had received a routine injection of antitetanus serum after being wounded, though this was overlooked at the time.

The most striking points about the cases are the rapidity with which the phenomena followed the injection of serum and the occurrence of severe pain in the chest as one of the first symptoms. Overfilling of the right side of the heart, such as might be caused by the too rapid injection of fluid into a vein, will produce precordial discomfort rather than pain. In Cases II and III the injection was not unduly rapid, and in Case I, from a mechanical point of view, the amount of fluid which entered the vein was negligible.

GRAVE DIABETES MELLITUS WITH PULMONARY TUBERCULOSIS FOLLOWING MUMPS.

BY

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As few cases of this sequence of events appear to be on record, the publication of these notes is perhaps justified.

The patient was a boy in the Royal Navy, aged 16½, undergoing training in a harbour ship. In May, 1916, he had an attack of mumps without any testicular or abdominal symptoms. On the third or fourth day of the disease the other boys in the ward started to tease him on account of his thirst (and remonstrated with him for drinking their lemonade). This drew his attention to the quantity of fluid he was drinking, but, independently of this, he noticed that he was passing urine three or four times during the night, which he had never done before. When first seen in Plymouth Hospital he had well marked symptoms of diabetes mellitus, with physical signs pointing to implication of both lungs with tuberculosis. On a dietary consisting of four ounces of bread and including green vegetables, but no other carbohydrate, ninety ounces of urine were being passed daily, with a total glucose output of seven ounces. The ferric chloride test for diacetic acid was markedly positive. On an initial starvation diet, with subsequent addition of carbohydrates to his fare, the patient's diabetic symptoms disappeared, except for the occasional appearance of slight quantities of sugar in the urine; calcium oxalate crystals could always be found. The disappearance of the glycosuria may be correlated with the presence of rapidly advancing tuberculosis of both lungs and with persistent evening rise of temperature to 101.5° to 102° F. The patient died five months after the attack of mumps.

NOTES BY H. S. HOLDEN, M.Sc.

Post-mortem Examination.

The left lung showed old extensive adhesions. The right was similar and, in addition, firmly adherent to the diaphragm. Both were very collapsed and showed massive lobar caseation, with breaking down at the apices. The mesenteric glands exhibited extensive tuberculosis, parts of the mesentery resembling bunches of grapes. There were a few tuberculous ulcers in the stomach, one about the size of a pea on the anterior surface of the pyloric end. The intestines showed a certain amount of tuberculous ulceration in all portions, this being most marked towards the lower end of the ileum. The liver showed slight fatty change.

Heart, kidneys, spleen, and brain were normal.

The pancreas was normal in appearance and weight (80 grams), but slightly soft in consistency. No anatomical peculiarity was found in the relations of its ducts.

Microscopic Examination of the Pancreas.—Sections were prepared from the head, body, and the tail of the gland, but those from the first two of these revealed little abnormality apart from a relatively slight round-celled infiltration in the more superficial portions. The sections from the tail, however, were of considerable interest, as, in addition to the infiltration, some of the islands of Langerhans showed evident hyaline degeneration, first described by Opie.¹ The affected islands were relatively scanty, although some of the remainder appeared to show slight signs of a similar condition.

REMARKS.

Abdominal symptoms have been but rarely described in mumps. In the course of an epidemic of thirty-three cases of mumps described by Edgecombe,² five of the subjects were affected by symptoms pointing very definitely to an implication of the pancreas in the disorder. Other writers have noticed the same train of symptoms occurring in the course of epidemics, and Morley Fletcher,³ summing up their evidence, states that severe abdominal pain starts within a week of the onset of mumps—usually the fourth

or fifth day—and is accompanied by vomiting and diarrhoea. The pain is usually epigastric, and tenderness above the umbilicus, with the presence of swelling or a diffuse resistance, can often be made out. The temperature hardly ever rises above 102° F., and the pulse-rate is not generally increased, and is frequently slowed. The immediate prognosis is good, and the patient is usually free from abdominal symptoms within the week. The same writer goes on to say, "some cases of diabetes may date their origin from inflammatory changes brought about in the pancreas by an attack." In favour of this cautious new opinion he quotes Barbieri's case of transient glycosuria in a boy of 6 years of age, in which the glycosuria followed mumps, but sugar disappeared from the urine in twenty-five days. Harris⁴ reported the onset of diabetes with acetoneuria in a man aged 42 years, the symptoms being noticed one month after mumps.

When it is remembered that the islands of Langerhans are found in relatively small numbers in the head and body of the gland as compared with the tail, it seems probable that the disturbance of the islands in the tail, described above, is enough to prove this to be a case of diabetes of pancreatic origin. In several recorded fatal cases of diabetes in which hyaline degeneration was present the number of islands affected was small and no other lesion which could have accounted for the symptoms was found. Very little evidence of previous inflammatory mischief was found in the gland in this case, which fits in with the clinical history, where no abdominal symptoms were noted. I can find no evidence in the literature of similar coincident changes occurring in the pancreas during an attack of mumps, as the clinical histories and *post-mortem* findings always pointed to an acute or subacute inflammation of the organ having taken place.

Owing to the severe nervous strain imposed by war it might naturally have been expected that diabetes, which has been experimentally shown to be associated with hyperactivity of the chromaffin system, would have become more frequent. From a careful analysis of the numbers of cases of diabetes treated at the Royal Naval Hospital, Plymouth, from 1911 to June, 1916, this expectation is justified. Out of 9,127 cases admitted to this hospital during 1911, 1912, and 1913 there were 5 cases of diabetes, or 0.05 per cent.; whereas out of 7,968 cases admitted during 1914, 1915, and up to June, 1916, there were 22 cases of diabetes, or 0.27 per cent. Assuming that the navy increased from 150,000 men in peace time to 350,000 in June, 1916, and has thus increased slightly more than twofold, the number of cases of diabetes admitted to Plymouth has increased fivefold.

I have to thank Fleet Surgeon R. St. G. Bond, Royal Navy, for his permission to publish this case, which occurred in one of his wards.

REFERENCES.

¹ Opie, *Disease of the Pancreas*, second edition, p. 312. ² Edgecombe, *Practitioner*, 1908, lxxx, p. 194. ³ H. Morley Fletcher, in Garrod, Batten, and Thursfield's *Diseases of Children*, p. 1056. ⁴ H. F. Harris, *Boston Medical and Surgical Journal*, 1899, cxi, pp. 465-469.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

THE TREATMENT OF DYSENTERY, WOUNDS, ETC., BY A COMBINATION OF INTERNAL ANTISEPTICS.

MAY I to bring to notice a mode of treatment the result of twenty-five years' experience in the Persian Gulf and India, where dysentery is endemic during certain seasons of the year? The patient is given a rectal injection of powdered ipecacuanha gr. xxx with m xx to xxx of tincture of opium every morning, and is placed on a mixture of carbolic acid and quinine. The nauseating and depressing effects of ipecacuanha given by the mouth are thus avoided, and the combination of carbolic acid and quinine, with its intensive bactericidal action, circulating through the site of ulceration, soon produces a development of new capillaries (as shown by the appearance of streaks of bright blood in the ejecta), together with the throwing off of the old sloughs. This beginning of improvement appears about the tenth day of treatment, and proceeds to the entire healing of the lesion. It is as