THE PREVENTION OF EPIDEMICS OF INFANTILE PARALYSIS.

Although this country has been spared any such extensive outbreaks of acute poliomyelitis as have visited America and Scandinavia, a number of limited epidemics have occurred, and the disease was unquestionably unduly prevalent during the summer of 1910. It has, if we mistake not, been made notifiable in certain districts, and any measures of a preventive nature demand attention. Allen Starr deals with these in a recent paper (New York Med. Record, 5th August 1911). It is believed that the disease was disseminated throughout America by Scandinavian immigrants, and Flexner's researches show that it is due to an as yet unknown infectious agent which is present in the cerebro-spinal fluid and probably in the blood of patients. It is communicable, and the infectious material exists in the nose and throat. It is probable that it is through the inhalation of infectious particles which lodge in the mucous membrane of the nose and throat that the infection enters the system. Granting these facts, the following are the means of prevention:—(1) Isolation of patients as if suffering from diphtheria or scarlet fever (including disinfection of clothes, utensils, etc.). (2) Disinfection of the nasal and buccal mucous membranes by means of sprays of boric lotion. (3) Spraying of the noses of children who are exposed—e.g. as when a case occurs in a school. (4) As the contagious material persists for several months in the nasal secretion of patients, disinfection of the nose should be kept up for three months. (5) Urotropin given internally to monkeys which are subsequently exposed to the infection of this disease lessens their liability; given immediately after inoculation it mitigates or even prevents the symptoms. Urotropin should therefore be given early—as soon as the disease is suspected; it ought also to be given to children who may have been exposed. The early application of these preventive measures depends on the prompt recognition of the disease, hence prophylaxis is unquestionably a diagnostic problem. An absolute diagnosis can seldom be made within the first three days, but in Starr's opinion it is imperative, when there are indefinite febrile symptoms and poliomyelitis is known to be prevalent, to administer urotropin and disinfect the nose without waiting for an absolute diagnosis. For a child of 2 or 3 the dose is 2 grs. every six hours; for
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a child of 6 to 10, 3 grs. Unfortunately the blood-count in the early stage is not of any diagnostic value, but lumbar puncture may give some information. In several cases examined on the third day some changes were found. The amount of cerebro-spinal fluid was slightly increased, so that on puncture the flow was more rapid than normal. The fluid was either quite clear or (more frequently) slightly opalescent, and contained a few lymphocytes and polymorphonuclears. The fluid also gives a protein reaction with Noguchi’s butyric acid test. These changes apparently occur before paralysis develops. The protein reaction is not present in tuberculous meningitis. It is not unlikely, therefore, that by lumbar puncture an early diagnosis may in the future be possible, and if urotropin be promptly given the symptoms may be mitigated.

Progressive Lordotic Dysbasia.

Under the somewhat cumbrous name "Dysbasia lordotica progressiva, dystonia musculorum deformans" Oppenheim (Neurologisches Centralblatt, 1st October 1911) describes a remarkable nervous disease, the significance and classification of which present many difficulties. He has met with several cases within the past five years, and in the earlier of these his diagnosis wavered between hysteria and idiopathic bilateral athetosis, but further experience convinces him that the disease is a special one. He gives the notes of four cases, and from them and some others outlines the clinical picture. Children from 8 to 14 years are affected, without predilection for either sex. All his cases have been in Russian or Galician Jews. The disease develops gradually, the symptoms beginning as a rule in the arms and soon extending to the legs; the muscles which are invariably most affected are those of the thigh, pelvis, and spine which come into play in walking. The disease is, in fact, a special type of astasia-abasia. When the patient is lying down the signs that anything is wrong are few and insignificant, but if he stands, or still more when he attempts to walk, the symptoms are striking; then the outstanding feature is marked lordosis or scolio-lordosis, with great inclination of the pelvis and projection of the buttocks. Even when the patient is standing the legs are kept slightly flexed at the hips and knees, and he may be driven to support the weight of the body mainly on one leg. When he walks the anomalous attitude is accentuated. The gait is, Oppenheim states, the most peculiar and striking he has come across—much more remarkable than is ever seen in either poliomyelitis or dystrophics—so remarkable as to arouse, at first, the idea of acting or of hysteria. The lordosis increases, and the back is thrown back or bent forward and to one side. This is carried to such an extent that the trunk may be almost horizontal, and the patient is compelled to support himself either by a stick or by placing his hands on his thighs. The position during
walking is not stable, but alters with progression in a somewhat regular systematic manner. A gait of this kind is naturally exhausting, and after a few steps the patient flushes and perspires, and the muscles begin to tremble from fatigue. Having observed this extraordinary mode of progression, it comes as a surprise to find that when the patient lies down on his face or his back most of the symptoms disappear. The lordosis usually goes completely; the spasm of the legs may not relax quite completely, but, at most, slight eversion or inversion persists. It is, however, obvious that the anomalous muscular action is almost exclusively bound up in the act of walking. Implication of the arms is chiefly shown by cramps associated with writing. On examining the patient while at rest (lying down) there is no paralysis, and active movements in all directions can be performed without difficulty. There is nothing in the way of athetosis, though slight passing tremors of some of the muscles may occur. Some muscles, however, show slight tonic spasm, especially the biceps in the upper arm and the rotators of the thigh. None of these, however, seems to be an essential feature of the disease. What is very remarkable is that on testing the passive movements of the limbs there is well-marked hypotonicity, alongside of the above tonic spasm of isolated muscles. The tendon jerks are markedly enfeebled in most cases. In other respects the findings are negative. The disease therefore consists of an alteration of the muscular tone—on the one hand hypotonia, on the other a tendency to tonic contraction, which, however, is chiefly manifested during standing and walking. The disease is a steadily progressive one. It bears some resemblance to chronic chorea and to bilateral athetosis, but Oppenheim thinks it is essentially different from these, though possibly cases intermediate between it and athetosis may exist. He believes that it is an organic, not a functional, disorder, due to fine changes in the regions of the nervous system which control muscle tonus. Oppenheim suggests as the best name, Dystonia muscularis deformans—“dystonia” to imply the association of hypo- and hyper-tonia.

UROBILINURIA IN THE DIAGNOSIS AND PROGNOSIS OF CROUPOUS PNEUMONIA.

Hildebrandt (Zeitschr. f. klin. Med., Bd. lxxiii. Hefte 3-4, 1911) points out that in uncomplicated croupous pneumonia urobilinuria is a constant occurrence, and proposes to utilise this fact in diagnosis and prognosis. Urobilin results from the action of reducing bacteria of the intestine on the bilirubin and biliverdin of the bile. Normally it is taken up from the intestine by the portal vein and returns to the liver, and only a small fraction reaches the general circulation and is excreted by the kidneys. In pneumonia the exudate in the lungs
contains much haemoglobin, which is broken up in the body and excreted by the liver as bilirubin. Following this, there is an increased production of urobilin in the bowel, and consequently an increased absorption of it by the portal vein. The liver cells are thus doubly taxed—first, by the excess of hemoglobin they must break up, second, by the excess of urobilin they have to excrete. If they are unequal to the task, more or less of the urobilin is not re-absorbed in the liver, but passes by the cells into the general circulation and is eliminated in the urine. In pneumonia there is often an acute parenchymatous hepatitis, which affects the functions of the liver cells. This is the explanation, then, of the fact of urobilinuria in pneumonia. Hildebrandt's paper contains a number of charts of pneumonia showing the relation of the urobilinuria to the temperature curve, and from these data it appears that:—At the beginning of a pneumonia urobilin is but slightly increased, even if the temperature is high. When the pneumonia is resolving the output of urobilin reaches its maximum. When resolution is complete the urobilin sinks to normal. Urobilinuria, therefore, is related to the resolution of the pneumonic process, and is caused by the relative inadequacy of the liver cells. When urobilinuria pursues the above course, sinking rapidly to normal after the lung has cleared, there is evidently no serious damage to the liver. If urobilinuria persists after resolution it is proof of parenchymatous hepatitis, which necessitates a more protracted convalescence, and may lead to chronic liver disease. In central pneumonia without physical signs the urobilin curve is of diagnostic value. For his methods of estimating urobilin Hildebrandt's other papers on the subject (referred to in this paper) should be consulted.

Auto-Serotherapy of Sero-Fibrinous Pleurisy.

Gilbert was the first to inject a few cubic centimetres of the pleuritic exudate under the skin of the patient from whose chest it had been withdrawn, and his method of treatment has been successful in the hands of some French clinicians, while others have found it useless. Maillet, in a general review of the subject (Gaz. des Hôpitaux, 25th March 1911), finds that in 155 cases culled from the literature, 132 were completely successful. The method consists in withdrawing a few cubic centimetres of fluid from the pleura with a small syringe, and, without taking the needle altogether out, reinjecting the fluid under the skin of the thorax. The injections are repeated three or four times, at intervals of two or three days. The treatment has been used in all forms of pleurisy with effusion. The results of injecting are—(1) diuresis; (2) resorption of the effusion, taking place with unusual rapidity; (3) perspiration; (4) pyrexia. Acute pleurisies give the best results, but effusions of long standing have speedily disappeared after
a few injections. Three explanations of the beneficial action of these injections have been proposed—first, that the fluid sets up a specific defensive reaction; second, that the serum acts as a diuretic; third, that it is the withdrawal, not the reinjection, of the fluid which does good. Maillet's conclusion is, that as the treatment is not dangerous it should have a trial in all cases. He suggests that it would be advisable to withdraw a larger quantity of fluid (20 to 50 c.c.), and then to reinject 2 to 5 c.c., the object being to obtain the benefit both of aspiration and auto-serotherapy.

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**SURGERY.**

By JAMES LOCHHEAD, M.D., F.R.C.S.

**Hæmostasis in Brain Operations.**

1. *Silver-Wire Clips as Ligatures.*—On the principle of Michel's clips silver-wire clips for the occlusion of deep vessels have been introduced by Cushing in operations on the brain and other parts of the body (*Annals of Surgery*, July 1911). Silver wire is rolled on a flat metal pencil with longitudinal grooves, and lightly tapped so as to form transverse ridges on the inner side of the loops. Deep median grooves on the pencil allow a pointed wire-cutter to snip the several loops of the same size. They are then loaded on a magazine and picked up one by one by means of holding forceps. These have an indentation on the inner face of each blade, in which the wire securely lies. The forceps are provided with a ratchet, the first catch of which locks the handles in such a position that they hold the compressible clip without crushing it. When the clip is pressed together on the bleeding point the handles unlock themselves.

The clips have been found useful for the occlusion of inaccessible vessels in the dura, the middle meningeal at the foramen spinosum, and vessels passing from the brain to a tumour. They are also recommended for other regions, e.g. the artery of the cystic duct, the inferior thyroid veins in the enucleation of an intra-thoracic goitre, and the bleeding points after tonsillectomy.

2. *Methods of Hæmostasis in Brain Operations.*—In intra-cranial stasis, in which most of the venous blood returns by way of the emissary veins, hæmorrhage from the scalp may be excessive. Cushing deprecates the use of artery forceps on the convex side of the flap, as their weight tends to tear the scalp from the bone, and the catching of the skin edge in clamps. It is usually possible to control the bleeding by a properly applied tourniquet round the head. It is inadvisable to try to ligate the vessels, as the skin sutures effectively control them. In the