and upon the Continent the government, which supports and controls both, has always regarded the hospital as an essential and integral part of the medical school. Can Harvard afford longer to delay the securing of similar advantages, the means of ranging herself in all respects as a first-class school, of successfully competing with the schools of other American cities for pupils from all parts of the country, of sending her graduates into the world perfectly educated without a subsequent foreign stamp, of drawing to her post-graduate department a creditable share of the vast number of physicians now seeking such advanced instruction? Who can doubt the commanding position of a great university hospital under the absolute control and professional charge of the teachers of the school? To create such should be not only our ambition, but our immediate endeavor.

This exposition of the internal affairs of the school is made in no spirit of hostile criticism, but for the information of the public, to which we must look for means to accomplish the changes I have shown to be essential to its continued advance, for upon outside aid the possibility of such improvements must be based. The income of the school barely suffices at present to pay its running expenses, and no appeal for such large assistance can be successful without the fullest publicity as to its present status, its shortcomings as well as its great accomplishments. We need at least \$500,000 now to place the school on the proper financial basis to enable it to lengthen its curriculum, and to place its clinical departments upon a satisfactory and independent basis.

(To be continued.)

Original Articles.

ACUTE PANCREATITIS.

REPORT OF A CASE, AND REFERENCE TO RECENT CONTRIBUTIONS.¹

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OF the several varieties of acute pancreatitis that which is least easy of diagnosis is the suppurative form. This fact is largely due to the tendency of the latter to become subacute or chronic. Even if the early symptoms are sudden and violent, as may sometimes be the case, a quiescent period not infrequently follows, during which no especially characteristic symptoms are to be noted. Although in the course of time an extension of the inflammation to the peritoneum is likely to ensue, the progress of the peritonitis is slow, and shown rather by disturbances of nutrition than by septic symptoms. Furthermore, at the time when the patient comes under observation it may be impossible to attain an accurate description of the initial symptoms, and an unusually pronounced secondary manifestation may make unduly conspicuous a result and not a cause of the disturbances.

The following case is reported for the purpose of illustrating this difficulty of diagnosis, and, at the same time, of calling attention to the minuter changes which are to be seen. The latter will be found to contrast very definitely with those observed in the

hæmorrhagic and gangrenous varieties of inflammation of the pancreas.

The case occurred at the Massachusetts General Hospital, in the wards of my colleague, Dr. G. G. Tarbell, and I am indebted to him for the opportunity of seeing the patient during life. He has also kindly consented to my use of his notes, from which the following statement of the clinical condition has been compiled.

The patient was a whitewasher, sixty-seven years of age, whose personal and family history threw no light upon the disease for which he was admitted to the hospital, January 2, 1889. His habits were good and there was no history of specific disease.

Five weeks before his entrance he was suddenly seized with a severe pain while at work. He ate a piece of cheese with the hope of relief, but the pain became rather worse than better. He then took two pills, and was eased on the following day. Since then there has been no pain. A week later he ate freely of split peas, and, soon after, the abdomen and legs began to swell, a gradual increase in size taking place. About this time he gave up work on account of weakness. He then became jaundiced. There had been neither nausea nor vomiting. There was a lack of appetite for food, but a strong craving for acid drinks. There was neither headache nor disturbance of vision, neither cough nor dyspnoea. Micturition was frequent at night, and the urine was dark colored. He felt well, but desired treatment on account of the jaundice.

When he came under Dr. Tarbell's care he was fairly well-nourished. There was intense jaundice of the skin and conjunctivæ while the lips were rather pale. The tongue had a moist, thick, white coat. The examination of the heart and lungs was negative. The abdomen was distended and tense, tympanitic in the elevated, flat in the dependent portions. There was no fluctuation. The upper level of the hepatic dulness was at the right nipple, and the lower edge of the liver was to be felt in the epigastrium. A freely movable mass was indistinctly felt below the liver, but no connection between the two could be definitely determined. The mass descended on inspiration, and transmitted a pulsation synchronous with the heart-beat. The pulse was 72, respiration 20, temperature 96.2° F. The urine had a specific gravity of 1.020, was free from albumen and contained much bile pigment.

During the subsequent twenty-nine days of his life the pulse ranged between 60 and 80; the respiration remained in the vicinity of 20; and the temperature, practically normal during the first weeks, became subnormal afterwards. He suffered from itching, fulness, and a constant desire for some other article of diet than that he was receiving. He slept much of the time. His weakness steadily increased; and on the day of his death he complained, in thick speech, of a dryness of the tongue and throat. In the afternoon the tongue became pushed upwards and backwards by a swelling on each side of the floor of the mouth, the breathing became difficult, the pulse feeble, and there was considerable distress. Surgical advice was opposed to any operative measures for relief. The inspiration gradually became more shallow and labored till death took place.

At the post-mortem examination, made twenty-one hours later, the body was rigid, the skin was of a dark greenish-yellow color. The penis, scrotum and lower

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extremities were œdematous. The thoracic organs were relatively free from anatomical changes. The abdomen contained five pints of dark, yellow fluid. The spleen was enlarged, perhaps one-half, firm, dark-red. On section, both pulp and blood were increased; structural regions distinct. The prostate was hypertrophied, the bladder trabeculated, the kidneys free from alterations. The liver was slightly diminished in size, of a dark, reddish-green color, the surface granular. On section, the lobular regions were distinct. The largest bile-ducts were dilated to the volume of the little finger, the smaller tubes correspondingly enlarged, all containing a thin, opaque gray fluid. About an inch and a half from the duodenal papilla there was a flattened elevation of the wall of the common duct, of about a line, over a space a half-inch long. The dilatation of the bile-duct extended from this point inwards, towards the liver. The common and cystic ducts and the gall-bladder were considerably dilated. The latter held some three ounces of thin, gray fluid. The mucous membrane of the stomach, somewhat thinned, was of a greenish, slate color. There was a diverticulum of the duodenum. The intestine contained mortar-like contents. The pancreas, at first sight, presented no abnormal appearances, and the duct was patent. The obstruction of the common bile-duct was found to be caused by the pressure of a diffused, purulent infiltration of the pancreas at the junction of the head and tail, involving an area as large as a grape. The diseased portion was hardened in Müller's fluid and I am indebted to Mr. F. B. Mallory of the Harvard Medical School for the series of sections in which the microscopical changes have been studied.

The alterations found in the pancreas were circumscribed and of a two-fold nature. On the one hand, there was a considerable, localized increase and thickening of the interstitial tissue with extension into the pancreatic lobules, only traces of which were, at times, to be found. The ducts within this new-formed tissue were dilated. These changes were regarded as having no immediate relation to the fatal illness. On the other hand, there was an extensive, round-celled infiltration, both in the vicinity of the above-mentioned alterations and extending for some distance from them. Within this area were large and small abscesses, frequently so situated with reference to the ducts as to suggest their origin from the latter. Ducts were found containing detached epithelium and bacterial colonies. Others were filled with leucocytes, the epithelium being still adherent to the wall. Again clumps of epithelium were seen in the midst of masses of leucocytes. Ducts were also found filled with pus, while the epithelial lining of the tube was absent, there being no cellular infiltration around the duct, while elsewhere the wall of the duct was formed by a margin of granulation-tissue. At times the abscesses would be found to enter the lobules, although, in general the destruction of the latter seemed to be accomplished by the extension into them of the surrounding fibrous tissue. Bacterial clumps were found within and near the abscesses, within a neighboring hyperplastic lymph-gland, also within narrow, thinned-walled vessels, presumably lymphatics.

In the peripancreatic fat-tissue an abundant, round-celled infiltration was occasionally to be seen, an adjoining lymph-gland contained, especially within the follicles, a reddish-yellow granular pigment.

The pancreatic lobules frequently presented a peculiar appearance which is worthy of note. It consisted in an apparent replacement of the parenchymatous cells by others which contained less protoplasm and a nucleus stained throughout instead of assuming a ring-like aspect. These clusters of apparently free nuclei were separated by a transparent space from the intervening capillary regions and lay, as a rule, towards the centre of the lobule, and, at times, occupied the greater portion of its surface.

In contrasting the changes found in this case of suppurative pancreatitis with those seen in the hæmorrhagic and gangrenous varieties, the following characteristics may be noted: in suppurative pancreatitis limitation of the lesions; conspicuous affection of the ducts; destruction of the lobules by suppurative and fibrous changes. In hæmorrhagic and gangrenous pancreatitis the lesions are diffused; the exudation is hæmorrhagic, cellular and fibrino-cellular; the lobules are destroyed by a coagulation-necrosis.

It will be observed that this case was free from the symptoms which are connected with the severer forms of acute pancreatitis. In the lack of evidence of an epigastric peritonitis of sudden onset, it may be questioned whether the diagnosis of inflammation of the pancreas can be made. The clinical picture here presented is essentially that of an obstructive jaundice and the death was, presumably, cholæmic. The jaundice was more intense than is usually found in connection with inflammation of the pancreas. The rapidly progressing loss of the patient's strength opposed the theory of a catarrhal jaundice and the view which seemed best supported during life was that of a tumor obstructing the common duct. The autopsy first revealed that this tumor was an abscess of the pancreas, a cause of jaundice not often kept in mind.

I take this opportunity of calling attention to the contributions to the subject of acute pancreatitis which have been made during the past year, since the delivery of the Middleton Goldsmith lecture on this subject before the New York Pathological Society. At the same time I am desirous of acknowledging my indebtedness to Dr. E. T. Williams, of Boston, for calling my attention to two cases of earlier date which escaped my research at that time.

The first is reported by Frerichs (*Klinik der Leberkrankh.*, 1861, II, 382) as one of fatal hæmorrhage from rupture of the portal vein. A man, forty-one years old, given to brandy-drinking, suffered for a long time from disturbed digestion, frequent gastric cramps, persistent diarrhœa and repeated jaundice. During an attack of cramp of the stomach there was the sensation of tearing in the upper abdomen and the outpouring of a fluid. He soon became very feeble, and fainted. The next day there was complaint of pain in the pyloric and ileo-cæcal regions. The intelligence was clear, the face cyanotic, the extremities cool and pulseless. The abdomen was swollen and tense. Death occurred within sixty hours.

The pancreas was found to be large and flabby. On section, a network of broad and narrow whitish-yellow streaks was seen, which were chiefly composed of fat-drops and granules. In the head of the pancreas was a puriform focus of the same nature, near which was a small vein opening into the vena portæ, closed by a red clot. Large masses of clotted blood were in the vicinity. The duct of Wirsung was covered with a soft, fatty layer. There was an extensive

hæmorrhage, the source of which could not be found, of partly clotted, partly fluid blood, forming a reddish-brown tumor below the liver and reaching from the gall-bladder to the spleen. The blood was extravasated between the layers of the small omentum, the hepato-duodenal, the gastro-splenic ligaments and the transverse mesocolon. It extended downwards to the kidneys and along the pancreas from the portal vein to the spleen.

Although there must be doubt as to the source of this hæmorrhage it is evident that there was no lesion of any large vessel. So extensive a hæmorrhage in this region, in the absence of such lesion, makes it suggestive that the case should be classified among the pancreatic hæmorrhages. So long a duration of life as sixty hours after the incipient symptoms is indicative rather of the existence of a hæmorrhagic pancreatitis than of a pancreatic hæmorrhage. A view which is favored by the symptoms and the suggestion of a fat-necrosis.

A thoroughly typical case is that reported by Habershon ("Pathological and Practical Observations on Diseases of the Abdomen," third edition, 1878, 338). During life it was regarded as one of cancer of the glands near the pancreas with secondary implication of the stomach.

The patient, was a publican, sixty-four years of age, who, for four years had suffered from acute attacks of slight pain occurring every three or four months. The pain was in the epigastric and umbilical regions and extended to the spine. Some four months before his death he was suddenly seized with severe pain in the region of the stomach and with vomiting. The latter symptom returned at intervals of three or four days and came on several hours after eating.

Five days before his death he was much emaciated, the skin hot and dry, the pulse frequent and sharp. The abdomen was moderately contracted except at the lower part of the epigastric and umbilical regions where was a rounded tumor, dull and tender. It was separated by a resonant area from the liver and spleen. This tumor proved to be the sac of the lesser omentum filled with pus. The pancreas for two or three inches towards the splenic end was healthy, but the rest of the gland formed a black slough about two and a half inches long, detached from the duodenum and lying in a cavity filled with dirty, offensive pus. The gall-bladder contained numerous gall-stones. The immediate cause of death was the result of "the transudation of offensive, purulent serum into the general cavity of the peritoneum."

It is interesting to know that Dr. Habershon regarded this case as one of "disease of the pancreas, suppuration and gangrene." It presents so many points in common with the fifteen cases of gangrenous pancreatitis previously collected as to leave no doubt of its place in nosology.

Of the contributions to the literature of this subject during the past year the first is that by König ("Ein Fall von Pankreasnekrose nach Blutung und Fettnekrose." Inaug.-Dissert., Kiel, 1889). A woman, fifty-two years old, eighteen days before her death sought gynecological treatment for a prolapsed uterus. She had suffered for twenty-five years from severe gastric and abdominal pains, at first only in the right, but later extended to the left side. Finally, she also suffered from back-ache. During the last month of her life these pains became very severe, though at times relieved by treatment. The epigastrium was very

sensitive to pressure and the pain did not depend upon the presence of food. It occupied a dull space as large as the palm of the hand beneath the lower left ribs. There was vomiting and diarrhoea and the temperature was elevated from one to two degrees. Death took place from progressive loss of strength.

The post-mortem examination was made by Professor Heller of Kiel. About an inch from the duodenum the pancreatic duct opened, sieve-like, into an irregular, sinuous cavity between the stomach, transverse colon, pancreas and spleen. From its walls near the perforated duct, hung necrotic shreds of fibrous tissue containing large quantities of yellow drops, black granules and flakes, reddish-yellow granules and needles, the latter in clusters. Similar dirty brown, necrotic shreds were attached to the pancreas. The fat tissue near the stomach, spleen, and kidneys formed a dense, fibrous mass in which were numerous, large and small, rough, white nodules. In the fat-tissue at the lower end of the right kidney these nodules were also of a brown color. The gall-bladder contained numerous calculi. The upper part of the abdominal cavity was walled off by dense adhesions and contained a clear, brown fluid of the color of port-wine. In the lower half was an opaque, yellow fluid in which were fibrinous and fibrino-purulent flakes. This acute peritonitis was attributed to ulcers of the vagina, and was regarded as the immediate cause of death.

This case presents an important exception to those previously recorded since, despite the evidence of a communication between the interior of the pancreas and the surrounding tissues, the characteristic appearances of gangrene are not mentioned. It is also exceptional with regard to the chronic, fibrous thickening of the fat-tissue in which the nodules of necrosis were found.

A case of hæmorrhagic pancreatitis was reported in detail by Dr. W. S. Thayer (*Boston Medical and Surgical Journal*, 1889, CXXXI, 506). Especial interest is to be attached to this communication, since the writer's familiarity with the subject led him to consider throughout that the probable condition was an acute pancreatitis. The urine was tested for sugar, with a negative result.

Langerhaus (*Berliner Klin. Woch.*, 1889, XXVI, 1114), at a meeting of the Berlin Medical Society, reported a case of pancreatic necrosis which he regarded as due to an acute pancreatitis. The patient was forty-nine years old, corpulent, not addicted to liquor. He awoke in the morning with headache and dizziness, followed by the vomiting of bile and mucus. The abdomen became markedly distended in the night and anxiety, dyspnoea and palpitation followed. On the second day the abdominal swelling diminished somewhat. Constipation, loss of appetite and severe thirst became apparent. These were very soon accompanied by violent, burning pain in the left hypochondrium and by collapse. On the sixth day he entered Professor Gerhardt's ward in the Charité Hospital with slight fever, swollen, tympanitic abdomen traversed by a faintly depressed, transverse furrow just over the navel. There were small, red, elevated points in the skin of the abdomen, fading on pressure. A diagnosis of typhoid fever was made.

For the next six weeks there was but little change. There was frequent vomiting but with longer intervals. The vomit had a putrefactive odor in the beginning of the fourth week.

At the end of the seventh week the condition became worse. There was mental obtuseness and a feeble memory suggesting the possibility of a cerebral tumor. A rapid loss of strength then took place, the urine and feces were passed involuntarily and death occurred sixty-one days after the beginning of the attack, during which there was a loss in weight of forty-two pounds. There was no sugar found in the urine.

Behind and below the stomach lay a cavity in which was the necrotic pancreas, completely detached from its surroundings. There were numerous communications between this cavity and the stomach and intestines. The walls of the cavity were trabeculated, the recesses containing a dirty-brown, thick, fluid mass, containing many grayish-white and yellow fragments. The necrotic pancreas was flabby, soft, easily crushed between the fingers. The head was golden-yellow, infiltrated with biliary coloring-matter. Multiple, disseminated, fat-necroses were present in the subperitoneal fat. The intestinal coils were united by fibrinous layers and by older, very vascular bands which contained patches like those in the fat-tissue.

Langerhans stated that, three years before, he had examined another case. It was that of a very strong and fat waitress, addicted to alcohol. She died in convulsions after a short illness. The appearances were similar to those reported above but there was no communications between the cavity containing the pancreas and the gastro-enteric canal.

In the remarks which followed Langerhans's communication Renvers stated that he had observed two cases in one week, and had made a correct diagnosis in the second case in consequence of the autopsy of the first patient.

Hausemann added that two years ago he had examined after death three cases, one was like that reported by Langerhans. In the second the necrosis of the pancreas was less extreme than that of the abdominal fat. In two of the cases a roseola was present, and in one of these the spots persisted after death and overlay necroses in the subcutaneous fat. In a third case the cause was traumatic, the patient being run over by a wagon. Across the upper abdomen the pancreas was sequestered and lay in a hole full of pus. Numerous necroses of the abdominal fat were present. The patients were all males and there was no sugar in the urine of any.

Under the title, "A Case of Genuine Acute Inflammation of Pancreas," etc., Dittrich (*Vrtiljschr. f. Gerichtl. Med.*, 1890, n. F. VII, 48), reports one of hæmorrhagic pancreatitis. The patient, a convict, twenty-one years of age, four weeks before his death suffered from an attack of colic lasting eight hours. He was then apparently well until within two days of his death when he was again seized with very violent, abdominal pain near the transverse colon. During the night he attempted suicide by hanging (possibly on account of the severity of the pain). He was cut down, and, on recovery of his consciousness, suffered from persistent, extremely violent colic until his death in collapse forty-one hours afterwards.

The pancreas was friable and extensively infiltrated with blood. The outer two-thirds were transformed into a brownish-black, almost confluent mass. The peripancreatic tissue and that forming the walls of the omental bursa were suffused with blood. The microscopical examination of the pancreas showed a dense,

small-celled infiltration of the interstitial tissue, and the parenchymatous cells were granular with frequent indications of becoming transformed into a granular detritus.

The case of necrosis of the pancreas, reported by Dr. H. P. Loomis (*New York Medical Record*, 1890, XXXVII, 105), presumably belongs in this series. The patient was a man of forty years, weighing two hundred and ten pounds. He had been drinking hard for three months. For two weeks before death, he had suffered from diarrhœa, and the stools were, at times, streaked with blood. A few hours before he died, he was mildly delirious, his temperature normal, and the pulse rapid. He then became suddenly and unexpectedly collapsed.

The pancreas contained necrotic areas presenting a gangrenous appearance, which showed, under the microscope, the characteristics of a coagulation necrosis. They were considered as, most probably, resulting from previous hæmorrhages into the substance of the organ.

Attention should be called to the report (*Deutsche Med. Woch.*, 1890, X, 201) of the meeting of the Hamburg Medical Society, at which specimens of fat-necrosis were shown by Fraenkel. They were presented as illustrative of the so-called disease, fat-necrosis, as described by Balser (*Virchow's Arch.*, 1882, XC, 520). The report referred to contains so little of an objective statement of the case under consideration, that it can merely be surmised that the disease was an acute pancreatitis. Since there is but little doubt that Balser's cases were of this disease, it is likely that Fraenkel's will be found to belong to the same category.

Owing to the intimate relation which pancreatic hæmorrhage seems to hold to acute pancreatitis, it is desirable to refer to two cases of the former affection which have been reported during the past year.

The first is by Dr. Harris, one of the medical examiners of Suffolk County (*Boston Medical and Surgical Journal*, 1889, CXXI, 606). There was superabundant fat tissue, an alcoholic odor to the breath; death was sudden and unexpected. There was hæmorrhage into the pancreas and into the adjoining subperitoneal tissue.

Dr. Biggs (*New York Medical Record*, 1890, XXXVII, 362), also reports a case of sudden death from pancreatic hæmorrhage. The man fell dead on coming out of a saloon in which he had taken a few glasses of beer. There was a hæmorrhage around the pancreas, and a number of minute hæmorrhages within the organ.

The literature of the past year thus contains reports, more or less complete, of two cases of pancreatic hæmorrhage, two of hæmorrhagic pancreatitis, three, probably four, of gangrenous pancreatitis, in addition to the five cases of acute pancreatitis of earlier occurrence and publicly alluded to for the first time by Renvers and Hausemann, a total of ten or eleven cases of acute pancreatitis, in two of which a correct ante-mortem diagnosis was more or less definitely made.

It is evident that this statement is confirmatory of the conclusion previously reached, that acute inflammation of the pancreas "is much more frequent than is generally thought." It is to be hoped that the existence of this disease, which seems securely based upon abundant anatomical and clinical evidence, may soon be strengthened and supported by experimental investigations.