

under the care of Prof. Rose and myself (*Brit. Med. Journ.*, Dec. 3, 1898), where we had occasion to tie first the common carotid and then the subclavian, both on the left side, for aneurysm of the aorta involving the root of the carotid, and, possibly, of the subclavian. The result in this case proved everything that could be expected or desired; the dyspnoea and pain both passed away, and the patient is able to get about again in comparative comfort. Of course the aortic dilatation persists, but the pulsation is less forcible than formerly, and had nothing been done it is probable that the patient would long ago have died.

Aneurysm of the abdominal aorta treated by introduction of gold wire and electrolysis. Noble, of Philadelphia (*Phil. Med. Journ.*, June 25, 1898), relates a case in which Stewart's plan of treatment (commented on in the "Year-Book for 1898," p. 189) was applied with brilliant success to an abdominal aneurysm. The patient was an Englishman, thirty-seven years of age, who had suffered from syphilis fifteen years previously, and who came under observation for acute abdominal pain of a boring character, together with severe gastric disturbance. On examination of the abdomen an aneurysm the size of a large foetal head was found midway between the ensiform appendix and umbilicus. Treatment by rest, iodide of potassium, opium for the relief of his pain, and the administration of nourishing food in small quantities frequently repeated seemed utterly unavailing, and the patient gladly agreed to operation. The abdomen was opened, and the aneurysm exposed by separating a number of adhesions. A small cannula was introduced into the sac, blood spurting out of it to a distance of several feet. Eight and a half feet of hard drawn No. 30 gold wire were introduced into the sac, and the positive pole of the battery was connected with the end of the wire, the negative with a clay plate beneath the patient's buttocks. Electrolysis was maintained for about thirty-seven minutes, the current being gradually increased until it reached 70 milliamperes, at which it was kept for six minutes. By this time the pulse was very rapid, and the patient's condition not at all good. The wire was cut short, the cannula withdrawn, the abdomen closed, and the patient put back to bed, the operation having occupied two hours and ten minutes. "There was no pain after the second day, and improvement was rapid. The pulsation in the stomach of which the man had complained so much before disappeared entirely, and he was able to retain nourishment without difficulty. He was kept in bed about eight weeks, and when discharged the mass had lessened to the size of a small orange, and gave no pain. The man returned to his home apparently well." This is the eleventh case on record

of treatment of aneurysms in this way, and we cannot but feel that it is a valuable addition to our means of dealing with some of the more hopeless cases of this terrible affection.

Wounds of the thoracic duct.—The extension of operative procedures for carcinoma of the breast into the supra-clavicular fossa is responsible for a number of cases of this type, and it is important not only to remember its possibility but also to recognise how it may be treated should it unfortunately occur. Four new cases are reported from America during 1898 (*Annals of Surgery*, June and August, 1891, pp. 719 and 229), and five by Wendel (*Deut. Zeit. f. Chirurg.*, Bd. xlvi., p. 437). It must be remembered that the main thoracic duct communicates with the venous circulation in the so-called *angulus venosus* at the junction of the left subclavian and jugular veins. Wendel has made a number of careful dissections and confirms what has already been pointed out, viz. that it is the usual thing for the duct to terminate, not in one main branch but by a number of smaller trunks, and thus it is possible for one or more of these to be injured, giving rise to an escape of chyle, and yet on tying or otherwise stopping the flow, no evidence of lymphatic obstruction occurs. Wendel also states that there is sometimes a communication between the thoracic duct and the vena azygos major, as also with the renal vein, a condition found in four out of twenty-nine observations. As to the treatment to be employed for an accident of this type, should it be recognised at the time of operation—if the wound in the trunk is longitudinal it may be practicable to close it by suture without totally occluding the vessel; this was successfully accomplished by Cushing in one of the cases mentioned above. Failing this, a ligature should be applied, and should this tear off, as is not uncommonly the case, tamponade of the wound must be resorted to, and in all probability it will suffice. Should the lesion not be recognised at the time, and the wound closed, evidence of distension in the latter will soon manifest itself, and sooner or later chyle will escape externally. This should be dealt with by opening up the wound, looking for, and if possible tying, the divided vessel, and, failing this, tamponade.

VI.—ABDOMINAL SURGERY.

The surgery of the stomach.—No organ within the abdomen has received so much attention during 1898 as this viscus, and a great impulse has been given to it partly by the record of cases of total gastrectomy which have been reported, and partly by the publication of statistics of the work of many surgeons during the past few years. In reality the stomach appears to be one of the

most favourable organs in this region to operate on. Two very exhaustive series of lectures dealing with this matter have been published, and to these constant reference will be made, viz. by Keen (*New York Med. Journ.*, May 7, 21, and June 4) and Barker (*Clin. Journ.*, April 20, *et seqq.*).

Total removal of the stomach.—At least five cases of total gastrectomy have been reported in 1898, and probably others have been undertaken; of the five four recovered, and only one died, and that from collapse. Schlatter (*Corresp. Bl. f. Schweiz. Aerzte*, 1897, No. 23) published the first case, and thus set the ball rolling. The patient was a woman, aged fifty-six, with all the signs of a well-marked cancer of the stomach. On performing an exploratory laparotomy it was found that the walls were so infiltrated that gastro-enterostomy was out of the question. The growth was, however, so entirely limited to the organ that it seemed justifiable to attempt its total removal. This was done by first freeing it from the structures in the greater and lesser omenta, and then cutting it away at the level of the cardiac and pyloric orifices respectively. It was then found impossible to approximate the two ends, and therefore the duodenal orifice was totally closed, and the lower end of the œsophagus was united by a series of silk stitches to a lateral opening in a suitable coil of jejunum, drawn up over the transverse colon. The abdomen was totally closed, and the patient made a good recovery. She was fed after the third day by the mouth, and within two months gained nine pounds in weight and complained of nothing. She was then able to take ordinary food, and an examination of the motions and fœces demonstrated that her powers of assimilation were perfect. In Brigham's case (*Boston Med. and Surg. Journ.*, May 5, 1898) an inch and a quarter of free œsophagus remained in the abdomen after removal of the stomach, and it was found that the upper end of the duodenum could be brought into apposition with it without much traction. A Murphy button was utilised in this case to unite the two ends, and no supporting sutures were needed. Hot water in 3-dr. doses was given every hour on the second day, and food in somewhat similar doses on the third. Gradually the amount given was increased, but she did not take more than 6 dr. at a time with comfort, even at the end of a week. On the thirteenth day she found that she could swallow with ease, all evidence of obstruction having ceased, and it is presumed that the button must have passed on about this time. In Noble's case (*Med. Record*, July 23, 1898) the patient was really too far gone for success, the surgeon only undertaking operation at the urgent demand of the patient, who collapsed before it was terminated. The technique

was identical with the former operation, the ends of the duodenum and œsophagus being united without much difficulty by a Murphy button, as also occurred in the case reported by Macdonald, of San Francisco (*Journ. of Amer. Med. Assoc.*, Sept. 3, 1898), whilst Richardson (*Boston Med. and Surg. Journ.*, Oct. 29, 1898) utilised silk stitches, but had to divide some retro-duodenal bands before he could secure approximation. The latter only took one hour over the proceeding, and the loss of blood and shock were slight.

Such a record of cases is remarkably good, and if to them be added the many cases of partial resection of the stomach which have been recorded in recent years, the death-rate is as low as in any other serious type of intestinal resection. Thus Krönlein reported to the German Congress of Surgery at Berlin (*Wiener klin. Rundschau*, July 31, 1898) that in the course of the last few years he had undertaken twenty-one cases of partial gastrectomy, of which only five had died, and of the last seventeen operations there had been only two deaths. Schuchardt (*ibid.*) reported on a case where he had removed nearly the whole stomach, except three fingers' breadth of the cardiac orifice, with recovery, the patient living for three years, and then dying of cancerous pleurisy. It appears that at first she was only able to eat small meals, but as time passed the capacity of the portion of the viscus that was left increased so that an ordinary meal could be eaten with comfort. The necropsy showed that there was no recurrence in the stomach, and that owing to dilatation of the small portion of the cardia and of the duodenum its capacity had become normal. No hydrochloric acid had, however, been secreted, although much lactic acid had been found. Wendt (*Med. Record*, Dec. 25, 1897) draws the following conclusions as to gastrectomy: (1) The human stomach is not a vital organ; (2) the digestive capacity of the human stomach has been much exaggerated; (3) the fluids and solids constituting an ordinary mixed diet are capable of complete digestion and assimilation without the aid of the human stomach; (4) a gain in weight may occur without gastric activity; (5) typical vomiting may occur without a stomach; (6) no immediate deterioration in health need occur after removal of the stomach; (7) the most important function of the stomach is to act as a reservoir for the reception, preliminary preparation, and propulsion of food and fluids; (8) the chemical functions of the stomach may be completely and satisfactorily performed by other divisions of the intestinal canal.

Pylorotomy is rarely undertaken except for malignant stenosis. Barker (*op. cit.*) gives long statistical tables dealing with the mortality of the proceeding, from which it appears that in all the published cases it amounts to about 50 per cent.,

somewhat higher in the malignant cases, and lower in the simple ones. The figures have, however, been modified of late years, showing that modern methods and appliances are having their fruit in increased success. Still the death-rate does not fall much below 40 per cent. in malignant cases, and 28 per cent. in non-malignant.

As to methods of operating, the chief difficulty has always been felt to lie in bringing the unequal segments of the duodenum and stomach into accurate apposition. To this end, not a few operators close the lower end of the stomach entirely, and implant the duodenum into a separate opening in the posterior wall, either using a Murphy button, or relying, as does Kocher, on simple suturing. Czerny prefers to do a posterior gastro-enterostomy first, and then excises the pylorus, totally closing the two ends. Tuffier (*Presse Méd.* Oct. 29, 1898, p. 259) has operated nine times for tumours of the pylorus; four died within a few days, and there were five operative cures. In one case he united the segments end to end, in four he sutured the duodenal orifice to the posterior wall of the stomach, and in five he depended on a gastro-enterostomy, closing the wounds in the stomach and duodenum. R. Morrison (*Brit. Med. Journ.* Feb. 19, 1898) describes the method he adopts to bring about a satisfactory end-to-end suture. He divides the anterior wall of the duodenum for about an inch in its longitudinal axis, and by spreading it out makes the duodenal orifice as nearly as possible equal to that in the stomach. He then approximates and steadies the ends by the use of three fixation stitches which remain loose, though clamped above by forceps; the posterior wall is then united by a continuous stitch including all the coats of the gut. This is carried right round the opening, and the fixation stitches can then be removed. Finally the continuous stitch is buried by the insertion of a series of interrupted Lembert sutures all the way round. Morrison claims that by the adoption of this plan the operation is expedited, and that a firm bond of union will result with no tendency to sloughing at the margins. He reports two cases, both successful as regards the immediate result.

The surgical treatment of gastric ulcer is becoming more and more established. One is fully ready to admit that there are a certain number of cases which react readily and quickly to medical treatment, but there are others which do not. The duration of the illness, the difficulty of nutrition, the possibility of the patient's lowered state rendering her more liable to other infective troubles, such as tuberculosis, the danger into which she may be brought from hæmorrhage, or as the result of

adhesions between the stomach and the parietes, possibly determining intestinal strangulation, let alone the risk of perforation and the possible supervention, at a later date, of cancer—all these are reasons why surgeons may rightly be called upon to undertake the treatment of such cases, granted that they can do so without exposing the patient to undue risks. Keen (*op. cit.*) argues very strongly along these lines, even urging that when the diagnosis is in doubt, it is not only proper, but it is the highest duty of the surgeon to make an exploratory laparotomy in order to determine the correct diagnosis and institute the proper treatment.

Excision of the non-perforating ulcer has been undertaken in a number of cases, and practically always with success, if we exclude a few instances where pylorotomy was undertaken. Naturally the situation is a point of prime importance, but granting that it can be got at without much difficulty, there is no reason why complete excision should not be performed. "The danger to life from gastric ulcer," says Mikulicz, "is at least not less, but probably far greater, than the danger of a complete modern operation."

Hæmorrhage from gastric ulcer does not offer such a good field for surgery. About 5 per cent. of all cases of ulcer of the stomach die from this cause, which may occur either as a furious outburst, killing by the first or second bleeding, or as a more chronic flow, constantly repeated and gradually draining away the patient's strength. For the first type of hæmorrhage, although successful cases are recorded, operation is not on the whole to be advised, eight out of twelve cases dying, according to Hartmann (*Semaine Méd.*, Nos. 8 and 9, 1898). His conclusion is that most cases of hæmorrhage can be arrested by rest, absolute diet, and bandages to the four extremities, to which, perhaps, saline infusions may be added. For the more chronic forms of bleeding there can be no question as to the advisability of operation, the nature of which must depend upon the conditions found at the time; failing excision, any means, such as pyloroplasty or gastro-enterostomy, whereby the emptying of the stomach is expedited, assists in keeping it at rest, and thus conduces to a good result.

Gastro-enterostomy v. pyloroplasty in cases of pyloric stenosis not due to malignant disease.—Carle and Fantino (*Il Policlinico*, March 15 and April 15, 1898) discuss this question relative to forty-four cases that have been under their care. Thirty of them were cicatricial in origin, eight spasmodic, three due to gastric atony, and two to stricture of the duodenum. It is most

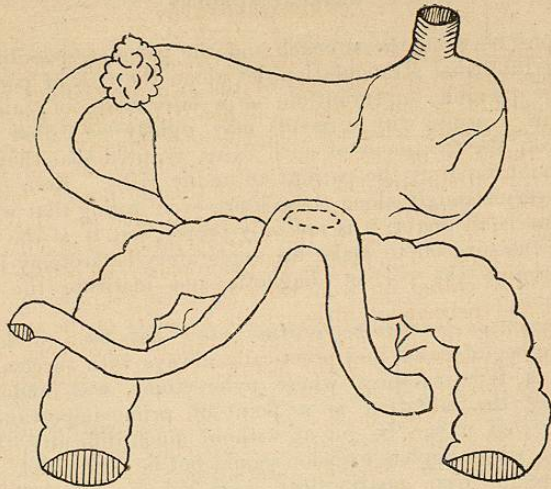


Fig. 7.—Original anterior gastro-enterostomy, in which the jejunum is drawn up over the transverse colon to be attached to the stomach.

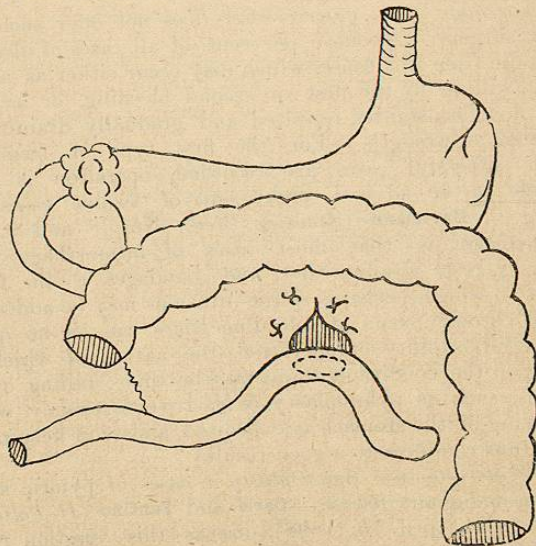


Fig. 8.—Posterior gastro-enterostomy (von Hacker), in which a hole is torn through the transverse mesocolon, and the stomach and jejunum thus approximated.

important to allow the stomach to empty itself as rapidly as possible, and to this end one of the two proceedings mentioned above should be undertaken. When the pyloric thickening is very exaggerated, when an abundance of adhesions exists around, when the site of stricture is in the duodenum, or when the stomach is atonic and has lost its contractile power, then gastro-enterostomy should be undertaken, and that by the posterior method. The mortality in the two operations is about the same, viz., 7 per cent. The results of pyloroplasty, as tested in seventeen cases operated on from three to seven years previously, are perfect and permanent, although the capacity of the stomach did not diminish to such an extent as might have been expected from the improvement in the health. (See also editorial article, *Annals of Surgery*, June, 1898.)

As to the actual means of performing gastro-enterostomy, there has been much discussion. Two chief methods have been advocated, viz., the original anterior method (Fig. 7), in which the jejunum is brought up over the transverse colon to be attached to the anterior stomach wall; and the posterior method of von Hacker (Fig. 8), in which a hole is torn in the transverse mesocolon, through which the jejunum is connected with the posterior gastric wall. There is an almost unanimous opinion in favour of the latter method. The anterior operation necessarily tends to lead to constriction of the transverse colon, whilst, owing to the necessary drag of the gut, the two limbs tend to become parallel to each other (Fig. 9), and hence "the afferent limb distends, and pressure is produced upon the efferent loop. Owing to this, a spur is produced between the two limbs which directs the bile into the stomach, and prevents its entrance into the efferent limb" (Barker, *op. cit.*). This leads to recurrent bilious vomiting, which may be so considerable as to prove fatal.

The posterior operation is usually followed by good results, but even here there is a tendency to bilious vomiting and to regurgitation through the artificial opening, partly due to kinking of the gut. To avoid this difficulty many authorities are now recommending the combination with it of an entero-enterostomy—that is to say, that the afferent and efferent coils of gut are united together below the point of union with the stomach by a lateral anastomosis (Fig. 10). At the French Surgical Congress (*Presse Méd.*, Oct. 29, 1898) several speakers commended this plan of operating, which is sometimes known as Roux's plan of "*anastomose en Y.*" Weir (*New York Med. Record*, April 16, 1898) also believes it to be the best plan; whilst Keen (*op. cit.*) thinks it useful, though scarcely applicable to all cases, since so many of

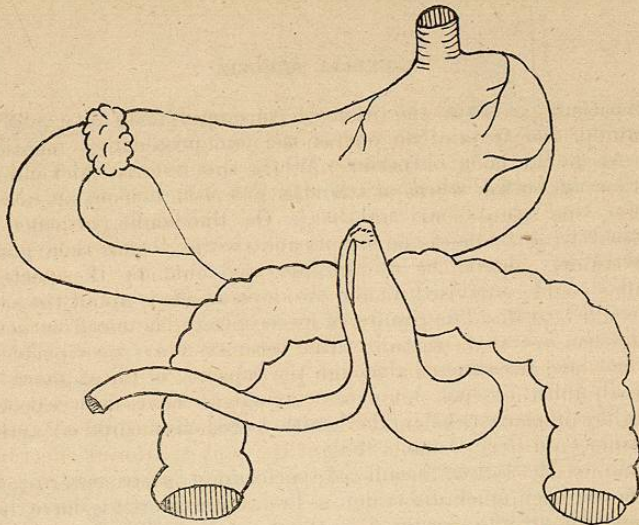


Fig. 9.—Inefficient anterior gastro-enterostomy; the drag of the intestine forms a kink at the point of junction.

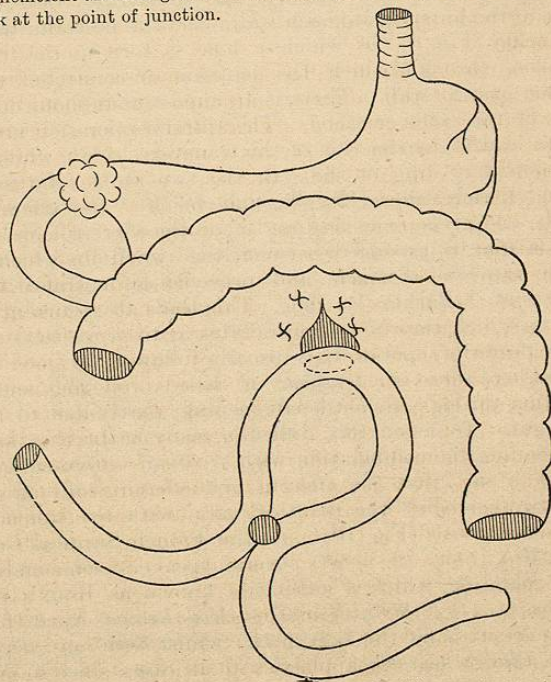


Fig. 10.—Posterior gastro-enterostomy associated with an entero-enterostomy.

the patients are in a condition of considerable debility, and any undue prolongation of the operation is inadvisable.

As to methods of performing the anastomosis, the old discussion of button *versus* stitch still proceeds. Some authorities prefer one plan, some another. On the whole, surgeons are endeavouring to do, as far as possible, without such a dangerous mechanical contrivance as the Murphy button; if something similar could be devised which could be applied equally quickly, it would be a desideratum. As Keen says, "The ideal method of union has yet to be found." Paul recommends (*op. cit.*) that the serous and muscular coats of the portions to be united should be incised, and the exposed mucous membrane well cauterised with chloride of zinc; the denuded areas are then sutured accurately together, and it is probable that, if the cauterisation is effectually accomplished, sloughing will take place in a day or two, and the artificial communication thus be established. Of course, this depends upon the occurrence of sloughing, and it would be decidedly awkward if it did not occur. Keen notes this point in discussing this proposal, and condemns the plan as utterly unscientific.

Appendicitis.—Much difference of opinion still exists as to the treatment of this affection, although one is thankful to note that the importance of early surgical intervention is beginning to find its way into the conservative minds of the majority of practitioners, even in Great Britain. Still the fact that in America Richardson and Brewster (*Boston Med. and Surg. Journ.*, July 14, 1898), commenting on an analysis of 464 cases, have to admit that thirty-one were moribund when first seen by the surgeon, shows that much has to be done in educating both the lay and the medical public as to the nature and gravity of the disease. Statistics are naturally extremely misleading, but it is worth noting that, of the 464 acute cases mentioned above, 180 were treated medically, and of these thirty-one died, giving a mortality of 17 per cent.; whilst 284 were operated on, with a death-rate of 21 per cent. Of course, some of the thirty-one fatal cases on the medical side might have been cured by operation, whilst possibly some of the sixty-three surgical deaths might have been avoided if operation had not been undertaken, or had been performed earlier. When to operate in acute appendicitis still remains the great bone of contention. Treves, in his article on perityphlitis (Clifford Allbutt's "System of Medicine": Macmillan & Co., 1897) maintains that surgical intervention in an acute attack should only be undertaken when there is evidence that suppuration has taken place, and the object of the operation

is to evacuate the pus. Quénu (*Journ. des Praticiens*, No. 10, p. 145, 1898) says: "Le but essentiel de l'opération est de donner issue au pus, sans transformer un foyer d'infection circonscrit en un foyer généralisé." Czerny stated as his opinion not long ago that the first attack of appendicitis belongs to the physician. "This attack may (a) pass by without complication, in which case there is no occasion for surgical interference; or (b) earlier or later, with alarming symptoms of general or local nature (fever, rapid pulse, pain, dulness on percussion, rigidity), it may go on to perforation and abscess formation. Such an abscess either (A) leads to progressive and threatening peritonitis, or (B) it remains circumscribed and becomes encapsuled, the first severe symptoms remaining without important change. The conditions (b), (A), (B) indicate surgical treatment, as do all recurrent chronic forms of appendicitis, whether they be purely catarrhal, ulcerative, perforating, or obliterative."

With due deference to these distinguished authorities, their conclusions do not strike one as surgically sound. Waiting for the formation of pus in these cases often permits the case to get out of hand, and the logical position is surely to anticipate the formation of an abscess, which may burst at any moment into the peritoneal cavity and produce a grave infection which cannot but lead to a fatal issue. Moreover if operation is undertaken early, there is much more likelihood of the *fons et origo mali* being removed, whilst the patient is protected from the risks of recurrence, and the period of convalescence is considerably diminished.

As to the operation itself there is no need to say very much. The position of the *incision in the abdominal wall* is an important one. Woolsey (*Annals of Surg.*, Jan., 1898, p. 6) discusses this matter in a valuable article, showing that one of the chief things to consider in planning one's abdominal incision is the situation and direction of the nerves. Vertical incisions are on the whole bad because these are thereby divided, and the strength of the walls must thereby be diminished. He considers that Jalaguier's proposal is fairly good, and certainly one has practised it with advantage. It consists in a vertical division of the superficial layer of the rectus sheath about an inch from its outer border, the retraction of the intact muscle inwards, and the division of the posterior layer of the sheath and the subjacent layers much in the same line as that of the incision of the superficial layer of the sheath. Such a wound can be stitched up so as to give a firm cicatrix; but, of course, it divides nerves, and therefore in many cases an incision parallel to Poupart's ligament will suffice admirably. In recurrent chronic

cases McBurney's method of separating the fibres of the muscles and holding them aside with retractors without dividing any of them is an admirable arrangement, as being less likely to lead to the subsequent development of a hernia.

As to the method of removing the appendix when found, various plans of amputation have been recommended from time to time, but there are objections to all of them, and one has seen many cases of infection evidently due to imperfect closure of the stump of the appendix. Deaver (*Annals of Surg.*, Jan., 1898, p. 81) recommends *total excision of the organ from the cæcum* with a pair of curved scissors. The assistant carefully holds the cæcum in his fingers, and by compressing it prevents any faecal escape; the surgeon then puts the appendix on the stretch and clips it away. The wound thus made is readily closed by a double row of stitches, dealing with the mucous membrane and superjacent coats respectively. Haggard (*Journ. Am. Med. Assoc.*, June 4, 1898) fully agrees with this plan and considers it very valuable. Brown (*Med. Record*, July 30, 1898) has also utilised it with advantage.

It is unnecessary to repeat what has been stated so often as to the necessity of operation in chronic and relapsing appendicitis. All authorities are agreed as to the simplicity and (in careful hands) safety of the proceeding, and lists of hundreds of cases are being constantly published with a minimal mortality. One little observation is worth noting in this connection as it emphasises the necessity for surgical intervention. Hartmann (*Gaz. Méd. de Paris*, Nov. 27, 1898, p. 570) examined bacteriologically the contents of a terminal unobliterated portion of an appendix, the intestinal end of which had been occluded by a preceding attack of inflammation. He found the bacillus coli present in large numbers, and they were in a state of extreme virulence as compared with those in the cæcal extremity of the tube.

Idiopathic dilatation of the colon forms the subject of an interesting paper by Treves (*Lancet*, Jan. 29, 1898), in which he stated that the dilatation is not as a rule idiopathic at all, but due to contraction of the sigmoid flexure or of the rectum as a result of some congenital malformation. The patient, who formed the subject of the paper, was a child aged nearly six years; ever since birth the abdomen had been distended, and at the time of examination it was "enormous." Treves opened the abdominal cavity, and found that the dilatation involved the whole colon, and was due to a contraction in the site already mentioned. He consequently excised the whole rectum, sigmoid and descending colon, dragging down the

transverse colon into the hole in the perineum, through which the rectum had been removed, and stitching its margins to the skin. The child made a perfect and uneventful recovery. All other cases on record have died, except one in which colotomy was performed, and hence the practitioner has an important object-lesson as to the treatment required should a case of this nature present itself.

Colotomy.—Paul (*Liverpool Med. Chi. Journ.*, July 1898, p. 395) recommends the application of the valvular plan followed with so much success in gastrostomy to this operation. "I make the incision in the line of the internal oblique fibres, withdraw the bowel, attach it by one or two sutures to the deep part of the wound, then pass it under the external oblique directly backwards for about two inches, where it is brought out and sutured to the skin, the original skin wound and the opening in the external oblique being completely closed." Several cases in which this plan was followed are alluded to, and the results seem to have been excellent.

Removal of gallstones from the lower end of the common bile duct.—McBurney (*Annals of Surg.*, Oct. 1898, p. 481) describes the last of six cases in which he has removed a calculus through an incision in the duodenum, and in all of them, with one exception, the patient recovered perfectly; the fatal case was due to prolonged and uncontrollable vomiting, there being no sign of peritonitis or perforation. The plan he adopts is to make a very free oblique incision in the abdominal parietes parallel to the right costal margin, thereby exposing the liver and gall bladder, which in these cases is often shrunken, although the liver is enlarged. The absence of stones in the gall bladder having been determined, or their removal having been effected in the usual way, the bile ducts are examined, and when a stone has been located in the lower end, the duodenum is drawn well into view and incised for about an inch and a half along its anterior wall. The papilla marking the entrance of the duct into the bowel is then looked for, and a probe passed along it to confirm the presence of the stone. The orifice is then incised and dilated; it is found that an incision half an inch long can be safely made. By a process of manipulation from behind and by gently pressing the intestinal walls backwards over it, the stone is gradually delivered, and is followed by a flow of bile into the intestine, even at the time of operation. The wound in the duodenum is then sutured, and if thought advisable a gauze drain may be passed down to the site of the operation for a day or two.

The advantages of the method are very obvious when one has got over the traditional fear of opening the intestine and stitching it up again. In none of McBurney's cases has there been the slightest hesitancy in the wound healing. Moreover, the bile ducts can be thoroughly explored in this way, and the incision and dilatation of the orifice is rather advantageous, as it permits of the discharge of any calculous *débris* that may remain and diminishes the risks of subsequent stenosis. McBurney considers that this proceeding could with much advantage be substituted for many of the cases of choledochotomy that are reported from time to time; the suturing of a wound in the common bile duct is a matter of considerable difficulty in many cases, whilst it is a very easy and almost always successful matter in the duodenum. The proposal is not an entirely new one, as in the "Year-Book" for 1896 I mentioned a case in which Kocher had performed a somewhat similar operation, except that he divided the posterior wall of the duodenum as well as the anterior, and also had to incise the bile duct, subsequently suturing together the contiguous walls of the duct and bowel, and closing the anterior wall of the duodenum. As McBurney says, "This operation has a very legitimate place in gall-bladder surgery, and one that has not been sufficiently appreciated."

To facilitate the closure of wounds in the common bile or cystic ducts after incising them for the removal of calculi, Halsted (*Phil. Med. Journ.*, April 2, 1898) has had made a series of miniature hammers, which can be introduced into the duct during the introduction of the stitches, thus steadying the parts and preventing the escape of bile. The hammers are of variable sizes, and the handles are attached to one end of the head so as to facilitate introduction and withdrawal. The plan certainly seems a good one, as it is often extremely difficult to fix and steady the duct, and its accurate closure is a matter of vital importance. Halsted has utilised his method on the living subject with success.

Movable liver.—A number of cases of operation for this condition have been reported, one of the most interesting and most instructive being that related by Blanc (*La Loire Méd.*, Dec. 15, 1897). His patient was a woman, aged 35, the subject of locomotor ataxy; from time to time she suffered from febrile attacks associated with a slight degree of icterus and marked bilious vomiting. Examination, between two of these attacks showed the liver to be enlarged and somewhat tender, and displaced downwards so as to reach three-fingers' breadth below the umbilicus. It could easily be replaced upwards beneath the costal margin, but as soon as pressure was removed it slipped

down again. Evidently this was the cause of the bilious attacks, which were induced by kinking of the bile ducts. An operation was undertaken through a vertical incision, showing the liver to be movable, hard, and more or less constricted as the result of tight lacing. The upper surface of the organ was scarified, as also the peritoneum under the costal cartilages, so as to produce bleeding surfaces and thus expedite the formation of adhesions. Three silk stitches were introduced through the hepatic tissue extending a centimetre and a half into its substance, and then they were carried round the costal cartilages. In addition, three silk stitches were inserted through the liver and the peritoneal and muscular coats of the abdominal wall. The success was perfect and the convalescence rapid, the patient no longer experiencing the bilious attacks.

Tumours of the liver are coming more and more within the scope of the surgeon's work, and a number of papers have appeared dealing with this subject. Naturally there are a large number which cannot be attacked owing to their deep situation in the substance of the organ, and many malignant growths are so disseminated as to render removal hopeless. On the other hand, some tumours are found to be distinctly pedunculated, whilst the situation of others in the peripheral portions of the lobes suggests that, granting efficient hæmostasis, their removal might be safely effected. *Martin* (*Birmingham Med. Review*, Feb., 1898, p. 92) relates a case of the former type. A woman, aged 36, applied for relief, owing to the presence of a painful swelling in the abdomen, which gradually increased in size, and was at first thought to be a cystic kidney. On exploration it was found to be an accessory lobe of the liver, separated from the main mass of the gland by a fibrous pedicle, containing some large blood-vessels and the cystic duct, whilst the gall bladder lay in front of the mass and was adherent to it. The pedicle was transfixed and tied by three interlocking silk stitches, and the whole lump cut away. The patient did extremely well. Of course, such cases are only occasionally met with, and the more common type is that in which the tumour is embedded in the liver. Where treatment is at all feasible, *Keen* (*Therapeutic Gaz.*, Jan. 1898, p. 53) recommends that if possible an artificial pedicle should be made with the cautery, and then the mass fixed in the wound and an elastic ligature tied round it. The extra-abdominal method of treatment of the base is, however, falling into disuse, since it is maintained by several observers that hæmorrhage from the liver is readily restrained. Thus, *Waring* (*Lancet*, March 19, 1898, p. 778) advises that the circulation in the organ should be

controlled by the application of pressure to the gastro-hepatic omentum. A wedge-shaped piece of liver including the diseased area is then excised, divided blood-vessels are picked up with forceps and ligatured, and the margins of the hepatic incision brought into apposition and sutured. *Terrier and Auvray* (*Revue de Chirurgie*, May and Sept., 1898), in a very full and valuable monograph on the subject, discuss all the different methods that have been adopted, and incline towards the same plan. They have been able to collect thirty-eight cases of genuine excision of a portion of the liver, excluding pedunculated masses such as *Martin's*, and find that there were only six operative deaths, attributable to hæmorrhage, shock, and sepsis. The first cause, viz. bleeding, was responsible for only two of the six deaths; hence it is evident that the danger from this source is much less than one would have expected.