by having a say in the appointment and control of his staff, expects whole-hearted co-operation and loyalty.

Consultants are now paid in hospitals such as those of the London County Council, some being whole-time and others part-time. The question is, Will the future generation of consultants be willing or able to serve as honorary members of the voluntary hospital staff? The answer is not far to seek. The traditions of the voluntary hospitals must not be lost, as they are a bulwark against a completely socialistic scheme of State service. Co-ordination of the hospitals is being achieved to some extent by the establishment of the Emergency Medical Service hospitals and by the Nuffield Provincial Hospitals Trust. These are on the lines of central councils and hospitals, with regionalization of areas. The Council of the King Edward's Hospital Fund for London has done much to improve the buildings and equipment of the voluntary hospitals. Would a whole-time State Medical Service give the same incentive to original research as the voluntary system? Would promotion depend upon clinical or administrative ability?

Participation of the G.P.

In general practice, midwifery has declined to a great extent owing to the efficiency of the midwives services, the establishment of clinics and hospital beds, and also because of the unsuitability of patients' homes. The decline of the birth rate is also a factor.

The national health insurance does not directly include the treatment of midwifery patients, nor does it give special consultant services and hospital accommodation. The panel doctor is too busy to take up midwifery practice with its inadequate remuneration, and he objects to the risk of criticism from local health authorities if cases should go wrong. Cottage hospitals have a limited number of local practitioners in attendance, and others may be excluded from the treatment of their patients when admitted. Small maternity homes should be established where the family doctor can admit and be responsible for the treatment of his own patients. Consultants and auxiliary services should be available from a larger supervising hospital centre.

In rural areas the family doctor would act in a part-time capacity, as he would have to undertake other branches of medical practice. Women prefer local hospitals, where they can be kept in touch with their families and relatives. The family doctor has been the trusted adviser and confidant of his patients as is the priest and lawyer. He is chosen because of the personal element. He knows the home conditions and circumstances as no whole-time practitioner or consultant can know. In official centres case records are open to the inspection of a staff which is under no Hippocratic oath. Consultation clinics do much to relieve the anxieties of the general practitioner, and discussions can take place as to diagnosis and treatment. The family doctor is, moreover, the first line of defence in the case of disease. But the doctor must have adequate training and must keep up to date by regular refresher courses in larger centres.

A team of doctors and midwives working in collaboration with a keen medical officer of health would ensure good results in these areas. Local clinics or centres could be established for interviewing and treating patients, but such centres would have to be instituted by the local health authority, as otherwise there would be difficulties of administration. Payment for work done would be given by the health authority and collected, when possible, from those patients who could afford to pay or who are specially insured. If any criticism arises it should be considered first by the committee of local practitioners and consultants before being judged by a lay board of management.

In Scotland, domiciliary midwifery is more in the hands of the general practitioners than it is in England and Wales. The midwives work directly under the doctor. The Scottish Board of Health Act, 1937, was a scheme for this co-ordination of practitioners, midwives, and consultants, and it has been established in a large number of areas. Lanarkshire, with its central maternity hospital at Bellshill, is a notable example of its efficiency. The patient has a choice of doctor from the local team of practitioners. The consultants on the staff of Bellshill Hospital must hold the membership or fellowship of the Royal College of Obstetricians and Gynaecologists.

A Basis for Discussions

The Russian public health services seem to provide a basis for many discussions on proposals for a State Medical Service in this country. In Russia all medical education is free and all doctors are whole-time practitioners under the U.S.S.R. The whole aim of the service is the prevention of disease. Every citizen has a right to free medical treatment. Some of the expense is recovered by contributory schemes of health insurance. Women in employment get full pay before and after confinement if off work. The medical practitioners get study-leave and retire on pensions. In the local areas are health centres or polyclinics, and these are linked up with larger centres and hospitals. The teaching schools and research department form the centre of the scheme. Local and central committees or soviets control administration.

A maternity service should give the patient a choice of doctor at the periphery, and consulting and specialist services should work towards the centre. There should be a central advisory committee composed of representatives from the universities, the Royal College of Obstetricians and Gynaecologists, the British Medical Association, Central Midwives Board, College of Midwives, hospitals, and other organizations interested in the practice of midwifery. The administration of such a maternity service should be in the hands of those who have a considerable knowledge of the practical side of obstetrics as well as of public health.

HYPEROSTOSIS FRONTALIS INTERNA*

BY

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Irregular formations of bone on the internal table of the skull have often been observed at post-mortem examinations and among museum specimens, but little notice was taken of the condition until Stewart in this country and Morel in France drew attention to the presence in these cases during life of symptoms suggestive of hypothalamic disturbances.

Cases in the Literature

Stewart (1927–8) recorded 5 fatal cases personally observed by him and called attention to their association with mental symptoms and obesity; and Morel (1930), describing the first living case, noted the presence of cataleptic seizures, excessive eating and drinking, adiposity, and delusions and hallucinations. There followed various surveys of radiological and museum material with a view to determining the frequency of the syndrome, notably by Sherwood Moore (1935, 1936a, 1936b), who carried out a survey of 6,650 radiographs accumulated over a period of 24 years; by Eldridge and Holm (1940), who described the *x*-ray findings in 200 patients consecutively admitted to a mental hospital; by Greig (1928), who examined 188 crania in the museum of the Royal College of Surgeons of Edinburgh; and by Yolton (1927–31), who described 4 specimens. The histories of many of these cases were reviewed, and in the last 12 years numerous additional cases have been published, notably by Van Bogaert (1930), Schiff and Trelles (1932), Eisen (1936), Moniz (1938), Hemphill and Stengel (1940), Gollan (1939), Casati (1936), Fracassi and Marelli (1936), Fattovich (1938), Roger (1938), Perkins and Biglan (1938), James (1936), Lehoczky and Orbán (1938), and Reider (1938–9).

Bartelheimer (1939a, 1939b) specially noted the association with diabetes. The literature on the subject is now fairly extensive, and it is interesting to note in this connexion that only 3 living cases were recorded before 1935—those of Morel (1930), Van Bogaert (1930), and Schiff and Trelles (1932). In view of the large amount of museum material it would seem that many examples of the syndrome were missed prior to that date. This argument, however, is hardly conclusive, for the surveys of radiological and museum material have shown that hyperostoses

* Synonyms: Morgagni's syndrome (Henschen, 1936); syndrome of Stewart-Morel (Schiff and Trelles, 1932) metabolic craniopathy (Moore); intracranial osteophytes (Greig, 1928).

may be present without any symptoms, the patient dying from some unrelated disease. It seems clear from published observations that the hyperostoses are often present for a long time before any further symptoms develop. Bartelheimer, for example, noted that a patient of his had a chronic headache for 30 years before further symptoms appeared. About 50 cases in which definite hypothalamic symptoms were present, such as disordered fat metabolism, raised glucose tolerance, polyuria and polydipsia, and sleep disorders, have been recorded during life. In addition many of the patients have developed a progressive dementia, and in a few cases cranial nerve palsies have been noted, probably due to encroachment of new bone on foramina.

The marked preponderance in the female sex noted by Moore, Canavan (1938), Greig (1928), Dressler (1927), Carr (1936), and others serves to differentiate this condition sharply from a localized form of leontiasis ossea and from osteitis deformans, to which the bony changes bear a close resemblance in some cases. Some writers have, in fact, described cases under these heads—e.g., Schuller (1918), Bonnamour and Jamin (Morel, 1930). Another notable feature is the age incidence. The great majority occur about the menopause. Some, however, have been found among senile inmates of mental hospitals.

Radiological examination usually shows the hyperostosis as an irregular thickening of the vertical part of the frontal bone, the region of attachment of the falx being free. The surface may be irregular, with numerous spikes, or smooth and nodular. The outer table is never involved. In a few cases calcified masses have been seen in the sella turcica.

Careful microscopical examination of the hypothalamic region and pituitary has been made in only a few cases. Degenerative changes have been described by Morel, Stewart, and others, but in some cases nothing abnormal has been detected. It would seem, however, that the close association in function of hypothalamus with pituitary has not been realized by all observers, and in some instances failure to make a detailed examination of the pituitary may account for negative findings.

Case Record

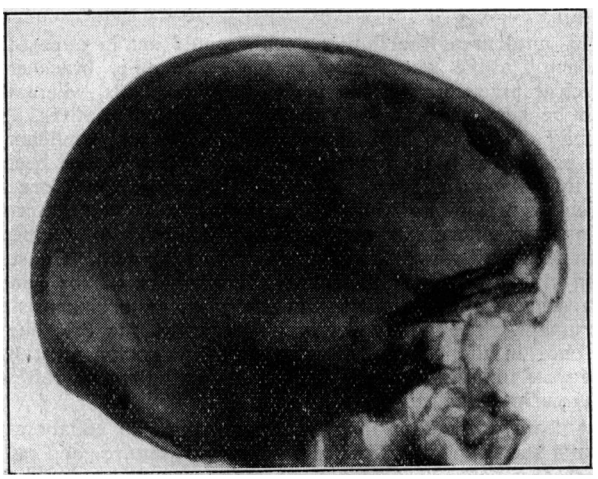
The patient, a female wardrobe dealer aged 45, had married twice and had had 10 living children. She had had one miscarriage—triplets when five months pregnant, in 1935. She had white-leg after this, and was of the opinion that all her trouble started then, as she had never felt well since. She began to have menorrhagia, with periods lasting eight days and intervals of two weeks. Hysterectomy—probably for fibroids—was performed in 1936 when three months pregnant. Between Aug., 1937, and Aug., 1940, she was four times in hospital with phlebitis of the left leg. In Aug., 1940, while in hospital, she was found to have glycosuria ; a diagnosis of diabetes was made after blood-sugar estimations, and she was discharged on a 7-line diet and 40 units of insulin a day. Towards the end of 1939 she began to have narcoleptic attacks, which led to a cessation of insulin treatment, as they were thought to be hypoglycaemic. Later, however, insulin treatment was resumed, and subsequent attacks were considered to be due to diabetic coma.

The patient was evacuated to Cornwall in Oct., 1940, and was admitted to the Royal Cornwall Infirmary for suspected hypoglycaemic coma on March 14, 1941. She recovered consciousness shortly after arrival in hospital, but had several attacks in the next few weeks. Her weight had always been constant until the middle of 1940, when she suddenly began to gain. As this time coincided approximately with the beginning of the period of strict rationing, the gain in weight was considered odd. She was 11 st. 10 lb. on admission, having put on 2 st. in 9 months. There was no complaint of failing vision, but she noticed that before her sleepy attacks she went rather deaf. Her most troublesome symptom, apart from the attacks of somnolence, was a dull frontal headache which nothing seemed to relieve. There was no thirst, appetite was moderate, and the amount of urine was not increased.

Examination showed her to be of average mental development, with good memory and normal concentration ; she was talkative and sociable, always ready to discuss her large family, with each of whom she kept up a correspondence. Pupils reacted sluggishly to light, more briskly on accommodation. Both optic disks were pale, especially in the temporal halves, and both visual fields showed concentric contraction. Moderate nerve deafness was present on both sides. There was general muscular weakness, particularly in the arms. The arm reflexes were normal ; knee- and ankle-jerks were present ; the plantar reflexes were flexor ; and the gait was steady. No rhombergism and no incoordination to finger–nose or heel–knee tests were observed. There was a remarkable dulling of pain sensation on both sides over the trunk and all four limbs: so definite was this that a needle could be introduced anywhere without complaint of pain. Stereognosis was normal. Tactile localization and discrimination, compass points, and joint sense were also normal. The heart was slightly enlarged, and the blood pressure 160/80. The liver was palpable an inch below the costal margin. There were noticeable fat deposits on the buttocks, thighs, and lower abdomen, but no nodules and no tenderness.

Narcoleptic Attacks.—These came on at irregular intervals. Sometimes there would be several in a day, sometimes freedom for a week. They lasted from a few minutes to an hour, and occurred at any time of the day. None was observed during the night. They started with a dull headache that lasted for several hours, after which she passed into a sleepy state and could be roused with difficulty. The pupils were normal in size, but no reaction to light could be obtained during the attack. The limbs were spastic, with exaggerated deep reflexes, but the plantar reflexes remained flexor. Ankle clonus was observed on both sides on one occasion. During the attacks she perspired profusely, and on being roused complained of feeling cold. Pain sensation, visual fields, and hearing, tested roughly during the period of recovery, showed further restriction. Onset and termination were never abrupt. Once she had visual hallucinations when recovering from an attack. The blood sugar during one attack amounted to 130 mg. per 100 c.cm.

Glucose tolerance estimated in a clear interval showed: fasting blood sugar, 150 mg. per 100 c.cm. ; one hour after, 210 mg. ; two and a half hours after, 190 mg. The blood urea was 29 mg. and the serum calcium 9.8 mg. per 100 c.cm. The cerebrospinal fluid was clear, and showed no increase in pressure: cells 2 per c.mm. ; albumin 0.025% ; globulin normal ; chlorides 750 mg. per 100 c.cm. ; sugar 0.08%. Urine examination revealed glycosuria on an average of three days out of four. Specific gravity averaged 1026. There was nothing abnormal on microscopical examination. The temperature chart showed several unaccountable rises to 99.4°, but was otherwise normal. Radiologically, no changes were present in any bones other than those of the skull, a radiograph of which is here reproduced.



Hyperostosis on the internal surface of the frontal bone. Diploe is invaded at one point, but the outer table is not involved. Antero-posterior view, midline free; enlarged frontal sinuses.

During her time in hospital she had one troublesome attack of phlebitis in the left leg. The narcoleptic attacks were so well controlled by 10 mg. of benzedrine sulphate daily that in the three weeks previous to discharge she had only one attack of short duration.

Discussion

In view of the association of pituitary and other endocrine function, present interest centres largely on the possibility of the bony changes being due to some disorder of parathyroid secretion. While it can hardly be said that the secretion of a parathyrotrophic hormone by the pituitary has been proved, a number of observations are at least suggestive—e.g., the association of parathyroid adenomata with hypophysial tumours noted by Hadfield and Rogers (1932), Gerstel (1938), Husslein (1939) ; the degenerative changes in the parathyroids of hypo-

physectomized dogs noted by Koster (1928), Houssay and Sammartino (1933, 1934), and Smith (1927); and the effects of pituitary extracts in causing parathyroid enlargement, noted by Anselmino and others (1935). In an examination of the parathyroids reported by Hemphill and Stengel (1940) it was found that three of the four glands present were unusually small. The three smaller glands showed an increase of pale oxyphil cells; the fourth was formed exclusively of these. These changes suggest overactivity in a set of glands which for some reason were smaller than normal. Serum calcium changes have been noticed in only a few cases; in a series examined by Tager, Shelton, and Matzen (1939) the figures were within normal limits.

Further problems are those presented by the high incidence in the female sex (98% in Moore's series) and the restriction of bony changes to the frontal bone.

From the point of view of diagnosis the importance of the syndrome lies in the danger of treating the patient for something she has not got. My patient has been treated once as a case of hypoglycaemia and once as a case of diabetic coma. The fact that she was insulin-resistant probably saved her from harm on that occasion. In some cases, however, a diagnosis of cerebral tumour has led to unnecessary operation. A knowledge of the existence of the syndrome should serve to protect from these mistakes, and a radiograph of the skull which includes the frontal bone will always serve to establish the diagnosis.

Summary

A case of hyperostosis frontalis interna is described and the literature briefly reviewed. Features of the case were narcoleptic attacks controlled by benzedrine, increased glucose tolerance, sudden gain in weight, restricted fields of vision, nerve deafness, and typical radiological findings.

The importance of the syndrome lies in its differentiation from conditions requiring active medical or surgical intervention.

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P. Robinson (*Amer. J. Dis. Child.*, 1941, **62**, 701) during the last two years has seen at Tel Aviv six cases of favism, an acute haemolytic anaemia due to ingestion of woad berries (*Vicia fava*) and hitherto unknown in Palestine. Favism is most common in Sicily and Sardinia, but only sporadic in other countries. The onset is sudden, with vomiting and diarrhoea, the skin turns pale grey, the eyes become sunken and consciousness clouded. The red cells sink to 1,000,000 or less per c.mm. and the haemoglobin content to 10%. Recovery, which begins spontaneously, is assisted by blood transfusion and takes place in from one to two weeks. Deaths are rare. Its course is like that of Lederer's anaemia, but in favism relapses are common.

ACUTE LARYNGITIS AND SEPTICAEMIA DUE TO H. INFLUENZAE (TYPE B)

BY

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Attention has recently been drawn by Sinclair (1941) to a very severe and often fatal form of acute laryngitis and septicaemia in young children due to *Haemophilus influenzae*. These infections have occurred with increasing frequency in the U.S.A., and the following case is the first of a similar nature to be recorded in this country.

Case History

A male child aged 2 was admitted on Dec. 15, 1941, for laryngeal stridor. He first became ill 2 days previously, when he began to scream, and it was noticed that his breathing was difficult. This persisted until admission.

On examination the temperature was 101° F., the pulse rate 156, and the respirations 28 a minute. The latter were accompanied by inspiratory stridor and recession of the intercostal spaces. The uvula and fauces were symmetrically swollen and very hyperaemic, but no membrane was visible. Laryngeal diphtheria was diagnosed, and 65,000 units of antidiphtheritic serum were given intramuscularly in 5 doses over 12 hours. The laryngeal obstruction was so severe that tracheotomy was done 3 hours after admission, and while this relieved the stridor and temporarily improved the pulse rate, the latter and the respiration rate soon returned to 160 and 32 respectively. The clinical condition remained poor, the child being prostrated. On the 18th a pleural rub appeared at the right base and he was put into an oxygen tent. The following day there were signs of bronchopneumonia, for which sulphanilamide was given. He died in coma on the 21st, 6 days after admission.

Bacteriological examination of a throat swab on admission gave a growth of *Corynebacterium hoffmanni*, which was confirmed on Horgan and Marshall's medium. Swabs taken from the larynx at the tracheotomy gave a pure growth of *H. influenzae*. Repeated swabs from the nose, throat, and larynx failed to grow *C. diphtheriae*. The blood count showed haemoglobin, 74% (Haldane); white cells, 9,600 per c.mm.

Necropsy

This was performed 22 hours after death, and revealed a well-developed, well-nourished male child with no external abnormality except a clean tracheotomy wound. The pericardial sac was distended with approximately 80 c.cm. of thick yellow purulent exudate, which was moderately adherent to both layers. The myocardium, endocardium, valves, coronary arteries, and great vessels were normal. The larynx, glottis, trachea, and main bronchi were normal except for a clean incision in the trachea. Both pleural cavities were filled with thick yellow pus extending into and encysted in the interlobar septa. The lungs were compressed but air-containing, and exuded a little frothy fluid on pressure. No pneumonic consolidation or bronchitis was detected. The mediastinal glands were slightly enlarged and congested, but were otherwise normal. The mouth, fauces, tonsils, pharynx, oesophagus, stomach, intestines, mesentery, and peritoneum were normal. The liver was enlarged and pale from fatty change. The gall-bladder, biliary passages, and pancreas were normal. The spleen showed lymphoid hyperplasia only. The genito-urinary, endocrine, and central nervous systems were normal.

Microscopical Examination.—Sections from the heart and lungs revealed severe purulent inflammation and numerous Gram-negative bacilli. The lung parenchyma showed a little albuminous fluid in the alveoli but no evidence of inflammatory disease. In the liver there was severe fatty change only.

Bacteriological Examination.—Cultures from the pleura, pericardium, and heart blood gave a pure growth of *H. influenzae*. The cultures grew well on boiled blood agar, and the colonies were smooth; suspensions in normal saline were agglutinated* by Type B serum to a titre of 1/100. No agglutination was observed with Types A, C, D, and F in any dilution.

Discussion

It is difficult to evaluate the pathogenicity of *H. influenzae* in man owing to many strains which appear to lead a saprophytic existence in the human nasopharynx; while others

* These sera were made available through the kindness of Dr. Margaret Pittman of the U.S.A. Public Health Service, to whom I am greatly indebted.