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CLINICAL LECTURE

ON A

CASE OF ACUTE PANCREATITIS.

Delivered at the Middlesex Hospital

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GENTLEMEN,—The case I propose to bring before you to-day is one of acute pancreatitis—a somewhat rare disease, though it probably occurs more frequently than is supposed, as, unless a *post-mortem* examination is made, it is liable to escape recognition and to be mistaken for perforative peritonitis or acute intestinal obstruction. I will first narrate the case, and then discuss some points in its pathology, diagnosis, and treatment:

History.—The patient, a man, aged 30, was admitted into Cambridge Ward at 9 P.M. on May 21st. He was a German Swiss employed as porter to a club, unmarried, and, according to his statements, had always enjoyed good health and was of temperate habits, but, as he was very fat and after death his liver was found to be enlarged and very fatty, it is probable he had been a great beer drinker. His present illness, for which he could assign no cause, began three days before his admission; he became constipated, and suffered from pain in the stomach. He applied at the out-patient department complaining of epigastric pain and constipation, but did not seem very ill. He was given a dose of castor oil and laudanum and returned to his work. The next day he applied again, still suffering from the same symptoms, and was given a dose of calomel and morphine. He was stated to have been in good spirits and there was nothing to indicate any serious affection, and he again resumed his employment; but vomiting now set in and he had to give up. The next day he became alarmingly ill, and in the evening was sent to the hospital.

Condition on Admission.—He was in a condition of profound collapse, his extremities were cold, skin perspiring freely, pulse about 150, but scarcely perceptible; respirations sighing and irregular; countenance pinched and slightly cyanosed; temperature 98.6°; at 10.30 it had fallen to 95.4°. He vomited frequently; the vomited matters consisted chiefly of milk, and presented no characters of intestinal regurgitation. He complained of severe epigastric pain, and there was great tenderness in this region. There was no marked distension of the abdomen, which was everywhere resonant on percussion, and the limits of the liver dullness could readily be ascertained. The pain and tenderness were confined to the epigastrium. He passed no urine; an enema brought away a small fecal mass.

After-history.—He was wrapped in blankets, hot bottles were applied, and he was given small quantities of brandy by the mouth, and an enema containing brandy was administered; subcutaneous injections of ether and strychnine were employed. At midnight Mr. Bland Sutton met me in consultation, but it was felt that whatever was the nature of the case, any exploration in the collapsed condition of the patient could only accelerate the fatal termination. He never rallied, and died at 7.20 the next morning. During the night he passed a liquid motion in the bed. No urine could be obtained.

Post-mortem Examination.—The body was found to be loaded with fat, especially the omentum and retroperitoneal tissues, and the liver presented an advanced degree of fatty infiltration; the heart also was covered with fat. The abdominal cavity contained about 8 fluid ounces of blood-stained serum. The peritoneum covering the pancreas and duodenum had lost its polish and was injected and roughened, but there was no fibrinous exudation or signs of general peritonitis. The tissues behind the peritoneum surrounding the pancreas were infiltrated with bloody serum, and the fat here and also in the adjacent mesentery showed distinct fat necrosis, and after the parts had been for some time lying in water they exuded a milky fluid, which Dr. Voelcker regarded as due to saponification of the fat. The pancreas itself was enlarged, reddened, somewhat friable, the lobes pink and translucent, much resembling the flesh of salmon, no doubt a condition of coagulation necrosis; the organ was oedematous with bloody serum. The pancreatic ducts were not distended and no calculi were present. Though there was general infiltration of blood-stained serum in and around the pancreas, there were no hæmorrhages nor any suppuration. The stomach presented *post-mortem* congestion and softening; the duodenum and the rest of the intestine appeared normal. The kidneys and suprarenal capsules were normal. There were some old encapsuled caseous deposits in the apices of both lungs.

This case presents the typical characters of one form of acute pancreatitis: for a day or two epigastric pain and tenderness with constipation, then vomiting and the rapid super-

vention of fatal collapse, death usually occurring within four or five days from the commencement of the symptoms. In somewhat less acute cases peritonitis may occur, or suppuration in and around the pancreas, and the patient may survive for weeks or months, or even recover with evacuation of the pus. Sometimes the pancreas becomes gangrenous, and may even separate as a sequestrum and be discharged into the bowel.

In the rapidly fatal cases the appearances found on *post-mortem* examination resemble those met with here, except that, in addition to the inflammatory exudation around the pancreas, the fat necrosis, and the coagulation necrosis of the glandular structure, there is extensive hæmorrhage in and around the pancreas. Hence Dr. Fitz, who is the chief authority on this disease, distinguishes this as the hæmorrhagic form from the suppurative and gangrenous forms. Here, however, there was no hæmorrhage, which therefore must not be regarded as an essential element in the disease.

The relation of the hæmorrhage, the fat necrosis, and the inflammation to one another, has been differently interpreted by different observers. Dr. Balser, who first described fat necrosis, regarded this as primary; he considered it was due to a rapid growth of fat which destroyed the tissues it surrounded, and was the cause of the hæmorrhage, the disease being one to which very fat persons were subject. Others have regarded the hæmorrhage as the primary change, and have considered the disease as apoplexy of the pancreas. But in all probability the view of Dr. Fitz is the correct one: that where acute inflammation, hæmorrhage, and fat necrosis occur together, the inflammation is the primary change, though no doubt primary hæmorrhage does occur.

We have next to consider the cause of this fatal collapse. This can hardly be due to any affection of the pancreas itself, and must in all probability be ascribed to the surrounding inflammatory exudation compressing or interfering with the great retroperitoneal ganglia.

In its pathological characters the disease must be regarded as an acute infective inflammation, and it is probable, as Dr. Fitz supposes, that the starting point is some inflammation of the stomach and duodenum, and the infecting agents obtain access to the pancreas through its duct.

With regard to the antecedents of the disease, it occurs most frequently in the male sex, and appears to be an affection of adult life, the ages of the patients varying from 20 to 60, and upwards. A large proportion have been very fat, and many had been previously subject to gastric affections. The majority appear to have been of temperate habits. In some cases the symptoms have followed an indigestible meal. Where the urine has been examined it has not been found to be saccharine, though gangrenous pancreatitis has occurred in diabetes. The so-called hæmorrhagic form is usually fatal within five days; the suppurative and gangrenous forms may run a much more protracted course, but these forms are sometimes due to local causes or to injury.

The next point we have to consider is the diagnosis. This presents great difficulties, and has seldom been made during life, though probably when the disease becomes better known, and physicians are on the look out for such cases, the symptoms will be found to be sufficiently characteristic.

The affections with which it is most likely to be confounded are perforative peritonitis, especially of the stomach and duodenum, and acute obstruction of the bowel; sometimes irritant poisoning or gall stones may be suspected.

In the present case the first two of these possibilities were carefully considered. Against perforation of the stomach or duodenum was the absence of any previous symptoms of gastric or duodenal ulceration. The fact that there was no general distension of the abdomen, and no signs of the pre-

sence of gas in the peritoneal cavity, and against perforation of the stomach, was the persistence of the vomiting. But above all, the characters of the collapse, commonly in perforation the initial collapse is succeeded for a time by a stage of reaction and fever due to the peritonitis which is set up, and the symptoms come on quite suddenly; here the symptoms were of gradual onset, and no signs of reaction appeared.

If there had been perforation, it must have been into the lesser sac of the peritoneum or some other circumscribed space shut off from the general abdominal cavity. This would have been still less consistent with the profound and persistent collapse.

The second supposition was that the case was one of acute intestinal obstruction. Against this was the absence of any swelling of the abdomen and of regurgitant vomiting of intestinal contents; though the patient vomited frequently the vomit was small in quantity, and consisted only of stomach contents, being chiefly milk; not even bile was ejected. This seemed inconsistent with intestinal obstruction, however high up it might be. Moreover, there was no positive evidence of intestinal obstruction. The patient said he had been constipated for three or four days, but the bowels acted with an enema and afterwards spontaneously. Nothing, too, but an acute strangulation could have caused such intense collapse, but the onset, which was somewhat gradual, was quite unlike this.

I think, therefore, in this case a diagnosis was by no means impossible. Fortunately the collapsed condition of the patient saved him from fruitless laparotomy, which has been done in several similar cases.

One sign which is sometimes present could not be detected—namely, fulness or swelling in the epigastric region; but our patient had his abdominal wall and mesentery so loaded with fat that the retroperitoneal bulging could not have been felt.

The characteristic symptoms, then, of the disease are these—epigastric pain and tenderness, which may as in this case be at first only of moderate intensity, and resemble the pain of gastric catarrh, but may be very severe from the outset; then vomiting, but the vomit does not present the characters of the regurgitant vomiting of intestinal obstruction. There is usually constipation, but sometimes diarrhoea; there may be fulness or swelling in the epigastrium, but no general distension or any signs of the presence of gas in the abdominal cavity. The tenderness is mostly limited to the epigastric region. Fever is inconstant, and with the collapse the temperature falls. The fatal collapse may set in as early as the second day, more commonly on the third or fourth.

The last point to be considered is the treatment, about which there is little to be said. We have no means of controlling an acute internal infective inflammation; we can only aim at counteracting the effects and obviating the tendency to death.

The fatal collapse in these cases is probably to be attributed to interference with the functions of the great sympathetic ganglia and consequent vasomotor paralysis of the mesenteric vessels and the draining into them of a large part of the blood, together with cardiac inhibition, and the only chance would be to tide the patient over this dangerous period and give time for the inflammation to subside or become limited; in the suppurative or even the gangrenous form this appears to take place. We must then use those means which are usually employed to combat collapse, alcoholic stimulants administered by the mouth or rectum, hypodermic injections of ether and strychnine, morphine to relieve pain; we might perhaps with advantage have recourse to those other remedies which recent experiments have shown to have the power of controlling the vasomotor paralysis and of stimulating the heart. Of these, according to Dr. George Oliver, suprarenal extract is the most powerful. Pressure on the abdomen is also an effective agent, and perhaps, if applied gently and uniformly by a suitable binder might be borne by the patient. At all events we must endeavour to make an accurate diagnosis, and so avoid the risk of hastening the fatal event by useless laparotomy.

A MONUMENT is about to be erected to the celebrated physiologist, Johannes Müller, in his native city of Coblenz. He was the son of a shoemaker, and was born in 1801.

A CASE OF ACUTE HÆMORRHAGIC SEPTICÆMIA TREATED BY ANTISTREPTOCOCCUS SERUM.

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(With Note on the Mode of Preparing the Serum, by T. J. BOKENHAM, M.R.C.S., L.R.C.P., late Research Scholar, British Medical Association.)

It appears desirable to publish at once the following case in the interest of those who make *post-mortem* examinations or are otherwise exposed to septic infection.

HISTORY OF THE CASE.

Dr. G. M., aged 30, pricked his thumb in making a *post-mortem* examination on a case of suppurative peritonitis at 1.45 P.M. on Monday, June 8th. At 7 P.M. the thumb began to throb, and during the evening this throbbing increased to burning pain, and between 9 and 10 the red lines of lymph duct inflammation had extended as far as the axilla, and the glands in this region were enlarged. At 4 A.M. on June 9th pain and tension of the pad of the thumb were so great that nitrous oxide gas was given and an incision made. Previous to this vomiting had occurred, and there had been several shivering fits. The temperature at 7.30 A.M. was 103° F.

At 9.30 A.M. he was seen by one of us. The whole body was covered with a scarlet septic erythema; the face was puffy and the eyes suffused. The patient complained of severe shooting pains up the arm, and in the intervals of pain was listless and drowsy; the temperature was high and the pulse rapid and soft. It was arranged at once to take him as soon as possible to St. Thomas's Hospital, where he was admitted about 3 P.M.

The condition gradually got worse, and on the evening of the following day (June 10th) the temperature was 104.7°, and the pulse 150, soft, feeble, irregular at times, and running. The rash was very brilliant, and hæmorrhagic in places. All day drowsiness had been a marked feature, and the respiration was more rapid than normal, and occasionally jerky. Nourishment was taken with difficulty. There was soreness of the throat, which was of a brilliant red colour. During the day vomiting occurred several times, and also slight bleeding from the nose. Coughing, too, was troublesome, and he hawked up blood-stained mucus from the pharynx. There was no swelling of the thumb, and no discharge of pus from the incision, but there was great pain and tenderness along the forearm and arm, though without obvious swelling or œdema. The axillary glands were large and tender. The red lines were obscured by the rash, but the hard lymph cords could be felt. There was frontal headache and the mind was clouded. The tongue had gradually become coated and dry, and was passing into a typhoid condition. There was slight albuminuria.

At midnight (June 10-11th) 3.5 c.cm. of antistreptococcus serum (Burroughs and Wellcome) were injected. This was repeated every four hours. Six hours after the first injection (6 A.M., June 11th) certain indications of improvement were manifest:

1. The mind was clear, and the headache had disappeared.
2. The respiration was regular and less rapid.
3. The pulse was slower.
4. The tongue was moist along the edges.

June 11th. All this day the temperature was continuously 104° F. Cold sponging, which was done several times, had no real effect. The tongue continued to clean, but a smart attack of epistaxis occurred. The rash was still as bright, and the blotchy subcutaneous hæmorrhages were more evident. Towards evening, after the epistaxis occurred, the pulse became much more rapid and weak, and gave rise to much anxiety. Strychnine and digitalis were ordered every four hours.

During the night the temperature dropped, but much pain and some swelling were noticed in the ball of the thumb, and there was tenderness above the wrist on the radial side, with