TRANSACTIONS

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JOINT MEETING WITH

PHILADELPHIA ACADEMY OF SURGERY

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DR. WILLIAM A. DOWNES in the Chair

PERICARDIOTOMY FOR SUPPURATIVE PERICARDITIS

DR. EUGENE H. POOL presented a man whose history is related in a paper read by him, entitled "Pericardiotomy for Suppurative Pericarditis," for which see page 393.

DR. HOWARD LILIENTHAL presented a man upon whom he had operated twenty-one years ago for suppurative pericarditis following pneumonia. At operation the pericardium was found very much thickened. The operation was performed in very much the same way as described by Doctor Pool, with the exception that a tube was not used except to wash out the pericardium. The details of the case were published in the *Medical and Surgical Reports of Mount Sinai Hospital,* 1899. According to the man's statements, he is now perfectly well, and Doctor Lilienthal said that though he had not had the opportunity of making an examination recently the man was apparently in perfect health.

DR. ROBERT GRIER LECONTE, of Philadelphia, said the points which Doctor Pool had emphasized seemed to be the correct surgical ones to bring out. But it must not be forgotten that in post-mortem statistics of pneumonia and other grave diseases, suppurative pericarditis might be present when the symptoms in life were masked or not sufficiently prominent to permit of diagnosis. In the second place, it might not have been the cause of death, but only a participant in final dissolution, so practitioners should not be blamed for bringing few patients with pericarditis to the surgeon. Some years ago, Doctor LeConte said, he had been interested in studying the relation of the pleuræ and the pericardium on the right and left sides, and the studies he had then made were illustrated in the pictures which Doctor Pool had shown. The only way of attacking a suppurative pericarditis was to always drain the dependent portion of the sac. Doctor LeConte stated that the first case in which he performed pericardiotomy was in 1900. In that case he resected the fourth and fifth costal cartilages and dissected up the triangularis sterni, which gave a free exposure without wounding the pleura. One could sometimes see the fold of pleura covering the pericardium, but often it was obliterated

by the inflammation, so one could not count upon finding it. The position of the heart within the pericardium would depend upon adhesions taking place prior to the distention of the sac with pus, and therefore before making a puncture the heart should be located with the fluoroscope to prevent injury with the needle. Puncture should be made as near the sternum as possible, in the fifth or sixth interspace, to guard against traversing the pleura. For diagnostic purposes withdrawal of some of the fluid was as necessary as in empyema. When the pericardium was opened no annoyance was caused to the great vessels by gently manipulating the heart and freeing it from adhesions. This freeing of adhesions with draining of the posterior area would probably prevent pocketing or loculation later.

Doctor LeConte said he had never used Dakin's solution in the pericardium, but he believed it was just as applicable to the pericardium as to the pleura, and he saw no reason why we should have a different procedure in the one than we did in the other.

Dr. George P. Muller, of Philadelphia, said that he was in particular agreement with Doctor Pool as regarding the necessity for drainage at the dependent part of the pericardium. The method of exposure advocated by Doctor Pool was very satisfactory. He did not think that suppurative pericarditis was particularly common except in association with certain forms of empyema. He had seen five cases only and one was operated upon. Two others were not recognized until too late, and in one case timidity on the part of the physician in charge prevented drainage.

With regard to the recess behind the left auricle, considerable space was given to this pouch by Ballance in his recent book on the surgery of the heart. Doctor Muller also had noted that in Doctor Pool's earlier paper much was made of a case in which at autopsy an undrained abscess was found in the heart sac and behind the left auricle. According to Ballance, even dependent drainage would not reach this recess, and he advocated anterolateral drainage, but it was difficult to see how such could be accomplished without seriously threatening the integrity of the pleural cavity.

Doctor Muller offered the following case for the record: A boy sixteen years of age, with a previous history of diphtheria and rheumatism and frequent attacks of tonsillitis two years previously. He was well until two weeks before admission (May 31, 1915) to the University Hospital, at which time he complained of dyspnœa, palpitation and swelling of the ankles. There was a dull pain over the liver and heart, and cough. The pain was worse on inspiration. The boy thought the symptoms came on shortly after lifting a heavy weight. Physical examination of the chest revealed cardiac dulness as beginning at the second rib and extending to the upper border of the sixth, being greatly widened to right and left. The apex beat was noted in the fourth interspace within two cm. of the limit of dulness. There was a blowing systolic murmur at the

apex, but no arhythmia. In the third interspace there was a to-and-fro friction rub. The blood count showed 16,000 (71 per cent. polymorphonuclears) leucocytes. X-ray examination revealed the presence of a large pericardial effusion.

Operation was performed in the University Hospital, June 5, 1915. Intratracheal ether anæsthesia was employed. An oblique incision three inches long was made to the left of the sternum over the sixth rib. One inch of the cartilage of this rib was removed. The muscles were pushed aside and the pericardium grasped, opened and its cavity explored. Several ounces of the bloody serum were evacuated and the heart found lightly adherent to the pericardium. About six more ounces were evacuated after separating these adhesions. Arhythmia and extra systoles were noted when the heart was touched. A rubber tube was sutured into the pericardium projecting inwards about one inch and the wound closed around it. The recovery was uneventful, and nine days later the tube was removed and not replaced. The fluid evacuated was found to contain many pus-cells and blood-cells; it was examined bacteriologically, but unfortunately this was not attached to the record.

Dr. Willy Meyer reported a case of chronic inflammation, a serosanguino-fibrinous pericardial effusion, in a tuberculous patient, thirty-three years of age. This patient was operated upon at the Lenox Hill Hospital in 1908. The left pleural cavity had been repeatedly aspirated and large quantities of clear serous fluid evacuated. The X-ray examination showed an enlargement of the pericardium and aspiration was performed by him. The puncture was made in the fifth intercostal space, close to the sternum, and 1200 c.c. of a dark fluid evacuated. The patient improved at once, but in one week a second aspiration was required, and 1000 c.c. withdrawn. After six days incision and drainage were absolutely indicated. In doing the operation the same method mentioned by Doctor Pool and Doctor Lilienthal was employed. Under local anæsthesia the sixth and seventh costal cartilages were resected and the internal mammary vessels tied and cut to get the proper access. The pleural cavity was first tapped and then the parts were pulled aside and an incision made into the pericardium. More than two quarts of fluid were evacuated. A drop-light was then used to inspect the pericardium, and the finger introduced to feel the heart beat. No pulsations could be made out. Then with stick sponges large quantities of fibrinous material were removed. The fingers now again introduced into the pericardium could feel the heart pulsations. Often in these cases of chronic effusion very large amounts of fluid were present (quarts) which was easy to understand, as the mediastinum could expand bilaterally as well as posteriorly. The first thing to be carried out in these patients after the usual clinical examination was an X-ray examination; then the aspirating needle should be used. Repeated aspiration was contraindicated; free incision of the pericardium with thorough drainage should always be

made, and fibrinous coagulations, as found in chronic effusions, thoroughly cleared out.

Doctor Meyer stated that he had seen this patient one year after the pericardiotomy was performed and he was then in very good condition. He was presented with the wound healed before the Surgical Society in 1909.

Dr. William Darrach reported a case of suppurative pericarditis occurring in a very sick negro. Drainage was instituted under local anæsthesia with considerable difficulty. The man returned later with pericardial adhesions and general anasarca, and died.

Dr. John H. Jopson, of Philadelphia, spoke of the use of the Carrel-Dakin method in the pericardium. He had operated on a young man last spring, who had what proved to be a general staphylococcus infection, beginning in the accessory sinuses. Admitted to the Presbyterian Hospital when very ill, a laryngologist operated upon him for this, and later Doctor Jopson was called to see the patient for a suspected pleural involvement. After two weeks an empyema developed on the right side, also of staphylococcic origin. This was drained under local anæsthesia. Soon after the boy began to suffer from cardiac embarrassment, and the X-ray showed a large pericardial effusion. At operation under local anæsthesia a single costal cartilage, the fifth, was resected. Doctor Jopson said he then began to use the Carrel-Dakin treatment with some trepidation. The empyema on the right side was simultaneously Dakinized. The left pleura was aspirated several times for a reaccumulating collection which remained serous. The Dakin solution was badly borne in the pericardium, and caused cardiac embarrassment, the fluid apparently being too thick and gelatinous after mixing with the pus, and it had to be given up. The patient made a strong fight for life, and finally died after an illness of more than eight weeks. An antistaphylococcic serum was also used. Doctor Jopson expressed the opinion that the method of drainage described by Doctor Pool was a most valuable one, superior to any hitherto described, and would certainly replace the old method of single cartilage resection which gave poor drainage, while this was ideal. The Carrel treatment failed in his case because of the absence of dependent drainage which was advisable here.

GASTROENTEROSTOMY IN PERFORATING ULCER OF THE STOMACH

Dr. John B. Deaver, of Philadelphia, read a paper with the above title, for which see page 441.

CHOLECYSTO-DUODENAL FISTULA AND ULCER OF THE LESSER CURVATURE

Dr. John F. Erdmann presented a man, fifty-three years of age, who one year ago began to suffer from abdominal distress four to five hours

after eating. Later he began to vomit. The vomiting had existed for the major portion of the past year and consisted of mucus to food taken the day before. There had been a slight loss in weight—five to seven pounds. He had never had any severe pains, never been bedridden, and never been conscious of losing blood, either by mouth or rectum.

November 6, 1920, he was operated upon for ulcer of the duodenum. Upon exposure it was found that profound adhesions existed between the gall-bladder and duodenum with calculi in the gall-bladder and a fistula between an old perforated duodenal ulcer and the gall-bladder. In addition, an ulcer of the size of a twenty-five-cent piece was disclosed upon the lesser curvature and posterior wall of the antrum. The appendix was atrophied. A cholecystectomy was done, in addition to closing the duodenal ulcer opening, and a typical Balfour excision of the gastric ulcer. The appendix was not disturbed.

DUODENAL FISTULA FOLLOWING CHOLECYSTECTOMY, WITH FOREIGN BODY

DOCTOR ERDMANN presented a woman, thirty-nine years of age, who was seen by him October 14, 1920. She gave a history of having been operated upon for gall-stones and appendix in New York City on May 26, 1920; again on June 1st, ostensibly for adhesions, with pus and bile leakage, accompanied with chills and fever; again on August 19, 1920, for a pus pocket. On the day Doctor Erdmann saw her she presented a fistula in the right upper quadrant, but no apparent bile. She stated that she had at one time discharged what looked like coagulated milk. There had been no chills since the third operation. She had lost forty pounds in weight. She said that her operating physician had to pack her wound during the second operation because of bleeding. She had required two dressings a day to keep her comfortable. A diagnosis was made of intestinal fistula, or foreign body.

A few hours before operating upon her Doctor Erdmann was called by telephone and advised by another physician that he had assisted at the third operation and removed quite a piece of gauze. Operation, on October 19, 1920, revealed dense adhesions. The sinus enlarged as deep approach was made. No gall-bladder was present. A foreign body, a piece of gauze, rolled like a cigar, four inches long and one-half inch in diameter, and foul smelling, was found. Removal of this revealed a hole, with indurated and irregular edges and large enough to admit a silver quarter, in the upper surface of the first portion of the duodenum.

Suture of the opening was made in three tiers, and a gastroenterostomy was done. The patient was discharged from the hospital in twenty-nine days, with only a small spot of granulation at the site of the original drain.

PERFORATED GASTRIC AND DUODENAL ULCER

ABDOMINAL SINUS; SUBPHRENIC ABSCESS; CHOLECYSTO-DUODENAL FISTULA

DOCTOR ERDMANN presented a woman, fifty-one years of age, who was first seen by him September 22, 1920. One year before, in Nebraska, she had been operated upon for gall-stones, remaining three months in the hospital. She left the hospital with a persisting fistula. In November, 1919, she went to Rochester, Minnesota, and while under observation there her fistula closed. She was told by one of the physicians to return in a year to have her gall-bladder removed. Two months before seeing Doctor Erdmann she began to have pain in the operated region, and in a few days the old sinus reopened and discharged pus and blood. She had lost considerable weight and presented the appearance of secondary anæmia, characteristic of malignancy. There was a most foul, brownish, free discharge from the sinus, which she stated required from two to five dressings a day. No bile color observable.

While under observation in the Post-Graduate Hospital she ran a temperature of from 99½° to 103° per rectum. She was anæmic, with a blood count of 3,500,000 red-cells; hæmoglobin, 47; no marked differential.

Operation (October 1, 1920) revealed an atrophied gall-bladder well below the liver border, densely attached to the colon, with a perforation into the duodenum, and a large subphrenic abscess holding over two pints of gray to brown pus, most foul smelling. The gall-bladder, upon removal and section, showed the half of a large white grape in it. The duodenal connection was closed. The subphrenic abscess was drained into the midaxillary line and through the abdominal wound. The patient was discharged from the hospital in five weeks with a small sinus in the right axillary line.

PERFORATED GASTRIC AND DUODENAL ULCER

DR. CHARLES H. PECK presented two cases, illustrating operative results in cases of perforated gastric and duodenal ulcer. The first case was that of a man upon whom Doctor Peck had operated for perforated duodenal ulcer in 1904. The operation was performed four hours after the acute onset of symptoms and consisted in a suture of the ulcer without gastroenterostomy. The man made a good recovery. He was followed up for a number of years, during which time he was in good health; he was then lost sight of until February, 1919, when he presented himself, complaining of a recurrence of ulcer symptoms, from which he had been free for a period of thirteen years after simple closure without gastroenterostomy. He now presented evidence of duodenal stricture as shown by the X-ray and corroborated by physical signs. A posterior gastroenterostomy was performed in February, 1919, almost two years ago. Doctor Peck said he presented this patient to illustrate the end-result in operation for ulcer, in the first place, and in the second place, because of the long interval that might exist before the development of a stricture

which required further treatment. There was nothing special in the detail of the case, it being a typical case of ulcer at the time of onset.

The second case also had an interesting and prolonged history. This patient Doctor Peck operated upon in 1907, thirteen years ago, for an acute perforation on the anterior wall of the stomach. The perforation was at the middle of the anterior wall; closure was effected by a simple suture without gastroenterostomy. Following this operation the patient went along in fairly good health until 1911, when she presented herself, complaining of indigestion and gastric pain and distress. The X-ray examination showed a typical hour-glass stomach, for which an anterior gastrogastrostomy, giving nearly four fingers' opening, was performed in January, 1911. The patient made a good recovery and was relieved of her symptoms for a few months. In September, 1911, she was operated upon for an acute gangrenous appendix which had perforated with the formation of a retrocæcal abscess. At both previous operations she had been so seriously ill that they had not thought it advisable to prolong the operation by performing an appendectomy. In 1915 she complained of some chronic indigestion and returned to the hospital, where an X-ray examination was made which showed the gastrogastrostomy functioning well with a broad opening which had not contracted much in the meantime. She suffered a certain amount of gastric distress in 1916, but this passed on without further operative treatment, and she was now comfortable and in good health.

Dr. Astley P. C. Ashhurst, of Philadelphia, said he agreed with Doctor Deaver in practically everything he had said, but he regretted that he had not told how many patients died without operation, for those deaths should be added to the mortality statistics. It was not so much the mortality from operation as the number of deaths from the disease that should concern us. He thoroughly agreed that it was proper to do a primary gastroenterostomy in perforated ulcer if the patient's condition permitted.

Dr. Clarence A. McWilliams said that he had looked over the records of the Presbyterian Hospital for the past four years and found that there had been a total of twenty-one patients admitted with perforated gastric and duodenal ulcers, four of whom died after operations, or 18 per cent. Nine of this total had immediate, primary gastroenterostomies performed with two deaths, or 22 per cent., while twelve had not had gastroenterostomies, of whom two died, or 17 per cent.

It was unquestioned that those upon whom gastroenterostomies were performed were picked as the best risks, consequently the mortality was sure to be greater in those upon whom a gastroenterostomy was indiscriminately performed than those without. The after-results are interesting. There were twelve cases which had no gastroenterostomy at the primary operation, two of whom died, leaving ten to be followed; of these ten, two were cured, or 20 per cent.; two were improved, or 20 per cent.; while six were unimproved, or 60 per cent.; three of these unimproved

six had subsequent gastroenterostomies without mortality and one had a subsequent perforation with death resulting after operation. Consequently, it could be said that the after-results were not brilliant among those upon whom no gastroenterostomy was done. Of the nine cases with primary gastroenterostomy, the after-results were too few to be illuminating. Of these nine with primary gastroenterostomy, two died as a result of the primary operation, leaving seven to be followed; of these seven, three were cured, or 42 per cent., while four could not be followed.

From these small statistics, the position of Doctor Deaver, as to the poor after-results, seemed to be confirmed. It certainly might be wise for the expert to add a gastroenterostomy, provided the operator thinks the life of the patient would not be jeopardized. The casual operator, however, had better not yield to the temptation to do a gastroenterostomy. It would seem to be a mistake to lay down the dictum that every perforation of a stomach or duodenal ulcer must have a gastroenterostomy at the primary operation, for this would be followed by an unnecessarily higher mortality. Stenosis of the pylorus caused by the infolding of the perforation is usually regarded as an indication for a gastroenterostomy, yet even this is not an absolute indication, for nature overcomes a considerable constriction of the pylorus. This is shown by the large number of statistics collected from many sources by Doctor Eliot, in which it was proved that in only one or two instances among the entire series was a gastroenterostomy necessary within a few weeks of the primary operation performed for acute perforation. Whether the slightly increased mortality attendant upon a primary gastroenterostomy would be offset by the mortality following the secondary operations required in a certain proportion of cases to effect a cure, a large number of cases alone would tell. So far as perforations of gastric ulcers alone were concerned, a secondary operation would allow a procedure to be performed which would be more certain to cure than a gastroenterostomy, namely, pylorectomy, if the ulcer were near the pylorus.

PERFORATED ULCERS

Total, 21 cases, 4 deaths, or 18 per cent.

1. Without gastroenterostomy—12, 2 died, or 17 per cent.
2. With gastroenterostomy—9, 2 died, or 22 per cent.

A. Gastric, 11, with 1 death, 9 per cent.
   - With gastroenterostomy, 5; 1 death.
   - Without gastroenterostomy, 6; 0 deaths.

B. Duodenal, 10, with 3 deaths, 30 per cent.
   - With gastroenterostomy, 4; 1 death.
   - Without gastroenterostomy, 6; 2 deaths.

AFTER-RESULTS

With primary gastroenterostomy, 9 cases.	2 died. 3 cured. 3 could not be followed. 1 too early to be followed.
Without primary gastroenterostomy, 12 cases.	2 died. 2 cured. 2 improved. 6 unimproved, 3 of whom had subsequent gastroenterostomies, while 1 had a subsequent perforation, with death after operation.

DR. ELLSWORTH ELIOT, JR., said that, if Doctor Deaver referred to a paper he had written some years ago, he erred in his statement that seventy-five instances of secondary operation after a primary suture of a gastric or duodenal ulcer were cited. The number of these cases was much smaller; in fact, their percentage was not as large as in those cases collected in which there was trouble after a gastroenterostomy without perforation. Some of these latter patients had so much trouble that the gastroenterostomy had to be revised and some other operative measure applied for the relief of the ulcer. Doctor Eliot said he would agree that in perforated ulcer primary gastroenterostomy done by Doctor Deaver's skilful hands, or by hands equally skilful, would not add to the mortality of the operation, but it was perhaps unwise to induce the surgeon of less dexterity to prolong the operation in this way, for under certain circumstances it might easily jeopardize the life of the patient. In a questionnaire, in connection with the paper referred to, sent out to a number of surgeons, chiefly members of the American Surgical Association, asking their opinion in reference to the performance of primary gastroenterostomy in cases of perforated ulcer, a number answered that they were convinced that the prolongation of the operation necessary for the addition of gastroenterostomy resulted in additional fatalities. The consensus of opinion seemed to be that it was safer to limit the operation to closure of the perforation, and, subsequently, if necessary, to do a secondary gastroenterostomy. Usually a secondary operation was not required, or if required it might be, as in Doctor Peck's case, many years after the closure of the perforation. A secondary operation could be done with much less risk, particularly in relatively unexperienced hands. In recent perforations without extensive peritonitis, and in skilled hands, a primary gastroenterostomy was frequently justified, but in delayed cases coming to the surgeon twenty-four to forty-eight hours or later after the perforation with extensive peritonitis, the patient's chances of

recovery are better if the perforation is merely closed. If the patient recovers and the gastric symptoms persist, a secondary gastroenterostomy can then be performed. It is interesting and important to note that the secondary operation is rarely necessary, if at all, before the expiration of several months, and frequently much later. Doctor Eliot said so far as he knew it had never been performed before the tenth day. In other words, the gastroenterostomy is done, if indicated, after the patient has fully recovered from the effect of the primary operation.

Dr. John F. Connors agreed with Doctor Deaver in all the things he said, but took exception to the performance of a gastroenterostomy in perforated ulcer as a routine measure. He cited the following statistics from a paper he had published in 1916 in which he presented an analysis of forty-two cases of perforated ulcer. Since that time there had been twelve additional cases. Of these cases 72 per cent. were simple closure by suture. In these cases 70 per cent. recovered and 30 per cent. died; in 28 per cent. of the cases a gastroenterostomy was performed at operation; 33⅓ per cent. recovered and 66⅔ per cent. died. In many of the cases which were done by suture he felt that in a large number he had lessened to a great extent the calibre of the pylorus, and it appeared at the time of operation that little if anything could pass through, but in only two of them was it necessary to perform a gastroenterostomy at a later date; one after six weeks and the other three months.

Doctor Connors said he had seen two of the cases closed by suture, one after three years, which died of pneumonia; at autopsy there were absolutely no evidences of ulcer to be found. The other was a patient who had an active tuberculous condition of the lung at the time of his perforation. He was operated two years later for a tuberculous peritonitis and no evidences of ulcer were to be seen.

Doctor Connors said that gastroenterostomy in the hands of Doctor Deaver was a safe procedure, but Doctor Deaver had well said "in the hands of a master"; unfortunately, most of us were not masters but unskilled. Therefore, he maintained that simple suture was the operation in perforated gastric ulcer.

Dr. Charles H. Peck said that when he looked over the series of perforated ulcers for the past eight years, on the Second Surgical Division of the Roosevelt Hospital, he found twenty-one cases, and these histories showed that they had frequently done primary gastroenterostomies. If a primary gastroenterostomy implied an additional surgical risk it was left for a secondary operation. In making the decision as to whether or not to do a primary gastroenterostomy it made a great deal of difference in what condition the patient was and how long a period had elapsed since the perforation. In this series of twenty-one perforations, there were twelve primary gastroenterostomies and nine simple closures. There were three deaths in the first series, a fairly high mortality. In the cases closed without gastroenterostomy there were many which were

severe cases. Doctor Peck said he believed gastroenterostomy could be done safely in many early perforations where there was not much soiling; it could be done quickly without causing much shock to the patient, and the chances for a permanent cure were distinctly better.

Doctor Peck recalled a perforation operated upon in 1909 after twenty-nine hours, when the abdomen was full of exudate. That woman could not have stood gastroenterostomy. He had followed her for fourteen years and she had remained perfectly well without a secondary operation, and without the persistence of gastric symptoms. On the other hand, there were some cases requiring secondary operation. There were four cases requiring secondary gastroenterostomy, one fifteen years after the perforation; another eleven years after, in both instances with a good interval of freedom from symptoms. The two others required the secondary operation within shorter periods. In one of these, a man seventy-one years of age, a second operation was required within twenty-one days. This patient had a fixed duodenum and an attempt was made to suture the perforation, with the result that a fistula formed which closed in about three weeks, with complete closure of the pylorus. At this time he was in a desperate condition physically, and demented also. He was now seventy-four years old and well. In another case the secondary operation was done thirty-two days after the first. In a good many cases if it could be done without increasing the mortality an immediate gastroenterostomy had its advantages, but, on the other hand, there are a good many cases in which fifteen or twenty hours after perforation there was a good deal of exudate and it was better policy to close the perforation and take a chance of having to do a secondary gastroenterostomy.

Dr. John A. Hartwell said that one got the impression from the paper and the discussion that statistics on this subject were of very little value, as they varied so much in the different clinics. He felt that one could scarcely lay down a rule of practice, but that each case must be considered on its merits. He had understood Doctor Deaver to say that he had never seen a perforated ulcer that could not be properly closed, and he wondered that if possibly some of the deaths reported had not been due to the failure of union or an incomplete closure, with a resultant peritonitis.

Another point brought out by Doctor Hartwell was that the production of gastroenterostomy was not a natural procedure, and a person with a gastroenterostomy was not a normal person. He had gone on the principle that the surgeon who performed a gastroenterostomy must show cause why he should do it. In other words, a gastroenterostomy was not something to be done because it was convenient, but one must show why it was a good thing. If there was an obstruction at the pylorus after the perforation was closed, then gastroenterostomy should be considered. If the patient was in good condition and there was reason to think the stomach sufficiently deformed so that the musculature would

not properly function, a gastroenterostomy should be performed. Otherwise the stomach should be left in as nearly a normal condition as possible until subsequent evidence made a secondary operation advisable. Gastroenterostomy in itself was justly considered as largely a curative measure for pyloric and duodenal ulcers. It, however, was not curative for gastric ulcers, and hence the necessity of its employment in gastric perforations was less apparent than in duodenal perforations.

DOCTOR DEAVER, in closing the discussion, said that, speaking of the surgeon with large experience and of the occasional surgeon, the occasional surgeon should not do a posterior gastroenterostomy as a routine procedure. Most of their posterior gastroenterostomies were done in early perforations. Patients operated upon after seventy-two hours practically all died whether suture alone was done or a primary gastroenterostomy added. The success of this procedure depended upon its being done early. In diffuse peritonitis few surgeons would perform a gastroenterostomy, but done in the early stage by a well-trained surgeon it was safer than simple suture, because there was less likelihood of leakage, and he believed that was one reason why it had been followed by better results. One must not lose sight of the fact, as one of the speakers had remarked, that from the physiological standpoint it might be better to go on with the stomach in its natural condition, but it must be remembered that many people with posterior gastroenterostomies were just as well as those who had never had anything wrong with their stomachs. The 80 to 90 per cent. of cures recorded by Moynihan, the Mayos, and others followed up, afforded proof of this statement.