

Lecture.

ACUTE PANCREATITIS.

A CONSIDERATION OF PANCREATIC HEMORRHAGE, HEMORRHAGIC, SUPPURATIVE, AND GANGRENOUS PANCREATITIS, AND OF DISSEMINATED FAT-NECROSIS.<sup>1</sup>

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SUPPURATIVE PANCREATITIS.

IN order to more fully appreciate the relation which hemorrhagic pancreatitis may bear to pancreatic inflammation and hemorrhage, it becomes necessary to consider the evidence in favor of other varieties of acute pancreatitis. Although the authorities of the present day make but little mention of a suppurative inflammation, Lieutaud<sup>39</sup> in the last century alludes to cases of pancreatic abscess reported by Bartholinus, Tulpius, Aubert, and Patin.

Of twenty-one patients, seventeen were males and four were females; all were adults, whenever ages were mentioned, and in eighteen cases the age was given as follows:—

Years of age.	Number of cases.
From 20-25.....	3
" 25-30.....	4
" 30-35.....	2
" 35-40.....	2
" 40-45.....	3
" 45-50.....	0
" 50-55.....	1
" 55-60.....	1
" 60-65.....	1
" 65-74.....	1

Previous attacks of indigestion of greater or less frequency and severity were present in about one-fourth of the cases. These attacks were usually regarded as gastric or bilious. One patient suffered from sick-headache while another was subject to diarrhoea during his drinking-bouts. Three were distinctly intemperate, two might be regarded as gluttonous, and one was exposed to hard work and extra hours.

The immediate attack was precipitated in two instances by errors in diet, in the one case a probably putrid sausage having been eaten. The attack was greatly aggravated in a third case by a dinner of roast goose and cabbage. Two weeks of catarrhal symptoms with great debility were the antecedents of another case.

A striking feature in the history of these cases of suppurative pancreatitis is the tendency of this affection to become chronic. Of fourteen cases six were fatal in the first month, three during the second month, and five at various periods between four and eleven months. Death might take place at the end of the first week and even the more chronic cases often began with distinctly acute symptoms.

It is therefore desirable in the consideration of this series of cases to group them with particular reference to the rapidity of their course.

The cases of acute, suppurative pancreatitis usually began suddenly, with severe, generally intense, gastric, epigastric or abdominal pain, vomiting, and sometimes great prostration. The vomiting might be incessant and distressing, or it might give tem-

porary relief to the pain. The ejected fluid was sometimes stringy and brown. The bowels were usually constipated, although diarrhoea might occur within the first twenty-four hours. This latter symptom was not infrequent at a later date of the disease.

Fever, usually slight, was the next conspicuous symptom, being manifested about the third day. At the same time the upper abdomen, especially the epigastrium, was likely to become distended, tympanitic, and sensitive. Hiccough, sometimes quite obstinate, was not infrequent at this stage, and occasional chills were to be met with. The abdomen, in general, then became moderately swollen, tense, and tympanitic.

With the violent onset and persistence of these symptoms death might occur, perhaps in the course of a week or more.<sup>40</sup> The pancreas then was markedly enlarged, reddened, and studded with hundreds of small abscesses, many of which had burst into the peritoneum. The associated fibrino-purulent peritonitis was most marked in the upper abdomen. In the second case,<sup>41</sup> where death resulted in eleven days, the attack was apparently recurrent in a corpulent person who had suffered for a year from symptoms which might be attributed to pancreatic disease. There were found in the pancreas numerous small, yellowish-white prominences, alone and in groups, with soft, pap-like contents. They were present on section as well as superficially. The contents were fatty-degenerated cells and detritus. The wall of the smallest cavities was infiltrated with round cells while that of the others was smooth. A group of these prominences were grayish discolored, gangrenous, the superficial peritoneum being perforated and shreddy. Similar nodules were found in the mesentery and in the transverse meso-colon. In the latter was a circumscribed necrosis with floating shreds and fresh, peritonitic adhesions. The pancreas was irregularly traversed by narrow and broad bands and by a diffused development of fat-tissue. Not only does the clinical history of this case suggest a recurrent and finally fatal attack, but the pancreatic lesions also point to a long-standing process. Fibrous bands, fatty-degenerated cells and smooth-walled cavities filled with detritus favor this view. The description of these nodules suggests that many of them were probably foci of fat-necrosis, with gangrenous sloughing of the superjacent peritoneum.

An acute, suppurative pancreatitis, however, very rarely terminates at this early date. The symptoms already described may persist for three or four weeks, with progressive emaciation and debility, and death occur from exhaustion. Under such circumstances the single abscess has been found surrounded with adhesions.

In another series of cases, beginning equally violently, there may be frequent chills and irregular, atypical, often high, fever, the maximum temperature being 105.8°. Slight jaundice may be associated. The pains extend into the hypochondria and may spread from this point downwards.

The liver, perhaps the spleen, may be palpably enlarged—the symptoms are conspicuously those of blood-poisoning, and the patient dies collapsed in the sixth or seventh week. An abscess as large as

<sup>1</sup> Continued from page 187.  
<sup>39</sup> *Op. cit.*, i. 244.

<sup>40</sup> Case XLVI.  
<sup>41</sup> Case XLIX.

a hen's egg, filled with greenish-yellow pus, may then be found in the pancreas. Death at the end of seven weeks may result from the extension of the pancreatic abscess to the peripancreatic fat-tissue, with the production of multiple nodules of fat-necrosis.<sup>42</sup> In this case the symptoms of epigastric pain, vomiting, constipation, and swelling were interrupted by a period of several weeks of comparative comfort, to be followed by marked prostration, incessant vomiting, severe epigastric pain, and fever.

Another event in the history of acute, suppurative pancreatitis is to be found in the course of the third or fourth week of the tense and swollen, painful and sensitive, upper abdomen which follows the pain, vomiting, constipation, and fever. A diarrhœa then becomes conspicuous, perhaps preceded by violent paroxysms of lancinating pain shooting laterally in the epigastrium, producing temporary collapse.

The loose stools may be thin, yellow, and feculent at the outset and then become profuse and watery. This symptom may then subside, with a lowering of the fever and a general improvement, to recur after a few weeks with fever and abdominal distention, progressive emaciation and increasing weakness, ending in death in the tenth week.

Several small abscesses have then been found in the enlarged and firm pancreas, with sclerosed peripancreatic tissue. Communicating sinuses unite these abscesses and open into the adherent stomach and duodenum. A splenic thrombo-phlebitis and a hepatic abscess may be associated, also a fibrinous peritonitis especially marked in the upper abdomen.<sup>48</sup>

The early symptoms may be less severe and the disease be announced by progressing weakness and emaciation. Loss of appetite, slight jaundice, perhaps diarrhœa, may occur. There may be neither fever nor pain, or there may be obscure symptoms of peritonitis. Finally, anasarca or ascites becomes apparent, and death occurs from exhaustion, perhaps at the end of five months. The pancreas may then contain a diffused abscess, following the course of the ducts and opening into the cavity of the lesser omentum, which was filled with pus, and in its turn emptying into the duodenum through a sinus in the mesentery, these conditions being associated with a fibrino-serous peritonitis. The pancreatic abscess may extend, at an earlier date even, to the omental cavity, thus forming a great pus-cavity extending as low as the lowermost coils of the ileum, and walled in by adherent intestines and stomach. The greater part of the pancreas may be destroyed. The common duct may open abruptly into the abscess of the pancreas, and leave it at the hepatic end. There may be an associated thrombosis of the portal vein continued into its primary sources, and the pancrea-tico-duodenal artery may be eroded, with hemorrhage into the cavity of the abscess. A recent peritonitis may be associated, and in one of these, somewhat protracted, cases with extension to the omental cavity, a bronzed skin was present.

Finally, there are the most chronic cases, which extended over a period of nearly a year. As a rule no severe pain occurs at the outset, but the patient

gradually becomes weak and thin, vomiting may be frequent, and a sense of distention of the stomach after meals or of epigastric pain be complained of. There may be little or no fever, or periods when chills and fever occur. The stools may be consistent, not colored with bile, and very fetid, or later they may be very offensive and mixed with blood. There may be a free communication between the pancreatic abscess and the duodenum, or the latter may break into pultaceous shreds when handled. The entire pancreas may be converted into a trabeculated cavity filled with creamy pus and cheesy masses, or it may be indurated and infiltrated with pus. In one of these protracted cases<sup>44</sup> diabetes appeared after the third month.

Noteworthy in these cases of suppurative pancreatitis is the rarity with which a circumscribed tumor is to be found. A swollen, tympanitic epigastrium is the rule, and very rarely a circumscribed resistant spot was to be felt above the navel, to the left of the median line.

Jaundice occurred in less than one-fourth of the cases. It was then usually slight. Its intensity in one case was connected with abscesses in the liver and dilated bile-ducts.

Another fact of considerable importance is the, usually, small size of the spleen. The rule was that no enlargement was noticeable even in those cases in which the thrombotic obstruction of the splenic or portal vein was recorded. The small spleen was usually of normal density.

From the above consideration it is evident that there are cases, few in number, of acute, suppurative pancreatitis, which run a course similar to that described in connection with hemorrhagic inflammation. They may begin with equal suddenness, present the same grouping of symptoms, but are not so early fatal. They are more rarely associated with evidences of fat-necrosis, which were present in but two instances.

Although Klebs<sup>46</sup> regarded pancreatic abscesses, not arising from a peripancreatitis or from suppurating cysts, as of doubtful existence, it is apparent that this view is opposed by the evidence here recorded. It is also evident that the extension of an abscess from the neighboring lymph-glands to the pancreas is of extreme rarity. The only evidence in favor of this view is that offered by Portal<sup>45</sup> and in the case<sup>47</sup> reported by Smith. The possibility that a pancreatic abscess may be due to inflammation of the appendix is evident from Moore's case, although the connection between the two may have been through a mesenteric thrombo-phlebitis, arterial embolism, or through the coexistence of acute pancreatitis and appendicular inflammation.

The possibility that a pancreatic inflammation may be excited by the passage of a lumbricus into the pancreatic duct is admitted in connection with the appearances in Case XLVIII. It is still more probable, however, that the worm entered the pancreas after the establishment of the inflammation. Its presence there might be merely accidental, even taking place after death, as is likely to have been the fact in Case XI.

<sup>42</sup> Case I.V.

<sup>43</sup> Case XL.

<sup>44</sup> Case XLV.

<sup>45</sup> P. 21.

<sup>46</sup> P. 207.

<sup>47</sup> Case XLIII.

## GANGRENOUS PANCREATITIS.

But the subject of acute pancreatitis deserves attention from another event, viz., its possible termination in gangrene.

The earlier medical writings contain occasional references to gangrene of the pancreas, but the evidence presented is so slightly objective as to make them of but little value for present needs.

Grisellius,<sup>46</sup> for instance, has been generally considered to have first called attention to this matter.

His patient, a man forty-two years of age, suffered from frequent colic, which was easily relieved. He was suddenly, without cause, seized with a chill and severe colic and died quietly in the course of eighteen or nineteen hours. The post-mortem examination showed an extreme quantity of abdominal fat. The pancreas was found sphacelated, in a large mass of fat. "In whose absence nature had supplied another like round mass, on the right towards the liver and attached to the sphacelated part. Veins ran through the middle, like Wirsungian ducts, but without order. This sphacelated pancreas distributed a like contagion, penetrating not only adjacent parts, but even the diaphragm, consuming the left lobe of the lung as in phthisis."

The liver is said to have resembled grumous blood, in color and in substance. There were several calculi in the gall-bladder.

"Other membranes were adherent at the bottom of the gall-bladder and held another stone larger than all."

Although the evidence does not permit an exact diagnosis to be made, it would seem as if the sufferings and death of this individual were rather attributable to biliary calculi than to pancreatic disease. The penetration of the diaphragm and the consumption of the left lung suggest that post-mortem softening of the stomach may have aided in producing the described appearances. The clinical history, brief as it is, affords quite a different picture from that to be presented as connected with pancreatic gangrene.

Bonetus<sup>40</sup> credits Barbette with stating that in a case of obstinate vomiting the pancreas was found wholly putrid, rather sphacelated. Again<sup>60</sup> he refers to the statement of Verzaschka that Glaserus found a semi-putrid pancreas in a case of dropsy.

Bonetus himself<sup>61</sup> records a case of dropsy in a boy in whom the pancreas is stated to have been semi-putrid.

In Lieutaud<sup>62</sup> there is extracted the case of a woman with obstinate vomiting, severe renal symptoms and pubic pain, in which the pancreas was semi-putrid, almost destroyed.

Also<sup>63</sup> that of a girl with swollen abdomen, hypogastric pain, purulent urine, and diarrhoea. The omentum and a large part of the mesentery were rotten. The liver filled almost the entire abdominal cavity. The pancreas was putrid and the whole left kidney purulent.

Again,<sup>64</sup> in an infant with dropsy, there was found a putrid omentum and pancreas. He reports<sup>65</sup>

that Helvigius found a sphacelated pancreas, omentum and mesentery, also a shrivelled and putrescent liver, with a gall-bladder containing more than a hundred calculi, in a man sixty years of age, who was seized with gastric pain, obstruction of the liver, and dyspnoea; there was black jaundice and oedema of the legs.

He also<sup>66</sup> refers to a case of extreme dilatation of the bile-duct, where the head of the pancreas was swollen, dense, scirrhus, and pressed upon the opening of the cystic duct. The left portion of the pancreas was putrid. Finally, he credits<sup>67</sup> Bonetus with reporting a case of oft-recurring, obstinate, tertian fever, in which the pancreas and mesentery were found somewhat corrupted and sanious.

Schmidtman<sup>68</sup> speaks of finding induration of the pancreas with appearances of inflammation and beginning gangrene in a case of chronic, suppurative nephritis with destruction of the bladder.

The case reported by Portal<sup>69</sup> is perhaps the first which demands recognition as illustrating the relation of pancreatic gangrene to hemorrhagic pancreatitis. He writes as follows:—

"Gangrene of the pancreas is the frequent result of inflammation. I have found it in several corpses, and especially in that of a merchant of St. Denis street, who during a period of more than two years suffered from severe attacks of colic. They were deep-seated, below the navel, and were often preceded or followed by nausea or vomiting. There was neither swelling nor induration of the lower abdomen; no dryness of the tongue nor thirst. He became much emaciated, the pains increased, the pulse quickened, the heat of the skin became acrid and very strong. The slightest touch of the lower abdomen became very painful. The urine was scanty and red. This state lasted some twenty days, when the patient died unexpectedly. I was present at the autopsy.

"The pancreas was violet-red and soft, a black moisture escaped from its surface, it was almost wholly gangrenous. The stomach and the duodenum appeared inflamed in places."

Although the above case is probably one of the disease now under consideration, the lack of detail in the clinical statement and account of the anatomical appearances makes its value rather historical than useful in determining the relations of the hemorrhage to the gangrenous affections of the pancreas.

Gendrin<sup>60</sup> reports a case which is likely to belong to the series, but which is deprived of a considerable part of its possible value by the lack of sufficient details, clinical as well as anatomical. He states: "We have seen a vast cavity in the region of the pancreas communicating with the jejunum, which was perforated an inch from its origin. The pancreatic tissue was lost in a dense, friable, reddish mass which formed the wall of the cavity, which was filled with a grayish, very fetid pus. The surrounding cellular tissue and the intestinal walls united in forming this suppurating tumor.

(To be concluded.)

<sup>46</sup> Misc. cur. Med. phys. Acad., etc., 1681, Ann. iii. 65.

<sup>49</sup> Sepulchretum, 1700, lib. iii. sect. viii. obs. 54, vol. ii. 113.

<sup>50</sup> Op. cit., ii. lib. iii. 478.

<sup>51</sup> Op. cit., ii. lib. iii. 415.

<sup>52</sup> Op. cit., i. 34.

<sup>53</sup> Op. cit., i. 62.

<sup>54</sup> Op. cit., i. 64.

<sup>55</sup> Op. cit., i. 183.

<sup>56</sup> Op. cit., i. 236.

<sup>57</sup> Op. cit., i. 246.

<sup>58</sup> Hutelaud's Journ. d. pr. Arzneykde, 1799, vii. 4to St. 16.

<sup>59</sup> Anat. Med., 1803, v. 353.

<sup>60</sup> Hist. Anat. des Inflamm., 1826, ii. 239.