No pecuniary interest is attached by Togna to his concept, but he has a profound conviction of the benefit of exercises in the bath to his family, his friends, and himself, and a desire to make it known by publication of pamphlets and a book illustrated by photographs. I myself have acquired the habit of these exercises and found them of benefit at my age, now 84, in keeping my body supple and fit in all parts.

There can be no doubt, I think, that these exercises offer a valuable means of bringing at bay the decadence of the ageing processes by keeping up bodily energy, and quite possibly warding off heart disease.

Recently I have had a fresh series of observations carried out on Mr. Togna by the Clinical Research Association to ascertain: (a) the oxygen consumption under basal conditions; (b) the increase in oxygen consumption during three types of bath exercises; (c) the rate of oxygen consumption up to two hours after the exercises; and, for comparison, (d) the oxygen consumption while performing mild exercises (standing run) in the air.

The values obtained and the physical conditions are shown in Table I. The results of tests on three subjects exercising for the first time are shown in Table II.

Comment

It will be seen that the criterion by which the value of the exercises must be judged is the oxygen consumption per pulse beat (column *f*) when taken in conjunction with the blood-pressure reading (column *h*). On this basis it will be seen in the case of Togna that with the standing-run exercise in air the oxygen consumption per beat is 14.9 c.cm.: this is accompanied by a marked rise in both the pulse rate and the blood pressure. The exercises in the bath, however, produce a high rate of oxygen consumption per beat (in the case of Type III exercise, more than the standing run in air), and this increased oxygen consumption is obtained with only a slight increase in the pulse rate and accompanied by a drop in the blood pressure. In my case the oxygen consumption per pulse beat increased from 4.0 to 6.2 and the blood pressure fell from 192/96 to 168/86.

The values obtained one and two hours afterwards are interesting; it will be seen that the oxygen consumption per beat is still increased over the basal value, showing that the increased oxygen consumption is maintained for some time after the tests.

General François Daubenton, of the Netherlands, has been appointed to the post of chief of the W.H.O. Office for Africa. Dr. Daubenton was formerly public health consultant to the W.H.O. Regional Office for the Eastern Mediterranean, and headed the W.H.O. mission in Ethiopia. The newly created W.H.O. office for Africa will be located at Geneva until a permanent regional organization for Africa has been established. Three such organizations have already been set up by W.H.O.—in New Delhi, for South-east Asia; in Alexandria, for the Eastern Mediterranean; and in Washington (Pan-American Sanitary Bureau), for the Americas. In addition, a temporary office for the Western Pacific is functioning in Hong Kong, and Geneva is the seat of the W.H.O. Office for Europe. Dr. Daubenton was born in Rotterdam in 1888 and studied in Utrecht, Lausanne, London, and Johannesburg. Before joining the World Health Organization he was Director-General of Medical Services for the Royal Netherlands Army. Before the second world war Dr. Daubenton spent over 20 years in Africa, mainly as chief medical officer to a large Witwatersrand gold-mining group. He was later appointed to various public health posts and acquired a wide knowledge of health problems of the African Continent.

Medical Memoranda

Influenzal Meningitis Treated With Chloramphenicol

Haemophilus influenzae is an important cause of meningitis in Malaya, accounting for 16% of the cases (Green and Mankikar, 1949b). Influenzal meningitis occurs mainly among Indian and Chinese children aged from 2 months to 2 years, the majority being under 1 year. These infections have almost invariably proved fatal, and in our experience the strains of *H. influenzae* isolated have been consistently insensitive to penicillin.

Streptomycin treatment of influenzal meningitis has not been entirely encouraging, and it involves the technical difficulties and infective risks of repeated intrathecal injections as well as the evolution of streptomycin-resistant strains of *H. influenzae*.

Woodward *et al.* (1948) have shown that chloramphenicol given orally reaches a concentration of 20 to 80 µg. in the blood, and according to Smadel *et al.* (1949) it attains about half this level in the cerebrospinal fluid. *In vitro* experiments (Green and Mankikar, 1949a) showed that Malayan strains of *H. influenzae* were readily susceptible to chloramphenicol in concentrations theoretically obtainable in the cerebrospinal fluid when this antibiotic is given by mouth.

With the above findings in view, the use of chloramphenicol was considered to be justified in the following case.

CASE REPORT

A Chinese female infant, aged 4 months and weighing 14 lb. (6.4 kg.), was admitted to hospital in October, 1949, having had continuous fever for the past three weeks and cough and convulsion for the past four days. The head was retracted, the limbs were spastic, and the fontanelle was tense. The cerebrospinal fluid contained pus cells and pleomorphic forms of *H. influenzae* which grew in pure culture. This strain was found sensitive to chloramphenicol and "aureomycin." The sugar in the cerebrospinal fluid was below 15 mg. per 100 ml., indicating, according to Alexander *et al.* (1942), a severe infection.

The contents of one chloramphenicol capsule (250 mg.) were given just before each four-hourly feed, small quantities of the powder being put intermittently into a teaspoon, which was then filled with milk and tipped into the mouth. (The solubility of chloramphenicol is relatively slight—about 2 mg. per ml.) No apparent difficulty was encountered in swallowing or retaining these medicated feeds despite the bitterness of the drug. After five days there was occasional vomiting, with some transient diarrhoea on the tenth day. The amount of chloramphenicol given daily over a period of eleven days varied from 1 to 1.5 g.

The temperature (101° F.—38.3° C.) fell within 24 hours, but rose to 99° F. (37.2° C.) subsequently at intervals during treatment. After two days the spasticity of the limbs lessened, but it remained more pronounced on the left side and there were occasional twitchings of the right hand and the right side of the face. The head retraction was not so marked, and the fontanelle was less tense. There was deviation of the eyes to the left. On the third day no pus cells and no bacteria were seen in the cerebrospinal fluid, which was sterile on culture.

By the eighth day the right leg and arm were being moved freely, but spasticity, though lessened, remained in the left leg and arm. Some distension of the abdomen was present, but this disappeared by the tenth day. By the fourteenth day—three days after chloramphenicol treatment had ceased—there was evidence of general improvement, but there were also

indications of what was regarded as residual inflammatory infiltration of the infected meninges* ; that is, the left arm and leg were still somewhat spastic and, when excited, the child's eyes turned strongly to the left. On the sixteenth day the cerebrospinal fluid was found clear and sterile on culture.

After three weeks the left arm and leg were being moved freely, and the deviation of the eyes had ceased. Movements of the left arm and leg became more frequent, and by the twenty-second day movements of the limbs appeared normal with the exception of slight spasticity of the left hand. By the end of the fourth week the spasticity of the left hand had disappeared and recovery was apparently complete.

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Spontaneous Intraperitoneal Haemorrhage due to Haemangioma of Liver

Haemangioma of the liver is common, but few cases give rise to any symptoms. The following case is exceptional in that it caused an acute abdominal emergency.

CASE REPORT

The patient, a man aged 61, was admitted to hospital as an emergency on July 28, 1949. Two and a half days previously he had complained of acute pain in his upper abdomen, which had radiated to his left shoulder. For the past 36 hours he had been vomiting. His bowels had not acted for 24 hours. He gave a long history of "chronic dyspepsia," but investigation elsewhere had on more than one occasion proved negative for peptic ulceration and no definite diagnosis had been made. He had a right inguinal hernia satisfactorily controlled by a truss. There was no history of injury.

On admission his temperature was 101.4° F. (38.55° C.), pulse 124, and respirations 28. His tongue was dry and furred. The heart and lungs showed no appreciable disease. There was acute tenderness with guarding in the epigastrium and right hypochondrium, and this extended into the right flank and down to the right iliac fossa. The left side of the abdomen was relatively free. Bowel sounds were not heard; there was no palpable tumour and no cutaneous angiomas. Examination per rectum revealed some tenderness on the right side only. A provisional diagnosis of perforated duodenal ulcer was made.

Operation.—A right paramedian incision was made, and on opening the peritoneum blood welled out. This was readily seen to be coming from a dark mass at the edge of the left lobe of the liver. The spleen, stomach, duodenum, gall-bladder, and appendix were normal. The sucker was in continuous use withdrawing blood. The diaphragmatic surface of the left lobe of the liver was seen to be covered by a thin-walled angiomatous formation with a clear-cut margin which did not extend to the right lobe. At the anterior edge there was a small perforation through which the blood was escaping. Dr. Stewart Smith, the pathologist, kindly came to the theatre and confirmed the diagnosis of haemangioma of the liver. A wedge biopsy of the growth was taken, including the perforated area, and

*The following morbid processes were envisaged in relation to the symptoms: the original inflammation of the pia-arachnoid had been followed by the development of purulent exudate in the subarachnoid spaces, especially at the base, and also along the posterior surface of the spinal cord and possibly surrounding the nerve roots.

haemostasis was achieved by mattress sutures over "calgitex" gauze. The wound was closed in layers with drainage.

The patient made a good recovery. He received three pints (1.7 litres) of blood, and, except for a slight discharge from the site of the drainage tube, had an easy convalescence. The report on the histopathology, dated August 5, showed "a capillary haemangioma in the liver with a central large organizing thrombus."

In view of the danger of a recurrent haemorrhage from this growth, a further operation was performed on August 31, with the intention of performing a formal resection of the left lobe of the liver. However, on opening the abdomen through a transverse incision, the left lobe was found to be adherent to the diaphragm and it was thought best to leave well alone. The second incision healed with some delay owing to infection. The patient was discharged on September 22.

COMMENT

When a haemangioma of the liver gives rise to symptoms it usually presents in one of three ways: (1) a mass which is otherwise symptomless is found at laparotomy to have this origin (Morris, 1940; Shumacker, 1942); (2) there are signs of obstruction (Wakeley, 1924-5); or (3) vague dyspeptic symptoms are the complaint, and on laparotomy for some other suspected lesion a haemangioma is found, without any other pathological lesion (Shumacker, 1942).

Very rarely does spontaneous rupture occur, though haemorrhage at operations may be fatal (Mantie, 1903) or exceedingly troublesome (d'Errico, 1946). Ewing (1928) states that it may occur as the tumour slowly increases in size, and that it is usually fatal. When spontaneous rupture does occur the diagnosis of acute appendix, ruptured ectopic, or peritonitis has been made (Marckstradt, 1938). When treatment has been undertaken the tumour has been resected, and the danger of incising the tumour itself has been repeatedly stressed (Mantie, 1903; d'Errico, 1946). Most of the tumours resected have, however, been pedunculated, or it has been possible to form a pedicle.

The above case had the indefinite digestive troubles for which no other cause was found at operation, with the superimposition of the acute surgical emergency. At the first operation resection of the growth would have necessitated removal of the whole left lobe of the liver, a procedure which the patient's condition would not at the time warrant. While cutting the wedge biopsy haemorrhage was controlled by compressing the free edge of the lesser omentum and hepatic pedicle, and on tying the mattress sutures over the haemostatic gauze no further leak occurred. This was probably owing to the capillary nature of the growth as compared with the cavernomata, into which category the reported troublesome tumours fell, and to some extent to the haemostatic qualities of the gauze.

However, at the second operation an attempt to separate the adhesions between the diaphragm and the liver would probably have caused severe haemorrhage, while their presence, on the other hand, greatly reduces the risk of any further spontaneous haemorrhage.

I wish to thank Mr. A. C. Gairdner for permission to publish this case, and Dr. Stewart Smith for the pathological investigation.

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