuss the subjects rationally, limitation of space has compelled me to be rather dogmatic with respect to many problems. I feel this will not meet with too much of disapproval since the idea is to find practical means of solving some of the riddles posed in the every day practice of Paediatrics. Thus, I hope I have amply protected myself from critics who may level charges of omission as well as those who might accuse me of being doctrinaire.

I. SOME NEONATAL PROBLEMS

Blood and circulation

An understanding of certain physiological principles is essential for dealing with diseases connected with the blood and its circulation in infants. Foetal circulation differs markedly from circulation after birth and these adjustments are made at or soon after birth. Maternal blood passing through the placenta and cord into the infant's circulation is cut off by the act of tying the cord. Soon after that three major events occur:

1. Closure of the ductus arteriousus.

2. Closure of the foramen ovale and 3. Closure of the sinus venosus.

1, Tying of the cord:-

From various studies made so far it seems obvious that delayed tying of the cord will cause a most desirable increase in the red cell content of the infant by causing the residual blood in the placenta and cord to flow into the infant's circulation especially if the infant is kept at a lower level than the placenta. Though this manouvere would result in passage of both plasma and red cells into the foetal circulation, the fluid part of it is extruded from circulation in a few hours (De Mansh Windle & Act-1942-P.58) thereby increasing the haemoglobin content from 14.8 to 18.6 gm/100 ml (Colozzi 1954) The advantage of this will become clear when the discussion on the problems of iron deficiency in the infant is considered.

2. Closure of the ducturs arteriosus.

It used to be thought that functional closure of the ductus occurs within a few minutes of birth. But more recent experiments prove that it remains patent for some time after birth – up to 2 days in certain animals. (Mort and Widdcombe 1955) (Anerso Davis and Molt 1957 P. 18). This results in there being an intermediate type of circulation, in the new-born, midway between foetal and adult types. The significance of the existence of this is too complicated to go into. The practical considerations arising from this are firstly a systolic murmur may be heard at the base for some hours after birth—secondly continued patency for some days may result in increased load on the left side of the heart with resultant heart failure.

3. Closure of ductus venosus: Though functional closure is effected with-in a few minutes of birth, anatomical closure occurs some days or weeks later. During this period

infections of the umblical wound can easily travel along this path to the liver, there to set up a focus of infection which may prove most serious.

Haemopoeisis in infancy :—Since iron is the key substance in haemopoeisis, it is worth while to consider for a moment the distribution of iron in the body of an infant. Iron is present in these forms:–

1. Haemoglobin iron.
2. Tissue iron.
3. Storage iron.

Of these the last is most important since this is what is available for haemopoeisis. Hence it is worth while to follow the amount of this at various stages in the life of a baby. Premature infants have much less stored iron and hence are liable to get into difficulties resulting from iron deficiency. So we shall compare them with normal ones. The storage iron content of infants at birth, 6 weeks and 4 months are given below.

Storage iron in mg.	Birth	6 weeks	4 months
Normal infant.	34	79	29
Premature infant.	17	31	nil

By six weeks the storage iron is augmented by transfer of iron present at birth as haemoglobin and released by haemolysis. Placental transfusion by delayed tying of cord (ef. above) will add nearly 3.7 mg. of iron to the stores in a normal 7 lb. baby (equal to the storage iron at birth). The advantage of this procedure now be-comes obvious especially in premature infants in whom storage iron is otherwise depleted by the 4th month, unless given supplemental iron feeding.

Iron intake :–Breast milk supplies less than 2/3 of the requirements of a baby. Hence the importance of iron supplements in any condition which increases the demand for iron which will immediately cause a further depletion in the iron stores.

This explains why infants so easily develop anaemia. Most illnesses including infections which are common in infancy, can thus result in anaemia. Therefore one should always be on the look-out for it and treat it promptly by administration of iron.

Anaemia in infancy :—1. The commonest cause of anaemia in infancy is the type described already where infections or similar conditions cause increased demands on blood formation which results in anaemia because of the low stores of iron in the infants' body.

2. *Anaemias of Prematurity* :—Again the mechanism is clear from the above explanation. It is therefore imperative to guard against it by iron administration as a measure of prophylaxis in all prematures from the 6th week if otherwise normal and earlier if there had been additional demands on the already depleted stores as accurs in infections or other illness.

3. Haemolytic anaemias. Haemolytic disease has received much attention in recent years. The most rational treatment for this is now admitted to be exchange transfusion. Due to the great danger of kernicterus it is desirable that case of this disease should be anticipated and all arrangements for an exchange transfusion be made even before the child's birth, so that there would be a minimum of delay before treatment is instituted.

A point to be noted is that if initial exchange transfusion has not been given and sufficiently severe anaemia as to warrant a transfusion has NOT occurred during the first 10 days, then it is better to withhold transfusion even if haemoglobin level falls to as low as 6 gm/100/ml. because the stimulant effect of anaemia on the bone narrow is cut off if haemoglobn is raised by transfusion.

NEONATAL JAUNDICE

Recent work on this subject has revealed the presence of certain conditions whose existence was not realised till now.

Neonatal jaundice can be divided into two groups namely obstructive and non-obstructive. This is not an ideal division but serves its purpose in clarifying the cause of jaundice to a certain extent and helps us in making a diagnosis. The chief difference between the two is that in obstructive jaundice the bile pigments have already passed through the liver cells and form what is known as bilirubin glucuronate. This, unlike pure bilirubin, can pass through the kidney and be excreted into the urine. It also gives a direct Vanden berg reaction in the blood.

Congenital atresia of the bile ducts : This condition is now found to be very rare and treatment is unsatisfactory. It is obvious that many conditions previously diagnosed as congentail atresia of the bile ducts were really obstructive jaundice due to other causes. There are two varieties, the intrahepatic and extra-hepatic varieties. The intrahepatic type has a better prognosis since obstruction is incomplete and the child can live for longer periods.

Diagnosis of this condition is made when ihere are signs of obstruction of the bile ducts. There is jaundice of increasing tntensity, white stools, bile in the urine and a direct vanden berg reaction in the blood.

Since these findings are common to all cases of obstruction to the bile duct, the final diagnosis can be made only on opening the abdomen.

Treatment: This is surgical but is very unsatisfactory in many cases especially in the intrahepatic variety.

Inspissated bile Syndrome

There is deep jaundice, pale stools and dark urine with bilirubin glucuoronide in the serum. Many of these cases have in the past been wrongly diagnosed as congenital atresia of the bile duct.

Prognosis is good in all cases and there is surprisingly little liver damage in this condition.

Treatment is usually not required though administration of magnesium sulphate by intraduodenal tube has been recommended. This has the disadvantage of causing purgation and depressing the central nervous system.

Galactosaemia: This is a condition caused by inability to utilise galactose. There is mild jaundice in this condition.

Treatment: consists of giving a rigidly lactose free diet.

Congenital hepatitis : This is some times known as neonatal hepatitis It is a condition which is now recognised as not at all uncommon.

Definite opinion as to the cause is not possible on the evidence so far obtained. It seems however to be closely related to viral hepatitis and infection may be intrauterine or acquired soon after birth.

Treatment is mainly with adrenal steroids. With treatment, prognosis is good. Cirrhosis of the liver may be a sequel to this condition. Rare conditions like cytomegalic inclusion body disease and herpetic hepatitis may sometimes cause obstructive jaundice.

Non-obstructive jaundice : All conditions giving rise to hemolysis in the new born will give rise to non obstructive jaundice. The greatest danger in this condition is production of kernicterus. It seems to be clear that the causes of damage in kernicterus is high concentration of bilurubin in the serum. This damage does not occur in the case of bilurubin glucuronide. Therefore it is unknown in obstructive jaundice.

The importance of this knowledge is that we can prevent kernictercis by early removal of bile pigments from the blood in cases of hemolytic jaundice by the prompt institution of exchange transfusion.

Erythroblastosis foetalis : This is one of the most important causes for haemolytic

jaundice. The greatest danger in this condition is the production of kernicterus. This can be prevented by exchange transfusion given as early as possible and repeated as often as necessary. This has the added advantage of correcting anaemia without over loading the circulation, and removing unfixed antibodies from tissues and circulation. Other causes of haemolytic jaundice in the newborn are rare.

TUBERCULOSIS IN CHILDREN

Recent years have witnessed a considerable change in the management of childhood tuberculosis in Western Countries. Whereas till recently the tendency had been to allow natural cure of primary tuberculosis to occur, opinion has veered round to recommend active treatment to more and more cases. While there is justification for the wait and watch policy in Western Countries where patients can be kept under close observation, Conditions in India do not warrant such optimism. It is only too well known how difficult it is to get patients to attend any clinic regularly, especially when there are no alarming symptoms. The dearth of doctors add to the difficulties of keeping such a close watch. Therefore, considering that about 7.5% of all cases if primary tuberculosis under one year and 5% between one and two years of age develop tuberculous meningitis, it is quite apparent how important it is to actively treat primary tuberculosis in India, when even in Western Countries active treatment of primary tuberculosis is being more and more recommended. Even in the days when the teaching in Western Countries was to withhold active treatment in primary tuberculosis in most cases, I was of opinion that such a policy was untenable under existing conditions in India. While waiting for nature to cure, a tragically large proportion would develop conditions such as miliary tuberculosis and meningitis, because the children are either not brought to the clinics often enough or because the doctor in the clinic does not have the time to look for the earliest symptoms of these dread complications. Since these complications are more common; in the young child the necessity for active treatment is inversely proportional to the age of the child.

Tuberculin testing:-Cutaneous tests are the most satisfactory ones. They can be done either with old tuberculin (1 :1000) or PPD (10 T.U.) An area of induration 5.m.m. in diameter after 72 hours is accepted as a positive result.

Indications for active treatment: There is still some controversy regarding this subject. At one extreme there are those who would treat every child with a positive mantoux test whereas others would start treatment only when severe symptoms are present. The first is not possible in a country like ours where almost every child becomes mantoux positive before reaching puberty. The concensus of opinion is that active treatment should be instituted under the following conditions.

a. *Age of the patient:* The younger the child the greater the need for active treatment. All children below one year should be automatically given active treatment.

b. *Nature of symptoms:* Symptoms in this condition are usually vague. One should not wait for classical symptoms of fever and loss of weight to occur before starting treatment. The chief symptoms on which reliance is placed are anorexia, failure to gain weight, and enlargement of lymph glands, especially of the neck.

c. *X-ray evidence* of progressive primary complex.

d. *Symptoms of infection* in other parts of the body such as bone, abdomen, and urinary system.

e. Miliary tuberculosis and meningitis.

The chief reason for advocating early treatment is to prevent the onset of such severe conditions as miliary tuberculosis and meningitis. With the advent of I.N.H. we have a potent weapon which has very few adverse effects. Therefore, treatment can be undertaken more freely than was possible before the discovery of this drug.

The chief point to be borne in mind is that the younger the child in whom there is a positive mantoux reaction the greater the danger of developing conditions like miliary tuberculosis and meningitis. So it may be taken as a rule that all infants below one year of age with a positive mantoux reaction should be put on active treatment.

Treatment: Atleast two drugs should be given whenever a child is treated for tuberculosis. The drugs of choice are streptomycin intramuscularly in doses of 20 mg. per pound body weight given either daily or twice a week depending upon the severity of the condition, and I.N.H. which is given by mouth in doses of 5 to 10 mg. per pound body weight per diem. Average duration of treatment in an uncomplicated case should be three months. Severe cases need treatment for longer periods. P.A.S. has the advantage that it can be given by mouth and in those cases where injections are impracticable or otherwise contraindicated, I.N.H. and PAS may be given together. Children tolerate all these drugs surprisingly well and toxic symptoms are rarely present. The greater disadvantage of P.A.S. from our point of view, is the costliness of the drug.

All cases of progressive primary complex should also be put on treatment. These cases should be followed up by periodical X-rays to check the progress of treatment. Healing of progressive primary complex is very often shown by the appearance of calcified spots appearing in the X-ray. Clinical improvement should also be a criterion in guiding the course and duration of treatment. All cases of abdominal, bone and urinary tuberculosis should receive active treatment. In these cases the course and duration of treatment are judged on the physical findings and results of laboratory investigations.

Tuberculous meningitis: The early diagnosis and treatment of the condition has assumed very great importance since we now have drugs which can completely cure this condition without after effects, if treatment is started early and carried out properly.

Treatment; Streptomycin intramuscularly in doses of 20mg. daily for as long as one year to several years is necessary in most cases. Intrathecally streptomycin is given in the more severe cases in doses of 25 mg. to 50 mg. I.N.H. in high doses 10–15 mg. per pound body weight per diem also given for the same period as streptomycin. In the more severe cases the administration of prednisolone during the early stages is very useful and should be continued till such symptoms as unconsciousness and other central nervous system changes have subsided. The rationale of using prednisolone is to prevent formation of adhesions and to break them down if they have already formed. Many cases which would previously have been considered hopeless are now completely cured after the advent of this drug.

The duration of treatment is one of the most important considerations in tuberculous meningitis. Stopping treatment too early is one of the most frequent causes for failure to cure Criteria for stopping treatment should be not only complete clinical cure of the condition but also the return of biochemical findings in the C.S.F. to normal, including its protein content. The minimum period of treatment of any case of tuberculous meningitis should be one year. After

stopping treatment the case should be followed closely with repeated Lumbar punctures to ensure that the C.S.F. remains normal after having returned to normal.

NEPHROTIC SYNDROME

This is the name given to a condition characterised by oedema, massive albuminuria, hypoproteinaemia and hypercholesterolaemia.

Aetiology: It is a not uncommon condition in children in India, as shown by the fact that it accounts for 3.8 % of all admissions in the hospital section of the Institute of Child Health Calcutta (Ghosal and Chawdhuri, Ind. J. Ped. 25, 637: 1958) My own experience is quite similar. The predominance of males is an interesting feature.

The cause of the condition is still obscure. But it seems beyond doubt that there are several different aetiological factors which might lead to this disease. The course and prognosis differ in different cases. It is not clear whether these differences depend on the cause.

There is one group of cases in which the aetiology is clear. These are the toxic ones following mercury ingestion, trimethadione and paramethadione poisoning etc.

Experimental production of Nephrosis suggests that hypersensitivity may be an important factor. Hegmann and Lund 1951 (232) and Ehrich et al 1952.

Pathology: More and more pathologists now feel that the common denominator in all cases of nephrotic syndrome is some alteration in the basement membrane of the glomerular capillaries. Allen (1955) Pollack et al. 1956 (230) Bromffitt and 0' Brien 1956. The introduction of needle biopsies in this disease has advanced the knowledge of the pathology of this condition Galan and Maso (1957) as also Electron Microscopic studies (Farquhar, Vernier and Good (1957).

Diagnosis: It is important that this condition should be differentiated from other similar conditions of the kidneys. The important points to be considered are the following

(1) Gra dual onset of oedema.

(2) Massive albuminuria. (This may not be very obvious during periods of remission).

(3) Absence of signs of acute renal involvement such as blood, blood casts and epithilial casts. (a few R.B.Cs. may be seen microscopically from time to time in some cases of nephrotic syndrome and this should not prevent the diagnosis of this diseases).

4. Hypoproteinaemia, especially of the albumin fraction.

5. Serum Electrophoresis often shows a relatively high value for the alpha 2 fraction of globulin.

6. High blood cholesterol values.

Many of the cases show enlargement of the liver of a varying degree. The cause of this has not been established but may be related to the hypoproteinaemia. Almost all cases show exacerbations and remissions. Other allergic manifestations, like asthma may be present. The percentage of such complications vary widely in the several published series. In my own experience, it is not at all un-common, especially asthma, whereas there was only one case of asthma in the series of 45 cases published by Ghosal and Chowdhuri (1958).

Treatment:- The multiplicity of methods of treatment of this condition in the older text books is an indication of the inefficiency of most of them. Though all cases do not respond equally well to treatment, yet one can, with confidence now say that with proper management, a good proportion of the cases can either be cured or at least allowed to lead a fairly comfortable life. There are several factors pertaining to the disease which need attention in drawing up a comprehensive programme of treatment.

The chief points are enumerated below :-

1. *Infection*:- This is the bane of most of the cases of nephrotic syndrome, especially upper respiratory infections. Very often an infection ushers in an exacerbation of the original disease. Prophylaxis with 300,000 units of Benzathine penicillin orally once daily or 250 mg. of a broad spectrum antibiotic like tetracycline orally daily have proved very valuable in many cases. Prompt treatment of all infections with an appropriate antibiotic is essential.

2. *Adrenal steroid therapy*: The efficiency of these in producing prolonged remissions is now well established. Mecroy and Macaulay (1957). In my experience several cases had complete clinical and brochemical reversal of symptoms including return of electrophoretic pattern of serum to normal.

The steroid compound which I now prefer above all others is prednisolone. This is administered in fairly high dosage to begin with, 15 to 30 mg. per diem in children from 2 to 10 years of age. This dosage is kept up for 6 to 12 days depending upon the severity of the symptoms. Then it is gradually reduced till a maintenance dosage of 2.5 to 10 mg. daily is conitnued for several months. The dosage is increased if there is a remission inspite of a maintenance dosage.

3. *Plasma transfusions*:- This is a form of treatment which I have found to be of immens evalue in severe cases of nephrotic syndrome, especially when all other forms of treatment have failed in reducing oedema. I have found this especially useful in those cases where there is gross enlargement of the liver. Dry plasma is used. It is made up with half the quantity of water recommended by the makers thus reducing the total quantity transfused. This is filtered and then given intravenously as a slow drip. Several cases which had progressed inexorably inspite of all other forms of treatment including steroid therapy have shown remarkable improvement and some cases have even shown ultimate biochemical reversal of symptoms following this treatment. In many cases, repeated transfusions have to be given before final cure is obtained.

3. Diet: High protein low salt diet is the routine in all cases.

(To be Continued)

Diabetes Mellitus and The Family Physician

By

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Lecture delivered before the Salem Branch of the Indian Medical Association on 7—5—'59

The subject of diabetes mellitus is a vast one, there are many aspects of the disease which are of importance. Today I am going to stress on some of the practical aspects of the disease and especially on the part that the family physician has to play in the management of the disease.

It is the responsibility of the family physician to discover cases of diabetes quite early, to give correct advice regarding treatment and to see that prevention of the disease if possible is carried out. He must be a teacher of his patients, of their relatives. and of the public.

Various elaborate investigations on diabetes have been made and are still being conducted. Contributions to literature continue to appear in almost alarming numbers and bulk, still, the exact cause of the disease is not yet known and diabetes still continues to prevent many unexplained features which are at once the fascination and despair of the clinician and the chemist alike. We have to admit that we cannot even define precisely what we mean by the term diabetes mellitus. Nevertheless this lack of definition has not stood in our way, in the management of the disease, since we are aware of, what we mean by the term in general.

Even though diabetes mellitus is a common disease, we find that difficulties in diagnosis set in frequently, that there are wrong conceptions regarding methods of treatment, and that little effort is made to prevent the disease or to postpone its onset Today, I will try to stress on some of these aspects which are of use mainly to the general practitioner, who is usually the family doctor.

The first problem that I will touch upon, is the diagnosis of diabetes mellitus. Though the literature of the Ancients, contains many allusions to 'a somewhat mysterious disease, which was accompanied by polyuria and other diabetic symptoms', it was left to rhe English physician, Thomas Willis who died in 1675, to make the fundamental, if apparently simple observatiou, that the urine was sweet in this disease. This discovery resulted from the obvious process of tasting the urine when it was found to be " wonderfully sweet, as if, containing honey or sugar ".

The real cause of sweetness however, he failed to recognize, and it was after about a hundred years in 1776, that Dobson demonstrated that the sweet taste was due to sugar.

The diagnosis of diabetes is usually first suspected by the finding of sugar in the urine. Since the disease usually begins insidiously, its prompt detection depends, upon the routine testing of the urine. It is the duty of the family physician to get the urine of all his patients tested for sugar, whatever be the illness they are suffering from. It is a wise procedure to have the urine of even the healthy members tested when there is a history of diabetes in the family.

If a patient has sugar in the urine, it is a safe rule to consider the diagnosis to be diabetes until the contrary is proved, But this does not mean that the patient should be told that he has diabetes and that diabetic treatment should be instituted, immediately. Repeated examination of the urine must be done. If the glycosuria is influenced by the amount of carbohydrate in the diet, then the diagnosis is almost definite. Whenever a doubt arises the blood sugar esttmation must be done. The extreme ease with which blood sugar can now be estimated leaves little or no excuse for neglecting this important procedure.

A fasting blood sugar of more than 130 mgm. per cent or a level of 170 mgm and above, after a good carbohydrate diet is diagnostic of diabetes. It is always advisable to have these checked up at the end of one month to confirm the diagnosis. Those patients who have glycosuria related to food, who easily become sugar free with slight restriction in the diet, but whose blood sugar values are definitely below the levels already mentioned, are to be considered as potential diabetics.

According to some authors the blood sugar value at the end of two hours is more significant. A value of 120 mgm- per cent or higher is supposed to be diagnostic of diabetes.

In this conection I would like to point out some of the usual mistakes that we often meet with. If we are on the look out for diabetes we have to examine not the early morning fasting urine, as is done usually, but a specimen of urine passed about two hours after food. It is useful to remember that a slight greenish change in the Benedict's solution can be produced by concentrated urine and that we must look for a definite precipitate before we take it as sugar in the urine.

When we are doing the glucose tolerance test we must see that the patient is on a fairly good carbohydrate diet atleast for 2 or 3 days before the test is done.

For the diagnosis of diabetes the standard oral glucose toleranae test is the most useful. In an occasional case where the absorption from gastrointestinal tract is impaired the intravenous glucose tolerance test might have to be done.

A more recent diagnostic procedure for mild diabetes is the intravenous tolbutamide response test. In a non-diabetic after the intravenous administration of tolbutamide the blood sugar falls to a very low level within 20 minutes whereas in a diabetic the fall is only very little, This test is being tried in our Diabetic clinic.

Is cure of diabetes possible?

The answer is definitely No. Occasionally we do hear of some patients who had definite glycosuria and hyperglycemia and who after a course of treatment had become sugar free, The tendency for diabetes is inborn and must remain so for life. In some it will never become manifest, but in others, some exciting cause will disclose it, such as over-nutrition, infection etc and once the exciting cause is removed the disease might go into hiding.

TREATMENT OF DIABETES:

We have many methods of treatment of diabetes:

1. Diet.
2. Diet and exercise.
3. Diet and Insulin.
4. Diet and oral antidiabetics.

Thus we see that the foundation of all therapy is diet. There are many misconceptions regarding diet in the diabetes. Many patients and even doctors, think that dieting is a complicated procedure. This is far from the truth. The diabetic diet is a very simple diet. The fundamen-

tal principle is to give to the patient the minimum of food necessary for the requirements of the body. It is not always necessary to calculate the minute details of the diet.

To start with, a diet as small as possible should be prescribed so that it can be increased, rather than decreased, as time goes on, partly because of the psychological effect on the patient. It has been our practice, whenever possible to put the patient on buttermilk, greens and tomatoes for atleast 2 days and then gradually build up the diet according to the requairements. Another principle is that, a diabetic diet must be made up of small, frequent feeds. This is the more important when the patient is on a long acting insulin, so that the rise in the blood sugar won't go very high, after any of the feeds.

Changing over to a wheat diet as soon as diabetes is diagnosed. is one of the common practices that we see. It is not unusua to find diabetic patients who have not touched rice for years together but are taking only chappathis and poories, which they are permitted to take in any number. It is worth remembering that the carbohydrate content of one ounce of rice, is 22 gms and that of wheat, is 20 gms. i.e. the carbohydrate content of rice and wheat is almost the same, and there is no meaning in changing over from one to the other. If wheat is taken for its nutritive value of the protein it must be taken as whole and not as refined wheat flour. As far as diabetes is concerned, it is the quantity that counts, and not the quality. Oatmeal is the cereal with the lowest carbohydrate content and it is the most voluminous when cooked.

THE INSULIN

Regarding ihe insulins, there is nothing much new; except the introduction of insulin suspensions which are among the best available preparations today. They are

especially of use in the patient who requires a mixture of quick acting and a long acting insulin.

ORAL ANTI-DIABETIC THERAPY:

This mode of therapy is found to be useful for patients who fulfil the following criteria:

1. Older age group more than 40—50 years.
2. Short duration of the disease.
3. Relatively short duration of treatment with Insulin.
4. No tendency to ketosis.

The first drug to be tried, Carbutamide (B.Z.55, Nadisan, Invenol) has already been given up, because of its toxicity. The next preparation to come and which is being extensively used, now-a-days, is Tolbutamide. (D.860, Rastinon or Artosin). This preparation has proved to be, an effective substitute for insulin, in a limited group, of middle-aged or elderly non-obese patients suffering from comparatively mild diabetes, who inspite of diebetic treatment, require small or moderate doses of Insulin. Mild diabetes of obese patients may well respond satisfactorily to the drug, but it should not be given as a substitute for dietary restriction.

Regarding the management of complications of diabetes the best method is prevention of these complications by proper treatment of diabetes itself. I would like to mention a few words about the most important comlication namely diabetic coma. It is important to spot the ketosis in the precomatose stage which will often be possible by the examination of urine for ketone bodies under all suspicious circumstances and to institute early and energetic treatment, before the failure sets in.

As soon as the diagnosis is established, one must give 50 to 100 units of insulin immediately, and proceed to hospitalise the

patient whenever possible. In the presence of circulatory collapse the same amount may be given I.V, Correction of dehydration must be undertaken immediately by giving normal saline or 1/6th molar lactate solution. Glucose saline at this stage only aggravates the electrolytic changes and dehydration. The rate and the amount of fluid is to be regulated by the severity of the dehydration and the cardiac status of the patient. At the same time steps must be taken to correct any precipitating cause such as infection. Routine stomach wash helps to control the vomiting, relieves the distension of the stomach and prevents possible aspiration pneumonia. Enemata are also helpful.

During the second hour, insulin may be repeated depending on the results of urine examination. At this stage it is necessary to look for potassium deficiency since the vomiting, the polyuria and the acidois result in significant potassium loss. This can be easily detected by E.C.G. or by blood potassium studies. Unfortunately both are not usually available to us in an emergency. Weakness inspite of an improvement in the diabetic state, abdominal distension and cardiac or respiratory irregularities, strongly suggest potassium depletion. In any case it is better to presume a hypokalaemia and after making sure that the functions are adequate, as shown by urinary output of more than 1000 c.c. large quantities of orange juice and Pot. citras or chloride 15 gr. thrice a day orally should be given.

Frequent examinatton of the blood sugar level is the ideal, for the guidance of further treatment. When this is impracticable, hourly urine examination must be done.

As soon as the initial dehydration is corrected, glucose or glucose saline may be administered because once insulin begins to act the patient may imperceptably slip into a hypoglycemic coma, for the glucose reserve of the comatose patient is already low. The routine treatment of shock, the prevention of pulmonary infection etc., are carried out as indicated.

Now I come, to a more important, but neglected aspect of the disease, I mean, the prevention of diabetes. Is prevention, possible, in diabetes? I must say, to a great extent it is. The physician must consider it as important to protect his patients from acquiring diabetes, as he feels it incumbent on himself, to vaccinate against smallpox, typhoid fever, diphtheria, and tetanus, or to protect them from exposure to tuberculosis.

To understand this problem it is necessary to go into the pathogenesis of the disease. There are many wide gaps in our knowledge, of the pathogenesis of diabetics but there are some factors which stand out in prominence. The progressively more detailed studies of experimental diabetes, have revealed many isolated features which seem to complicate our understanding of the clinical disease.

Diabetes mellitus is mainly metabolic disorder. In the diabetic, the metabolism of carbohydrate proceeds abnormally in that, depending upon the severity of diabetes, the glucose, which results from the digestion of carbohydrate or from breakdown of non-carbohydrate meterials is, to a greater or lesser extent, not oxidised in the tissues or stored as glycogen or fat, in the normal fashion, but instead. tends to be excreted in the urine. All the signs and symptoms of diabetes mellitus can be relieved by insulin injections, given in proper dosage. Many of the features of the disorder can be explained on the basis of the defective insulin supply.

It does not however follow, that diabetes is always due to diminished production of insulin by the patient's islet tissue; in some cases, as a matter of fact, the output of

insulin from the pancreas is probably increased. A new concept is being put forward that there is a delicate homeostatic mechanisn which keeps the blood sugar in normal persons in the narrow range from about 70 mgm. to 160 mgm. per cent. Diabetes may be regarded as an imbalance in this mechanisn, in which the blood sugar raising factors predominates over the blood sugar lowering factors.

Lawrence divides diabetics into the thin young acidotic group and the older fat group. In the former the blood is devoid of insulin and in the latter is abundant.

The pathologic physiology of diabetes as already mentioned flnds its principal expression in hyperglycemia. The origin of this latter has been in dispute for many years. One school of thought has maintained that it is due to the inability to utilise carbohydrate while the opposing school has held that over-production of glucose from non-carbohydrate sources is responsible, with little or no impairment of its oxidation or storage. Probably in the diabetic both under utilisation and over production are combined.

In the etiology of diabetes heridity plays an important part.

The bulk of evidence favour the inheritance of the trait as non-sex linked recessive. There are two kinds of evidence for hereditary tendency. Firs a history of diabetes in one or more blood relatives, is much commoner in diabetics, than in non-diabetics. Secondly if one, of a pair of indentical twins develops diabetes, the other one also will develop diabetes almost at the sametime or atleast sometime latter in its life.

When both parents are diabetic, 33 per cent of their offsprings have diabetes and a diabetic type of glucose tolerance test is obtained in 62% of the children; If only one parent is diabetic, 9% of the children have clinical diabetes, with diabetic type

of giucose tolerance test in an additional 12–14%. Upon this inherited tendency other factors may be superimposed to precipitate the disease. Certain workers maintain that diabetics do not inherit a functionally inadequate pancreas, but in most instances the characteristic insulin insufficiency is due primarily, to increased destruction, increased requirement of inhibition of the hormone, consequent to extra pancreatic influences.

Some workers reported that their studies of 100 diabetic families indicated a history compatible with the so-called phenomenon of anticipation. In their view, diabetes makes its appearance in susceptible families at a progressively earlier age in successive generations-culminating pephaps with self extinction, in utero, as a consequence of unsuccessful pregnancy, There were numerous examples of diabetes, appearing in the last decades of life in the grand parents, in parents during the middle years, and in their children at an early age. This concept of anticipation is attractivc, but disputed.

MARRIAGE IN THE DIABETIC

If two diabetics marry all their descendants are destined to develop this disease provided they live sufficiently long.

If a diabetic marries a non-diabetic, but in a diabetic family, the inheritance is cut in half. If two non-diabetics, but each with diabetes in their families, marry theoretically one-fourth of the children are destined to the disease. If a diabetic marries a non-diabetic, of a non-diabetic famiiy, their children do not develop diabetes but they will be all hereditary carriers and are capable of transmitting the disease. However, unless the married persons who were also hereditary carriers, their own children would not develop diabetes. Thus we see that the chances of a diabetic and a true non-diabetic reproducing a diabetic are nil. This takes

us to the important problem of outbreed ing, carriers of diabetes. This can be done, only, if diabetics and their descendants consistantly marry into non-diabetic families. In the first generation the offspring of a diabetic and a non-diabetic are all carriers. In the next, providing a true non-diabetic partner is selected, the offspring stand one chance in two of being carriers, in the next generation 1 in 4, in the next generation 1 in 8, and so forth until the carrier tendency tends to disappear.

So far, we have seen that the fundamental etiology of diabetes is the proper genic background, but this does not help us to understand why even though this background is present from birth, the disease frequently does not manifest till a relatively older age. The onset of diabetes, probably depends upon a complex of events, presumably endocrine in nature, which obtain maximum manifestations between 45 and 55 years of age.

It appears likely that, when the inherited tendency is strong enough, the subject develops diabetes in childhood or youth, without becoming fat. If the inherited tendency is less strong, the disease becomes manifest only, when precipitating factors bring out the inherited predispostion. The most important of these, is obesity. An analysis of diabetic cases after the age of 30 will show, that 80 to 90% of them are overweight, The maximum weight, need not be at the onset of symptoms but might be some years before that. It is noted that even mortality from diabetes increases with the degree of over-weight. The factors, obesity and heredity, are probably closely linked. It is possible that the connection between obesity and diabetes is not entirely a causal one, but both reflect some underlying imbalance in the functioning of the body, probably of endocrine origin.

It is the duty of the physician to see that this tendency for obesity, is checked. This is possible in almost all cases, except in the few, where there is a real tendency to put on weight, despite moderate eating.

Taking too much of sugar or sweets, usually do not precipitate diabetes. It is the higher proportion of fat in the diet, rather than the carbohydrate which favours development of diabetes.

Evidences have accumlated to show, that trauma indirectly can activate to accelerate the appearance of latent diar betes in the hereditarily predisposed. It is especialiy so, if the trauma is accompanied by infection, reduced exercise, or overeating. Probably a more important factor is psychic trauma, or mental stress. Exampies are not wanting to show the appearance of diabetes, immediately after a mental shock-example, after the death of a close relative or after an economic distress.

Infection plays some part though not very siguificant, in the etiology of the diabetes, Where there is already an inherited tendency, infection might occasionally unmask the disease. More commonly diabetes, which is already manifest, might be made more sever by infection. Glycosuria is one of the frequent findings in severe type of infections. This is probably due to a temporary diminished tolerance for carbohydrate, during the infection. How this is produced, whether by reducing the production of insulin, or by destruction of insulin or by increased production of hormonal antagonists, or whether, by interference of glycogen, we are not sure,

The pre-diabetic state: In an individual destined to become diabetic, the prediabetic state must be regarded as existing, from the time of conception, to the time a definite diagnosis can be made by the

present methods of testing, A standard glucose tolerance test done on this individual might not reveal any abnormality. The cortisone-glucose tolerance test has been evolved to pin-point this petential diabetic, before the disease is evident, by the present day testing methods, 50 mgms. of cortisone acetate is given orally 8 hrs. and again 2 hrs, before a standard glucose tolerance test unmasks people who are in the prediabetic state. This helps us not only to predict diabetes. but also to study, what processes exist to make this particular individual, vulnerable to various factors which precipitates the clinical syndrome. It will also help us, to adopt all possible precautionary methods to prevent or postpone the onset of the disease.

If one wishes to detect the unknown and the undiagnosed diabetics, the area for search is all marked out for him. Mass screening programmes of general population is not practicable. If all the close relatives of known diabetics were to be screened, we would detect the vast majority of unknown diabetics. Adopting the the same methods we can detect also those who are in the prediabetic state.

Thus in the prevention and treatment of diabetes the following points are to be remempered.

1. A diabetic may avoid transmission of the disease, by marriage to a non-diabetic in a non-diabettic family.

2. All methods available should be utilised to diagnose diabetes early. Although no cure of diabetes can be claimed, in certain patients early vigorous treatment might bring about an amelioration in the diabetic condition of far greater degree than one would anticipate.

3. The prediabetic state can be discovered by doing the cortisone glucose tolerance test.

4. Precipitating factors like obesity and infection should be prevented in those who are in the prediabetic state.

It is safer even for others, particularly the relatives of a diabetic to avoid obesity. Thus we see that we have to focus on the diabetic family for the prevention of the disease and this is the prime duty of the family physician.

For success in treatment, education of the diabetic and his familly is essential. This requires not only knowledge of human nature. The doctor must take enough pains to teach his patient how to examine his urine; to explain about the diet and about tne insulin or other methods of treatment, and to impress upon him the value of exerscse. He must be taught how to hormonize these elements under various conditions of life. Wherever possible the patient himself must be made to test his urine for sugar. This will make him feel, of his responsibility, in the management of the disease, and even the slightest change found on testing will put him on the guard, and make him rectify the mistake wherever it is.

He must also, gradually be made aware, of the possible conplications, many of which can be prevented with a little care. The patient must be thought. that the preliminary treatment represents only the beginning of treatment, that treatment lasts for life and that careful meticulous treatment of diabetes helps to add, years of vigor and happiness.

Regarding employment, diabetes should not be a disqualification for any job which does not involve hazards for the patients or for others. In fact, a diabetic well-controlled can do better work than a non-diabetic, and takes less time off, for sickness, Life insurance companies accepting diabetics as risks, or firms employing diabetics. should give particulr consideration as to whether the applicants are under the regular supervision of a physician.

In a diabetic better hygiene, a simple well-balanced diet a more disciplined lite and a closer medical supervision - all these factors may help other diseases to be discovered and controlled earlier or altogether prevented. It may happen that the time will come, when diabetics will outliv-their contemporaries.

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GLEANINGS FROM THE MEDICAL PRESS

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DIAGNOSTIC VALUE OF THE "SWEAT-TEST" IN INCOMPLETE FORM OF "MUCOVISCOSIS".

by F. LUTIER.

Cystic fibrosis of the pancreas is generally marked by an association of denutrition syndrome with digestive and pulmonary disorders, but the condition may clinically present a different character which is described by the author as incomplete form of mucoviscosis.

He reports in detail the case of a 2-month-old infant who presented the disease in its purely pulmonary form. The diagnosis had been suspected as a consequence of the "sweattest" proving partially positive; then the proof of cystic fibrosis of the pancreas was histologically brought about by post-mortem examination.

The author emphasizes the value of the "sweat-test" which is demonstrative or suggestive of the presence of mucoviscosis in those questionable incomplete forms of the disease. when the values of Cl. and Na. in the sweat were shown to reach 100 mEq or even to be just below 100 mEq, that is in the transitional zone.

La Presse Medicale,
Vol. 66, No. 89, Dec. 17, 1958.
(via) La Medecine En France

COEFFICIENT OF ESTROGENS UTILIZATION. Its value in the course of pathologic gestations.

by H. PIGEAUD, R. BETHOUX and R. BURTHIAULT (Lyons)

An analysis of the results from a large number of assessments concerning urine estrones in the course of both normal and pathologic pregnancies has led the authors to establish the ratio estrone-estradiol to estriol and to study its variations. This ratio which, through a relatively simple technique for fractional measurements, makes it possible to evaluate the estrogen metabolism, has been termed "coefficient of estrogen utilization." For convenience in the reading, the findings were multiplied by 100, so that $K = \frac{OD}{T} \times 100$ (OD meaning estrone-estradiol and T meaning estriol).

The ratio, relatively high during the first months of pregnancy, was usually maintained below 10 after the fifth month of normal pregnancy. Its gradual rise in the course of pathologic pregnancies (threats of abortion during the last trimester) was of bad prognosis and was suggestive of affection of the ovum.

The lowering of the ratio $\frac{OD}{T} \times 100$ as a consequence of an active hormonal treatment is evidence that the chorion of the ovum is capable of "metabolizing" the estrogens, so that one can admit that the assessment of the coefficient of estrogen utilization constitutes an actual improvement in the matter of pregnancy endocrinology.

La Presse Medicale,
Vol. 66, No. 89, Dec. 17, 1958.
(via) La Medecine En France

CERVICAL ADENITIS DUE TO PARA-TUBERCULOUS BACILLI (chromogenic acid fast bacilli) IN INFANTS,

by MAURICE KAPLAN, RAYMONDE GRUMBACH and BERNARD DOBROWOKSKI (Paris).

The present work concerns the cases of two infants respectively aged 3½ years and 1 year, suffering from "cold adenitis, one cervical, the other sub-maxillary. Both cases were fistulized, then evolved rapidly towards healing.

From the pus withdrawn it was possible to isolate chromogenic acid fast bacilli, growing in smooth, orange-coloured colonies, on Lowenstein's medium, and not inducing specific tuberculous lesions in guinea-pigs.

A comparative study of these two cases with 21 others from the recent literature has led the authors to describe a peculiar clinical, immunological and bacteriological picture, which is characterized by an adenitis, most often cervical, developing in an infant with no impairment of the general condition, no expansion to other ganglionic areas. Tuberculin tests were most often positive.

Whether developing or not into fistula, the adenitis heals up generally in a short time. Owing to its benignity it is different from the common tuberculous adenitis.

A differentiation is bacteriologically made of the acid fast bacilli isolated from the pus of the adenitis, on the one hand from true pathogenous and non-chromogenic tuberculous bacilli, on the other hand from purely saprophyte chromogenic acid fast bacilli.

According to a number of criteria summarized in this work, the pathogenous para-tuberculous bacilli hold an intermediate place between these two varieties of mycobacteria.

La Presse Medicale.
Vol. 66, No. 85, Dec. 3, 1958.
(via) La Medecine En France.

THERAPEUTIC RESULTS AS OBTAINED WITH PLASMA GAMMA-GLOBULINS OF HUMAN ORIGIN. An enquiry covering 6602 cases. 1. Main indications for their use in infectious diseases,

by J. P. SOULIER, M. BADLLIET and F. HERZOG (Paris).

The first part of this paper deals with the results of an enquiry covering 6602 cases of various diseases treated by plasma Y-globulins of human origin.

Measles: 3785 cases were treated; preventively in 3702 subjects with 3158 total preventions (85,3%), 482 attenuations (13%) and 62 cases of non-attenuated measles due particularly to inadequate or too late treatment, say 18 true failures (0,4%). 81 patients who were given γ-globulins as curative treatment for measles with complications, in particular with encephalitis, showed very satisfactory results.

Whooping Cough: Curative treatment of Whooping Cough proved beneficial both to 150 cases treated in hospitals and 226 cases in town (144 excellent results, 44 satisfactory, 38 nil). Preventive treatment ensured 360 complete protections out of 437 cases.

Rubella: An enquiry covering 349 cases was designed for defining the preventive action of γ-globulins upon rubella of pregnant women and upon the congenital malformations of their children. In 315 pregnant women there were 3 benign cases of rubella. of which 2 after the protection time of Y-globulins. The condition of the infant was defined in 229 cases; only one case of malformation was susceptible of being attributed to the rubella, but not unquestionably as the contagion had taken place on the 7th month of the pregnancy.

Mumps: Results of the preventive and curative treatment were good in 36 cases, particularly as regards orchitis parotidea.

Vaccine and *smallpox:* The enquiry covered 72 cases for vaccine and 69 cases for smallpox occurring during an epidemic. Results were good preventively and curatively.

La PresseMedicale,
Vol. 66, No. 84, Nov. 29. 1958.
(via) La Medecine En France.

CLINICAL EXPERIENCES WITH THE NEW BROAD-SPECTRUM ANTIBIOTIC REVERIN INJECTED BY INTRAVENOUS ROUTE. K. F. ALBRECHT. Chirurg 29: 445-448 (Octr.) 1958 (In German) (Berlin) via J.A.M.A. Vol. 169 No. 2 Jan. 10 1959.

Riverin is the trade name given to a German preparation, pyrrolidinomethyltetracycline, which was developed by partial synthesis from pure tetracycline. This new tetracycline derivative shows in physiological PH areas a definitely improved solubility as compared with other tetracycline derivatives. The strength of its action and the broadness of spectrum are exactly equivalent to those of tetracycline hydrochloride. At the surgical clinic of the University in Marburg on the Lahn (Germany) this new broad spectrum antibiotic was given by intravenous route to 174 either hospitalised or ambulatory patients. Some of these patients had inflammatory conditions, such as furunculosis, suppurative bursitis, empyema of joint cavities, osteomyelitis, diabetic gangrene, peritonitis after perforating appendicitis, Perforation of stomach and pneumonia or urologic infections (to the exclusion of those caused by Proteus organisms and Pseudomonas aeruginosa) Other patients with paraurethral abscesses, surgically removable sequestrums, phlegmons of the palm and paronychia received Reverin as an adjuvant to surgical therapy. The drug was also administered in intracranial operations, surgical intervention on pharyngeosphageal diverticula, gastrointestinal resections, cholecystectomy, prostatectomy, mastectomy recurrent hernia operations, ureteral bougiemage, removal of renal and ureteral calculi, cystectomy and urologic plastic operations, as well as in fractures of the base of the skull, for prophylaxis of infections.

In most of these patients one intravenous injection of 275 mg of Reverin daily for 4 to 7 days was sufficient for therapeutic and prophylatic purposes. Patients with severe infections or with those caused by pathogenic agents with reduced senstivity to tetracycline were given 2 daily injections and occasionally 4 or 5 daily injections were given. One intravenous injection of 5 to 25 mg per kilogram of body weight proved to be sufficient in children. The satisfactory local tolerance of the drug made it possible to perform the intravenous injection within one minute. The resulting high initial concentration in the serum of the patient is apparently of essential clinical significance. Signs of irritation were not observed in the veins even with repeated injections made into the same blood vessel. No undesirable side-effects were observed except for insignificant sensations of bitter taste on the tongue which occurred in 70% of the patients.

CONTRIBUTION TO PROBLEM OF FAILURE OF ORAL THERAPY IN PATIENTS WITH DIABETES MELLITUS; S. E. Strauzenberg, H. Haller and H. Meyer. Munchen Med Wchnschr. 100: 1535-1540 (oct 3) 1958 (Munich, Germany) via J. A. M. A. vol. 169 No. 2. Jan. 10 1959.

The authors report on 1,000 patients with diabetes mellitus who were treated with orally administered sulfonylurea compounds. From the beginning of their administration these drugs did not exert any effect on the carbohydrate metabolism of 202 (20. 3%) of the 1000 patients, who therefore were considered as primary failures. Twelve patients (1. 2%) responded to the drugs for a short period ranging from 2 to 4 weeks, and after that the sulfonylurea compounds became rapidly ineffective; these patients were considered secondary failures. Seven hundred eightysix patients were satisfactorily controlled by the sulfonylurea compounds for periods ranging from 6 to 8 weeks and also for much longer periods. The durgs then became ineffective in 33 (4.2%) of these 786 patients who were considered as genuine late failures. Not a single case of recent diabetes mellitus was observed among these 33 patients; the shortest duration of the disease was 2 years and the longest, 33 years.

No relationship was observed between age and body type of the patient and the incidence of late failure to respond to the sulfonylurea compounds. There was, however, a definite relationship between the incidence of such late failures and the quality of the control of the carbohydrate metabolism by the sulfonylurea compounds of 448 patients who were easily and satisfactorily controlled with the aid of these durgs, 0.6% were late therapeutic failures, as compared with 7% of 280 patients who had shown only a moderate response to the drugs (with an abnormal daily amount of 10 to 20 GM. of sugar in the urine) and 13% of 120 patients who had been unsatisfactorily controlled with the aid of these drugs (the abnormal daily amount of sugar in the urine varying from 20 to 30 Gm)

In this last group complete failure of response to the sulfonylurea compounds occurred most rapidly. These findings, strongly suggest that prolonged therapy with sulfonylurea compounds should be limited to patients with the most favourable response to these drugs.

Late failure to respond to the sulfonylurea compounds is to be considered as a manifestation of the progressive course of the disturbance of metabolism, such as may be observed with similar frequency in other patients who had not been treated with sulfonylurea compounds. The fact that the metabolism can no longer be controlled with the aid of the sulfonylurea compounds is explained by the author's concept of the mechanism of action of these drugs. According to this concept, the sulfonylurea compound no longer exert an effect on the carbohydrate metabolism when the production of insulin in the patient's body is cut off to such a degree that a certain required amount of insulin is no longer available. The authors do not share the opinion of other workers that exhaustion of betacell activity may be caused by the sulfonylurea compounds.

NOTES & NEWS

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B.C.G. CAMPAIGN IN INDIA

There are at present 166 B.G.G. teams, each consisting of one team leader and six technicians, working in the country. Upto the end of March 1959, the number of persons tested was 126.2 millions of whom 44.2 millions were vaccinated. The target of 170 million tests is expected to be achieved by the end of the Second Five Year Plan.

B.C G. vaccination was introduced for the first time in August 1948 at two centres in Madras and Delhi under the auspices of the International Tuberculosis Campaign. Later, the W.H.O. and UNICEF also extended their help.

In 1949, the scheme was extended to include organised groups, such as school children and factory workers in large towns of the country. It was, however, in 1951 that the B.C.G. vaccination programme was organised on a mass scale to cover the entire susceptible population, estimated at 170 millions.

The Government of India established a Central B. C. G. Organisation in the Directorate-General of Health Services. A B.C.G. Vaccine Producing Laboratory was opened in 1948 at Guindy, Madras, and has sine manufactured both B.C.G. vaccine

and tuberculin. It serves not only the needs of the country but also supplies B.C.G. to some of the neighbouring countries like Malaya. Singapore, Burma, Ceylon, Afghanistan, Pakistan and Thailand.

MODERN APPROACH TO MENTAL ILLNES

Two million Europeans in hospital with mental illness, one million of these with schizophrenia, neurosis second only to the common cold as a cause of absence in industry--these are some of the figures which point to the need for preventing mental illnes. Just as the burden of physical disease in European communities began to be lightened during the last century through hygiene and vaccinations, so in this century a start is being made, through *mental* hygiene practice, to prevent mental illness.

In order to determine general principles of mental hygiene applicable in the countries of Europe with their different cultures and health administrations, the World Health Organization convened an international conference in Helsinki recently (24 June-3 July). It was attended by psychiatrists, general practitioners, nurses, social workers and psychologists--about 60 in all--from 26 European countries. Professor Arie Querido, Amsterdam, was in the chair.

The conference axamined mental health activities as pursued in various countries. The psychiatric first-aid service in Amsterdam, the services in Nottingham that provide care for mental and other patients in their own homes, the protection of mental health in the USSR through good working conditions and the efforts made in Finland for the family placement of homeless children were among many that received attention.

In Finland, the participants in the WHO conference had the opportunity of visiting a number of hospitals which in organization and architecture emdody the best modern principles: the door open, the patients quiet and occupied, and not even a garden fence to separate the hospital from the surroundiug community.

Psychiatric out-patient and follow-up clinics, clinics for alcoholics, night hospitals, day centres and child guidance were also discussed. Although facilities, regulations and methods may differ from country to country, there was unanimous agreement on the aims of mental health services:

- — Better treatment in and outside hospitals with more patients being cured more rapidly.
- — Better educational facilities for handicapped children so as to prevent their becoming institutionalized cases.
- — Earlier detection of mental illness, through medical services and general practitioners, but also through teachers, social workers, judges, police officers and others.
- — Reduction of stress in the environment as a means of prevention, especially in institutions for children and for old people.
- — Increased understanding of mental health problems on the part of the public authorities and health workers generally, and increasod tolerance in socicty for odd behaviour.
- — More researeh-

PROFESSIONAL TRAINING

In the view of the conference, mental health should be incorporated in the training of professions who have to deal with people. This should be the responsibility of the professions themselves and should be geared to their professional practice. The policeman, the teacher. the administrator should not be trained to become an amateur psychiatriat but mental health teaching should help him to carry out his job more esfficiently. Many cases of mental illness might be brought forward through the co-operation of such professions. Early cases can be treated more efficiently, more rapidly andmore cheaply.

A number of suggestions were made at nhe WHO conferenee for strengthening medical education. In general, the conference was of the view that great possibilities for attacking mental illness were opening up; this did not necessarily mean that more doctors would be needed. Mental health questions should, it was proposed receive more attention in medical schools than they do in general at present.

It was also suggested that students should spend less of their time studying corpses and more of their time studying the living, and that instead of a series of "cases" they should follow one family through health and disease over a number of years. In this way, students would learn to see the human being as a whole and not, as so often happens in hospital, as "the heart in bed five".

HORROR COMICS

Do violent and sexy books, films, or comics encourage mental stress and deliquency? Views were divided, but it was agreed that child reactions to sensationalism needed further study. It is wrong to give children the impression that the adult world is nothing but cruelty and lust, but it is also wrong to bring them up in complete ignorance of the crimes that are committed in the world.

Nor should children be brought up without coming in contact with persons having severe mental or physical handicap. Ignorance of their less fortunate brothers and sisters is poor preparation for the setbacks the normal child may experience later on himself or in his family.

PSYCHOLOGY FOR SCHOOL CHILDREN

The view was put forward at the WHO conference that since everybody is a practising psychologist, the school programme should everywhere include psychology as a subject. Some participants thought that such teaching should be started with quite young children, others favoured the last few years before matriculation as the most suitable time. It was agreed that psychology teaching would help children in practical ways to get on with the business of living would increase their tolernce for peculiarities in others and would help to dispel false notions. More people should realize, for example, that most cases of insanity can be cured, tnat insanity is not infectious, that delinquency is not inherited from father to son, and that there is no scientific evidence to show that one race of human beings is more intelligent than another.

SERVICE ORGANIZATION

It was agreed at the WHO conferenee that specialized mental health services should be part of the general health scrvice and that all health services should play a role in mental health. Particular attention was paid to the public health nurse and the part she could play in preventing and teaching mental illness,

— World Health Organisation.

TRAINING OF X-RAY TECHNICIANS IN S. E. ASIA

Regional Centre to be set up in Ceylon

A training centre for X-ray technicians from various countries of South East Asia is being set up in Colombo with the cooperation of the Government of Ceylon and the World Health Organization.

Located at the School of Radiography, General Hospital, Colombo, which already offers a training coures in radiography and radiotherapy, the centre will also provide an additional coursc of training in the maintenance and servicing of X-ray equipment and other electro-medical apparatus.

WHO will provide at least five fellowships a year to enable students from countries outside Ceylon to attend the course. The Organization's assistance will also include provision of an expert electrotechnician for at least two years and some equipment and supplies.

— World Health Organisation.

OPEN AIR T. B. CENTRES IN TANJORE

An announcement of July 8 says that the Government of India have approved of the establishment by the District Tuberculosis Association, Tanjore, of five open air for T.B. patients during 1959-60. They have also agreed to the payment of a non-recurring grant to the Association to the extent of 50% of the non-recurring expenditure incurred on the establishment of these centres, limited to a maximum of Rs. 12,500/-.

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HEALTH CONDITIONS IN JUNE, 1959

Births and deaths registered in towns with a population of 30,000 and over during May 1959, were 23 and 11 per thousand of the population respectively as against 24 and 10 in April, 1959.

According to available reports the country remained free from plague, Cholera and smallpox, however, continued to be eported from some parts.

Cholera: Based on preliminary data for the third week of June, 1959, (i.e. week ended June 20, 1959) considerable incidence continued to be reported from the city of Calcutta. Mid incidence was reported from the districts of Monghyr and Gaya in Bihar and Belgaum district in Mysore. The situation improved in the Panch-mahals district in Bombay and Ujjain district in Madhya Pradesh where epidemic conditions were reported during the previous two weeks of the month. During the week oniy mild incidence was reported from these two districts.

Smallpax: Mild incidence was reported from the districts of Srikakulam, West Godavari, Krishna, Guntur, Kurnool, Anantapur, Chittoor, Nellore and Cuddapah in Andhra Pradesh; Purnea, Hazaribagh and Dhanbad districts in Bihar; Greater Bombay, Nasik and Madhya-Saurashtra in Bombay; the districts of Trichur, Cannanore and Kozhikode in Kerala State; the districts of South Arcot, Coimbatore, Nilgirls. Madras city, Tanjore and Madurai in Madras State; Mysore, South-Kanara and Dharwar districts in Mysore State; Puri. Bolangir-Patna, Kalahandi, Kiraput and Sambalpur districts in Orissa State; Patiala district in Punjab and Sikar district in Rajasthan State.

Gastro-enterities: During the second week of June, 1959, 8 cases and 11 deaths were reported from Uttar Pradesh as againsl 107 cases and 12 deaths in the previous week.

Kyasanur Forest Disease: A total of 2 attacks with nil deaths was reported from Shimoga district in Mysore State.

Influenza: Poona city remained free from influenza during the month. Sporadic cases were, however, reported from some parts of Bombay, Mysore and West Bengal.

Epidemic means 100 cases or more per week per million of population. Heavy incidence means 50-100 cases per week per million of population. Considerable incidence means 30-50 cases per week per million of population, while mild incidence means less than 30 cases per week per million of population.

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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

CHAPTER XII

BREASTS

* * *

What are the usual variations in the shape of an adult female breast ?

Four types of breasts are usually described.

(a) Pear shaped.

(b) Hemispherical.

(c) Conical.

(d) Udder shaped.

The Hemispherical and the conical breast is usually found in the northern hemispher whilst the pear shaped and the udder shaped breasts are frequently found in the tropics.

Has dress anything to do with the shape of the breasts ?

Yes. Dress and religious customs has to do a lot with the shape of the breasts—in the Congo the women tie their breasts down when quite young so that later on they will not be hindered in their work. The women of the Cuban provinces of Caucasia flatten there breast with wooden plates !

What is the structure of the breasts ?

The breast consists of the nipple surrounded by a brown patch called the areola, and the breast proper which is made up of milk ducts and glands, incorporated in fat and fibrous tissue, which gives shape to the breasts. The breast is richly supplied with blood vessles.

What is the normal consistency of the breast?

The breast of a young girl is firm, hard and elastic, the nipple is small, and the areola is of faint brown colour.

At each menstrual period the breasts become slightly heavier. During pregnancy it increases in size and weight. The areola becomes darker and the nipple bigger. After breast feeding has been stopped the breasts become smaller, softer and slightly pendulant. In old age the breasts become saggy and soft due to shrivelling up of all the tissues.

What are the reasons for undergoing plasticsurgery on the breasts?

The usual types of breasts that require plastic surgery are: (a) over enlarged, pendulous breasts—this is sometimes found in young unmarried girls, may be due to hormonal imbalance. It makes them very selfconscious and embarassed due to their heavy weight, they walk with a stoop. It is impossible to wear either a swimming suit or an evening dress. Skin irritation underneath the breast is very common. A similar defect is more common after the age of forty when there is a general increase of body weight. There is a constant dragging sensation on the chest due to the heavy weight, (b) pendulous and sagging type of breasts are due to lack of supporting tissues in the breasts. This is common after repeated child-birth. Dragging sensation, irritation of the skin are common complications. (c) very small under—developed breasts. (d) inverted nipples.

Should persons suffering from these defects undergo plastic surgery?

Yes. Plastic surgery is a boon to these cases. No amount of medication and external application is going to help. It is for the improvement of body function that plastic surgery is advisable. Plastic surgery to-day can reshape the breasts to the form of youthful beauty.

Is operation on the breasts major or minor surgery?

It is a major surgery.

Are both sides operated at the same time?

Yes. Both sides are operated at the same time unless there is a special reason for doing one side only.

What is the usual time taken for the operation?

Usually it takes an hour for each side. In modern day surgery time is not important as the patient is safe even after five to six hours of surgery.

What is the anaesthestia used?

Usually the patient is put to sleep under general anaesthesia. The blood pressure is sometimes reduced artificially at the time of operation so that there is very small amount of bleeding thus making the operation easier and quicker.

How is the plastic surgeon able to judge the final size and shape of the breasts?

By certain measurements depending upon the general size of the patient, the plastic surgeon marks out the site of the new nipple and the amount of skin that is to be taken away. The amount of breast tissue that is removed is judged during operation.

Is the nipple retained to the breasts or it is free grafted?

Both methods are done depending on the age of the patient, size of the breasts, and the type of plastic operation that is done.

What are the structures removed from the breasts when it is reduced and reshaped?

Firstly if the areola is big a margin of its periphery is removed, extra skin and lower part of the breasts itself are both removed in this operation.

Is feeding an infant possible after plastic operation of this type?

Yes. It is possible if the nipple has not been free grafted because the milk ducts of the breasts are still intact with the nipple.

When can the patient go out of hospital?

After fifteen days the patient can easily return home.

When are the stitches removed?

On the seventh to the tenth day.

When can the patient move about in the room?

From the third or the fourth day onwards.

What are the complications likely to occur?

Usually the operation is quite safe in good hands. Stitch abcess may rarely occur. Cut marks of the operation may require trimming if it is broad. This is usually done after a couple of months.

Is cancer common after plastic operation is done?

No.

Is pregnancy permissable after plastic surgery?

Yes.

Are scars visible?

Scars are not seen because they are put on the lower part of the breasts.

What is the per cent of successful operation?

The majority of the operations are successful.

Are the results permanent?

Yes. Except when a person puts on a lot of weight once more.

Is it possible to reduce breasts by measures other than plastic surgery?

It is possible to do this partly by dieting and loosing weight. Plastic surgery alone can render it firm, elastic and shapely.

Can anything be done for an inverted nipple?

Yes. There is a plastic operation for this condition also.

Can a small breast be made larger?

To a certain extent this is possible by using the surrounding fat and incorporating it in the breast tissue. Various other operations of putting foreign bodies beneath the breasts are of doubtful value and also dangerous.

What is gynaecomastia?

This is a condition of increasing the size of the mael breast due ro hormonal imbalance. It occurs in young boys and generally both the breasts are affected.

What is the treatment of gynaecomastia?

The enlarged part of the breast is removed by surgery.

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BOOK SECTION-2

(Contd.)

Retinal Detachment

AND

Its Modern Treatment

BY

Dr. J. M. PAHWA

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Absence of a posterior vitreous detachment in cases of retinal separation probably argues against a idiopathic detachment and should make us think of retinoschisis, with flat or cystic separation of the inner layers of the retina, or of an intra-ocular tumour.

IV. The vitreous body in the treatment of retinal detachment.

The condition of the vitreous body is of definite importance for planning an operation in all cases of retinal detachment.

The traction of the detached vitreous body at the site of horse-shoe-shaped retinal tears lasts or still increases after surgery, thus working against tight closure of the breaks, or eliciting an early relapse by reopening a tear. Hence, real causative treatment of idiopathic retinal detachment should demand removal of these vitreoretinal adhesions; but such an operation is technically impossible. Often the flap of a horseshoe-shaped tear stays elevated at the end of the operation, and even after cure of the detachment (Fig. 39). Thus *firm sealing of the retina to the choroid at the base of the flap* is essential, since just there is the cardinal point of attack of the continuosly pulling vitreous. Electrocautery of that neuralgic point should be done with particular care in those cases, in which a rather atrophic choroid may be expected namely, in old individuals, and in high myopic eyes. In any case the posterior edge of a horse-shoe-shaped tear can be sealed by weaker coagulation. Similarly, immobilization of the patient following surgery, with further immobilization of his eyes by pin-hole spectacles is of particular importance in cases with horse-shoe shaped tears. In cases with a comple-

Fig. 38.

tely separated operculum, and in those with degenerative holes or secondary retinal defects without vitreous adhesions in the area of the breaks, sufficient sealing and lasting cure can be obtained even with less care.

Tears in connection with an adhesion of the vitreous body at the retina far back may cause *high bullous retinal detachment*, particularly in the upper half, often lasting even after immobilization of the patient in a flat horizontal position. In such cases definitive cure cannot be expected by a simple break-closing procedure only, and combination with a globe-shortening operation is required ; retinal folds may persist for some time even after successful operation.

Fig. 39.

In fact, cases of idiopathic retinal detachment with true tears have a less favourable *prognosis* than those with holes, except macula holes in cases of high axial myopia with central atrophy of the choroid. In one of the authors statistics the number of success amounts to 77% in cases with primary holes, but to 67% only in cases with tears.

Postoperatively, *vitreous strands* rather frequently appear in the area of break-closing procedures, in cured cases as well as in failures. Apparently these formations are due to primary vitreo-retinal adhesions, as mentioned above ; reaction following surgery often changes their appearance, and make them better visible to biomicroscopy. Formation of secondary vitreo-retinal adhesions is prognostically unfavourable, particularly if such adhesions develop between the detached vitreous body and pouches of detached retina

far back. However, the common and well known star-shaped retinal folds, due to a peculiar retinal shrinkage, generally do not show adhesions with the detached vitreous body.

As a rule also the detached *posterior hyaloid membrane* is better visible in the optical section after surgery than before, independent from the result. This phenomenon seems to be due to a peculiar reaction at the backside of the detached vitreous body. Besides that an increase of the Tyndall phenomenon in the *vitreous gel*, and behind it in the *subhyaloid space* may occur, often coinciding with an increase of the optical density of the framework tissue, and augmentation of various deposits within the vitreous or at the posterior hyaloid membrane ; similarly, inflammatory elements or blood cells in the subvitreal space may blur vision and the ophthalmoscopical picture of the eyeground, even if we disregard severe subvitreal or intravitreal haemorrhage. In general, vitreous opacities caused by invaded inflammatory elements or blood cells become gradually absorbed, but reactive changes of the framework tissue and of the posterior hyaloid membrane persist. However, from all these rather *common postoperative alterations* severe and lasting disturbance of vision scarcely arises.

Without doubt each kind of retinal surgery may provoke *inflammatory reaction* implicating the vitreous body. Of course, inflammatory reaction is absolutely desired at the site of retinal breaks ; but unwelcome severe inflammation affecting the vitreous body may eventually interfere with the cure of retinal detachment. Inflammatory events in the vitreous cavity favour vitreous retraction, which may terminate into massive vitreous retraction. Hence, only as much inflammation should be provoked as necessary to obtain a definitive cure ; in fact, this point is one of the crags of retinal surgery.

A further cause of increasing vitreous retraction following retina surgery is according to LINDNER *lasting leakage of the vitreous cavity*. This risk must be considered if perforating electrocautery is perfosmed for the purpose of subretinal drainage. Hence, perforating electrocautery just at the site of retinal breaks should be avoided, and also retinal perforation, which cannot be immediately sealed to the choroid. Another complication favouring vitreous retraction is *haemorrhage into the vitreous cavity*. Severe haemorrhages particularly occur following lesion of vortex veins during retina surgery. In the authors experience such haemorrhages can be avoided with great probability by resection of the vein beyond its stepping out of sclera.

As already mentioned above, *risk of massive vitreous retraction* is the greater the more solid vitreous mass is still present in the affected eye, and the less destruction and liqufaction of the framework tissue has already proceeded. Thus especially in younger individuals and in non-myopic eyes particular care must be taken to avoid severe inflammatory reaction, lasting leakage of the vitreous cavity, and eventually intraocular haemorrhage. But exceptionally even a collapsed vitreous body may undergo massive retraction.

Insufficient closure of retinal breaks or its early re-opening may also be followed by marked retraction of the vitreous body, thus leading to the frequent and well known unfavourable behavior of uncured or relapsing retinal detachment. If postoperative inflamatory reaction for any reason does not result into complete break closure, unfavorable influences of the inflammation upon the vitreous map prevail; moreover, retraction of the detached vitreous body may be favoured by continous absorption of aqueous fluid penetrating the vitreous body and passing through retinal breaks towards the choroid, according to the theory

of LINDNER, From the same machanism evantually acute hypotony with deep anterior chamber, iritis, and increase of vitreous clouding may arise. *The greastest chance of cure always offers the first operation*, and its plan and performance is vastly decisive for the fate of the affectted eye.

It is obvious, that *unfavourable vitreous alterations* as mentioned above, namely, overload with inflammatory elements, heamorrhage, or massive vitreous retraction, already existing before retina surgery. imply an unfavourable prognosis. Moreover we have seen how even a well preserved vitreous mass includes some risk of massive vitreous retraction. On the other hand advanced liquefaction of the vitreous gel may favour bullous retinal detachment, because of the penetration of great amounts of vitreous fluid into the subvitreai space through big retinal tears.

To increase the chance of success in retina surgery many authorities recommend the combination of the break-closing procedure with *shortening of the globe*, or with *air injection* into the vitreous cavity or *vitreous implant*. The effect of globe-shortening procedures (scleral resection; buckling etc.) is not only a reduction of the volume of the the globe, and the approach of the sclera and choroid to the detached retina, especially at the site of retinal breaks together with a welcome slight diffuse chorioiditis, it is last not least also the relief of the retina from vitreous eraction which favours replacement of the retina. Globe—shortening procedures are particularly recommendable in cases of unfavourable vitreo—retinal adhesions, and in eyes with massive vitreous retraction. Injection of air into the vitreous cavity, or vitreous implant, may also help to release the detached retaina from a pulling vitreous body.

A quite serious event in retina surgery is *vitreous loss*. This complication may occur if electrocautery is applied

to a previously already coagulated area, in which the sclera may break. As long as the retina is not injured, a pearl of vitreous mass herniates in the scleral gap, covered by transparent retina. Immediate softening of the globe by paracentesis of the anterior chamber makes sometimes reposition of the vitreo-retinal prolaps, and suturing of the scleral wound possible. Otherwise the prolaps gradually increases, and finally solid vitreous escapes. Vitreous loss may further arise in doing scleral resection. That is one of of the reasons why lamellar resection, or merely scleral folding, is preferred to penetrating resection by many surgeons, though penetrating scleral resection must be considered one of the most enduring and effective procedures among all mothds of shortening the globe. The peril of vitreous loss is minimal as long as sufficient softening of the globe is achieved during resection by drainage of subretinal fluid, or eventually by repeated paracentesis of the anterior chamber. Moreover, one should always know how much liquid is present, suitable for drainage during surgery, and how far the vitreous is detached and retracted from the eyeground. Loss of vitreous is not only followed by massive vitreous retraction, but also by formation of strands within the framework, aiming at the site of the perforations; it is quie similar image as in cases of perforating injury, The mischief is often still increased by a supervening intraocular haemorrahage. In the majority of cases these eyes go lost, Finally, vitreous prolaps may occur in aphakic eyes, if paracentesis of the anterior chamber is done. Therefore globe-shortening operations of aphakic eyes should be intended with subretinal drainage exclusivly.

Among the problems concerning vitreous body and failures of retinal surgery the question arises, whether there are cases in which solid *vitreous may pass through retinal*

breaks and come behind the detached retina, thus being an obstacle for the replacement of the retina. Such an event is not conceivable, except in cases with giant tears, particularly those at the ora serratea, with inverted retina, and the author himself does not remember cases in wich he should have seen such a condition biomicroscopically. However, vitreous conditions during surgery in recumbent position of the patient may vary from that seen in a sitting individual with a biomicroscope.

Air injection into the vitreous cavity or vitreous implant destroy vitreous framework tissue, and favour vitreous liquefaction. Thus retracting forces of the vitreous body may decrease. Strong vitreous adhesions are not removed, and the situation of the posterior hyaloid membrane does not seem to change.

Finally, *Preventive treatment* of idiopathic retinal detachment should not in the last place be based on the biomicroscopical findings regarding its pathogenesis. The stage of imminent retinal defect appears to be essentially characteriszed by a posterior detachement of the vitreous body with collapse and an unfavourbale form of vitreo-retinal adhesion, and by degenerative retinal changes. If such conditions can be revealed, practical use should be made of these findings for active prophylaxis. In any case, myopic and senile patients with a collapsed vitreous body should avoid severe body shakings, and unaccustomed strong work. At the stage of latent retinal defects early break.closing operation is indicated in cases with primary horse-shoe-shaped tears; in the case of a freely flloating torn-oui operculum, and in degenerative retinal perforations cautious reserve ls justified. Also in cases of primary retinal splitting or primary retinal cysts preventive operation is only rarely urgent. In doing prophylatic

surgery a minimum of vitreous involvement is essential. Well localized surface diathermy needling light-coagulation are the procedure of choice.

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CAPTIONS OF ILLUSTRATIONS

(CHAPTER IV)

Fig. 19. Incidence of posterior vitreous detachment in axial myopia (RIEGER).

Fig. 20. Discrete opacities in the detached posterior hyaloid membrane (RIEGER, VOGT).

Fig. 21. Ring shaped fenestrated opacity in the detached posterior hyaloid membrane, seen with the slit-lamp. (Caplenalready passed).

Fig. 22. Vitreous shock causing a retinal tear (LINDNER).

Fig. 23. Collapsed vitreous body with a very peripheral insertion of the posterior hyaloid membrane (FAVRE and GOLDMANN).

Fig. 24. Collapsed vitreous body with perpendicular insertion of the posterior hyaloid membrane at the upper retina (FAVRE and GOLDMANN).

Fig. 25. Posterior vitreous detachment with an isolated vitreo-retina synechia.

Fig. 26. Adhesion of the detached vitreous body along a retinal blood vessel.

Fig. 27. Horse-shoe-shaped retinal tear. Fixation of the torn flap to the detached posterior hyaloid membrane.

Fig. 28. Retinal tear, the completely separated operculum being fixed to to the detached posterior hyaloid membrane (BOCK).

Fig. 29. Small retinal hole without connexion with the detached vitreous body.

Fig. 30. Topography of retinal tears and holes.

Fig. 31. Tractus hyaloideus, exceptionally well visible with the biomicroscope (GOLDMANN).

Fig. 32. Complete posterior vitreous detachment with collapse.

Fig. 33. Complete posterior detachment, simple type.

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Published by M. Umapathi at 57, Burkit Road, Madras 17 and Printed by Krishna Srinivasan at Industries Press, 63, Usman Road, Madras 17. Editor: Dr. B. Rama Rau B.Sc. M.B., B.S.

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