the discharge. It was found that the semi-prone posture with the foot of the bed raised facilitated its escape. The tracheal wound healed rapidly by granulation, and does not show any tendency to undue contraction. The only serious annoyance he experienced after the first few days was due to the collection of inspissated mucus in the tracheal opening during the hours of sleep. This difficulty ceased after a few weeks, and while it lasted it was checked somewhat by smearing vaseline over the edges of the opening. The patient is now, six months after the operation, in excellent health, can swallow perfectly, has no respiratory difficulty, although he has not worn a tube since the operation, and, most remarkable of all, can carry on a conversation in a loud sibilant whisper. This he effects by drawing air through the nose into his pharynx, and expelling it buccally.

REMARKS.

It is now a well-established fact that epithelioma of the vocal cords usually runs a chronic course, and that for a long time its ravages do not spread beyond the interior of the larynx, while the same disease when it attacks the upper surface of the larynx grows rapidly and produces

Fig. 2.—A. Epiglottitis. B. Epitheliomatous ulcer. C. Old tracheotomy opening

early infection of the cervical lymph glands. This knowledge has been utilized by Sir Felix Semon and Mr. Butlin, who practise thyrotomy and partial laryngectomy for intrinsic laryngeal epithelioma instead of total laryngectomy, which is usually resorted to by Continental surgeons for this disease. A study of their papers and of their carefully-prepared statistics cannot fail to produce the conviction that their operative procedures are much safer than total laryngectomy as it is commonly carried out, and that in early cases, at any rate, their results as to immunity from recurrence are excellent, although I do not think they can be so good as after complete removal of the larynx. An additional advantage secured by resection over total laryngectomy is the ability of the patient to speak, even though it be indistinctly, without the aid of a mechanical appliance. Against this, however, must be placed the tendency to laryngeal stenosis.

Much stress is laid by Sir Felix Semon, Mr. Butlin, and other writers on the miserable condition of patients who have survived the operation of total laryngectomy—a condition which, according to one writer, makes life hardly worth living. Without wishing in any way to challenge the accuracy of the data on which these statements are

made, I can most emphatically say that my patient, apart from the fact that he is unable to speak otherwise than in a whisper, is more comfortable than he was with a mutilated larynx.

While I do not wish to dogmatize on a subject of which I have only a casual practical experience, I venture to suggest that a stumbling-block to the successful performance of total laryngectomy has been the desire to leave an opening in the pharynx for the subsequent reception of an artificial larynx. This doubtful advantage is secured at a very great cost; indeed, I think, at an unjustifiable cost. It involves an open wound, which must be constantly fouled by discharges from the pharynx, and is the most potent factor in producing septic lung troubles, which bulk so largely among the causes of death after the operation. It very greatly increases the difficulty of feeding the patient, and it causes a much-delayed convalescence. Moreover, the benefit gained can be almost equally attained by carrying a tube fitted with valves and a vibrating reed from the tracheal opening up the side of the neck and chin into the angle of the mouth.

I was particularly fortunate in that my patient had an old-standing and fairly low tracheotomy opening. This, conjoined with the posture I placed him in, enabled me to dispense with a tampon cannula. The swabbing of the parts from time to time with a mixed solution of eucaine and adrenalin is, I think, helpful. It deadens the highly-sensitive mucous membrane, and thereby reduces the depth to which general anaesthesia must be pushed, it reduces the oozing from cut vessels, and, perhaps most important of all, it largely curtails the shock incidental to the prolonged irritation of the laryngeal nerves.

APPENDICITIS AND ABSCESS FORMATION.

By JOHN D. MALCOLM, F.R.C.S. EDIN.,

SURGEON TO THE SAMARITAN FREE HOSPITAL.

THE difficulty of making a diagnosis between disease of the vermiform appendix and disease in the right ovary or Fallopian tube is one of the most important clinical questions raised by the following records. I have given the histories with some fullness to emphasize this point, which is a frequent source of doubt in connexion with abnormal conditions in the right side of the lower abdomen in women.

CASE I.

History.—The first case was that of a lady, 25 years of age, married, and the mother of two children, the youngest 15 months old. She was of slight build and delicate appearance, but I was assured that she was very wiry. In May, 1900, she had an acute febrile attack with pain in the caecal region, being ill about a week. Recovery seemed complete, and her London physician considered that the symptoms were caused by appendicitis. After this the menstruation was irregular, the periods being frequently missed. Eight months later, the patient, who was then in the country, got very wet whilst riding, and on the evening of the next day she was seized with severe pelvic pain, followed two days later by a rise of temperature. The symptoms subsided after about ten days, and a good recovery followed. When convalescence had been apparently established between three and four weeks, a consultation was held by the practitioner in charge of the case with two gentlemen from a large neighbouring town, and after examining the patient under an anaesthetic a diagnosis of recurrent inflammation of the right Fallopian tube was made, for which operative treatment was recommended.

State on Examination.—I saw the patient in consultation, in London, a few weeks later. There was then some tenderness of the fundus uteri, which was displaced backwards, and a small painful substance which felt like an ovary was situated close to the right side of the uterus. There was no pain or swelling over the usual site of the vermiform appendix. The severity of the two illnesses recorded and the tenderness still existing indicated an urgent necessity for an exploratory operation, whether the diagnosis of appendicitis or that of salpingitis was correct.

Operation.—The abdomen was opened eight weeks after the temperature caused by the second attack subsided. The uterus was found retroflexed, it and the right ovary and tube being fixed by vascular, but recent easily-separated, adhesions. When the tube, ovary, and fundus uteri were released and brought into view there was no evidence of disease in them except the adhesions, the fimbriated extremity of the tube being unaffected. On examining the caecum the vermiform appendix was seen to be very adherent and unhealthy in appearance. These parts were deep down in Douglas's pouch, and had been attached to the back of the ovary and tube. At first the appendix seemed unusually short and dilated at its attachment to the bowel but on releasing

the latter and bringing it well into view, further examination showed that the proximal $\frac{1}{2}$ in. or rather more of the appendix was very firmly attached to and enclosed by a fold in the wall of the caecum. On separating the adhesions a small but distinct abscess cavity—hardly larger than a pin's head would fill—was opened. The pus in it was thick, as if it were undergoing caseation, and there was a communication between the minute abscess and the interior of the appendix. The whole of the latter was removed. Some slight adhesions of the left ovary and tube were separated, and the abdomen was closed.

Result.—The degree of shock consequent on the operation was severe, but a good recovery followed, with little inflammatory reaction. The appendix removed was slightly distended by muco-pus, but was not obliterated at its junction with the caecum. This distension without obliteration pointed to the possibility that the mischief had existed longer or more constantly than the history indicated. The Clinical Research Association examined the appendix, and reported that "a section showed much inflammation and ulceration of the mucous membrane. The lymphoid nodules in the submucosa were also swollen, but there was little inflammatory change in the muscular and cellular coats."

REMARKS.

The patient's health has been good since the operation, with the exception of a severe internal haemorrhage occurring off and on for some ten days in the autumn of 1904, unaccompanied by pain or any other symptom whatever. This was attributed by Dr. Goodhart to the presence of a duodenal ulcer. The fact that the blood was thoroughly mixed with the faeces showed that it must have been derived from some of the higher parts of the bowel. The patient recovered under treatment by rest in bed and care in regard to diet, and since then she has been very well, except that she has had three or four attacks of pain, continuing for a few days and then subsiding. I examined her in June of this year and the pain was clearly associated with a small but tender right ovary and with a somewhat enlarged uterus. The patient bore a child about eighteen months after the operation.

CASE II.

History.—In the second case the patient's age was 33. She had one child 10 years old, had been a widow for seven years, and was again recently married. Her menstrual history began before she was 13, and she stated that she had on six occasions been attacked by fainting, preceded by a sensation of twitching, beginning in the right thumb and passing up to the elbow. These six attacks were fairly evenly distributed between the ages of 13, shortly after the periods began, and 32. The patient on each occasion was feeling somewhat run down before the attack, and she never fainted at any other time. A period followed every attack, and when it came on the patient felt better. She said that she had been subject as long as she remembered to indigestion about the times of the periods. The monthly discharges had, however, been in abeyance for several years, and during their absence in 1899 the patient had an attack of peritonitis which kept her in bed a fortnight. She was not examined internally at that time, but the doctor then in charge mentioned the Fallopian tube as being the cause of mischief. She had attacks of abdominal pain in the right side for six months after that illness, and these were all treated with success by the administration of castor oil. The patient then underwent a "rest cure," and was very well after it until the autumn of 1904. Then in Paris she got her feet wet, and subsequently suffered from abdominal pain and felt very ill. The medical man whom she consulted treated her chiefly by rest. Other attacks followed in Rome and in Naples, and these were always attributed by the doctors who were consulted to salpingitis. The voyage home from Naples by sea proved beneficial, and the patient was fairly well until early in March,

1905, when she again got her feet wet, and subsequently had much pain in the lower abdomen, accompanied by a rise of temperature as high as 103° F. During this attack there was a considerable discharge of mucus when the bowels acted. An evacuation was easily induced either by enemata or by medicine.

State on Examination.—I saw this patient in consultation on March 14th, 1905. At that time the whole of the pelvic organs were hard, tender, and immovable on each other. The abdomen was quite soft anteriorly, but it was rather more flatulent than it should have been, and offered just sufficient resistance to make an examination of the pelvis from above very unsatisfactory. It was not possible to give a definite opinion as to the exact site of the primary mischief, but it seemed certain that there was an inflammatory condition affecting the pelvic peritoneum and causing some difficulty in the passage of flatus downwards, without any real obstruction of the bowel. The patient did not look nearly so ill as her history and the pelvic condition would have led one to expect, whilst she had a good and not rapid pulse. The temperature chart and the symptoms generally indicated clearly that the mischief was becoming less severe, and as the patient had been ill eight days it was decided that the treatment by careful nursing and attention to the intestinal functions should be continued. When I saw the patient a week later the improvement was still more pronounced in all respects. It was not anticipated that the condition would clear up completely, and the question of surgical interference was reserved

for rediscussion later on. Although this patient had a history of repeated ill health which she associated directly with the menstrual functions, and which had been attributed to salpingitis by many physicians, she so constantly referred to indigestion, and so many symptoms pointed to the blow as the seat of disease, that I formed and expressed the opinion that the vermiform appendix was quite as likely to be at fault as the right Fallopian tube. The history of the illness in 1899 especially seemed to point in this direction. After my second visit the improvement was so rapid that in a few weeks no abnormal condition was detected on examination. The patient went to the seaside, and except for an occasional "indigestion" pain she was quite well until she came to London again two weeks later. On the night of her return she had severe pain, was very sick, and complained of a shivering in the abdomen. The pain continued and the temperature on the following day rose to 102° F.; but it fell to normal three days later when a period began, and the patient, as usual, then felt better. After the period ceased there was a well-marked oval swelling the size of a turkey's egg in the region of the right

View of parts when first exposed by median incision. A. Root of appendix; B. swelling over appendix abscess; C, C, gauze pads. Practically all the intestine shown was removed.

broad ligament. The abdomen had the same general fullness as before, but the mass in the pelvis could easily be defined bimanually. No other physical abnormality was detected, and again the patient did not appear seriously ill. Although I still had a feeling that the history pointed to the vermiform appendix as the source of trouble, the physical condition was exactly that of ovarian or tubal mischief, and the view that the patient had appendicitis seemed probable only if the appendix was so displaced that it exactly simulated in position and connexions a broad ligament swelling. The apparently complete disappearance of all evidence of mischief and the rapid reappearance of a definite swelling, did not, however, seem to me to indicate that a pyosalpinx had given rise to the acute symptoms of the illness in which I first saw the patient. I thought that a pyosalpinx causing so much mischief should not be expected to subside so quickly or so completely. Operative treatment was recommended, but before carrying it out, Dr. Dakin was asked to see the patient in consultation and ovarian or tubal mischief was diagnosed. The view that the condition might be due to appendicitis was considered improbable and with this I felt constrained to agree.

Operation.—Assisted by Mr. W. S. Handley, whilst Mr. Henry Davis gave the anaesthetic, I opened the abdomen a fortnight after the patient came back to London and eight

weeks after the attack beginning in March. The first abnormality noted was a swelling exactly in the middle line at the back of the abdominal cavity, under a tightly bound down coil of small intestine which lay transversely at and rather overhanging the brim of the pelvis. The anatomical right side of the mesentery of this coil was above and anterior and free from adhesions, but the left, posterior, side was fixed. The appearances have been very well, but of course somewhat diagrammatically, reproduced by Mr. M. H. Lapidge in the accompanying drawing. The condition at first suggested to me the existence of a mass of caseating glands causing adhesions of only one side of the mesentery. It was at once clear that the flatulent condition of the intestines had prevented the examining hands from palpating the abnormal condition now discovered, and that neither I nor any of the medical men who examined the patient with me had detected evidence of mischief in this situation. On passing my finger into the pelvis I found the oval swelling which had been defined and which proved to be a cystic mass. On separating it, several cavities containing clear fluid were opened, but it was not certain whether the abnormal part was a collection of thin-walled ovarian cysts or of serous fluid in connective adhesive tissues. When separated little was left except shreddy material, which, together with a ragged but otherwise healthy Fallopian tube, was hastily removed at the end of the operation. Some adhesions of the left ovary and Fallopian tube were not disturbed. I again examined the centre of the abdomen, and was able to trace the displaced vermiform appendix under the bound-down coil of intestines, where it was firmly fixed by adhesions, except about $\frac{1}{2}$ in. or rather more of its base which appeared fairly healthy externally. The mass, which at first I supposed to consist of caseating glands in the mesentery, was obviously the appendix inflamed and adherent behind it. On separating the attachments I suddenly opened an abscess cavity about the size of a pigeon's egg containing thick pus. The walls of the abscess were formed by mesentery and small intestine, the peritoneum of the posterior wall of the abdomen being only slightly involved. When separated and spread out the suppurating surface was so extensive, and the bowel wall in places seemed so deeply ulcerated, that I thought it safer to perform a resection of intestine than to attempt to clean and drain the foul surfaces. It seemed easier to remove also the part between the abscess and the caecum, and accordingly about 12 in. of the lower part of the ileum ($9\frac{1}{2}$ in. when shrunk by spirit) and the vermiform appendix were removed, a considerable opening being made in the wall of the caecum into which the remaining lower end of the small intestine was inserted and fixed by catgut sutures supported by one or two of fine silk. With the bowel the whole of its mesentery and some adjacent suppurating peritoneum were taken away, and the abdomen was closed without drainage. The proximal portion of the appendix was patent in this case also, so that the abscess cavity would appear to have been draining through it at the time of the operation. The patient suffered severely from shock, causing Mr. Davis much anxiety towards the end of the operation, and I felt greatly indebted to him for the perfect way in which he managed the anaesthesia.

Result.—The patient complained of great pain for several days, but apart from this and the shock her recovery was uneventful and complete. For some weeks she seemed to be conscious of the passage of flatus or faeces from the small to the large intestine. I saw this patient in February. The abdomen was then soft and free from any tenderness, and the general condition was in every way satisfactory. The latest account is also good.

REMARKS.

It seems fairly certain that in the first of these cases a sufficiently prolonged care of the health would have led to a practical, if temporary, cure by a process of granulation with discharge of pus into the appendix, the small abscess cavity being gradually replaced by cicatricial tissue.

In the second case, also, there appeared to be a discharge of the contents of an abscess through the remaining portion of the appendix, for there can be no doubt that the abscess formed during the illness in which I first saw the patient. In both cases the escape was so free that symptoms of confined pus ceased to be obvious, and the patients were able to get about for a time apparently quite convalescent, each, nevertheless, having a distinct though small abscess within the peritoneal sac. How completely either case could have been cured without operation is an interesting speculation. In the first case an absolute closure of the minute abscess cavity would not directly have given rise to further trouble, but in the second the abscess could only have been closed by binding together the surfaces of the coil of intestine around it. Such a result would have been very likely to induce chronic attacks of colic, with the possibility of acute intestinal obstruction supervening. In fact, it is probable that as much discomfort and danger would have arisen from this as from the liability to further attacks in the remaining part of the appendix. Moreover, a recurrence and possibly a much more serious illness would have been practically

certain to follow sooner or later in both cases even if obliteration of the abscesses had occurred.

The fact that patients may apparently become completely convalescent when an intraperitoneal abscess is still unhealed, is especially interesting and important in connexion with the question of diagnosis. When an abscess penetrates the wall of the vermiform appendix it may be considered certain that the natural passage of its secretions into the caecum is closed for the time. The relief of tension brought about when the ulcerative process passes beyond the walls of the appendix into looser tissue is one of the causes of the abatement of symptoms—the period of repose—which is often so deceptive in these cases.

But a relief of tension is beneficial in all forms of inflammation, and in the cases under consideration it may be fairly concluded that, either by altering the direction of the lumen of the appendix or by causing the inflammatory thickening of its mucous membrane to subside, the relief of tension led to, or at least was accompanied by, a reopening of the passage of communication between the appendix and the caecum in each case. If this had not happened the abscesses, although released from the strong bounding walls of the appendices, would have again tended to become tense after a very few hours, and would then have caused a recrudescence of the symptoms, a rise of temperature and pulse, and an increase of the size of the pus cavities. As it turned out in these two cases, the period of repose became a period in which a cure was possible, at least temporarily, by healing of the abscess cavities from the bottom, but in which extreme danger would have arisen immediately if the communication between the appendix and the caecum had again become occluded. There was, in fact, an indefinitely prolonged "period of repose." The danger showed itself, though in a mild form, in the last attack in the second case. As I interpret the symptoms there can be no doubt now that this patient suffered from appendicitis for at least six years, possibly from childhood, and that her Fallopian tubes were never at fault.

When the ovary and appendix are in contact, as in the first case above recorded, a definite diagnosis is obviously very difficult, and may even be impossible. In the second case, although my inclination to diagnose appendicitis was founded on a correct interpretation of the symptoms, the physical signs, so far as they were discovered, were decidedly against this view.

THREE CASES OF GASTRO-JEJUNOSTOMY.

By FREDERICK C. WALLIS, M.B.CAMB., F.R.C.S.,
SURGEON, CHARING CROSS HOSPITAL.

THE operation of gastro-jejunostomy is nowadays such an everyday occurrence that, unless it were thought that some special point was being brought out, one would scarcely be justified in bringing forward the following three cases.

The first is of sentimental interest in that the patient was a lady aged 91, who had lived in five reigns, and remembered being carried in a sedan chair in the Strand.

The other two cases are, I venture to think, of extreme practical interest, in that in both cases chronic inflammatory growth around an ulcer simulated carcinoma so closely that the latter diagnosis was made in each instance.

CASE I.

A female patient, aged 91, whose life-history was excellent except for an attack of general eczema twelve years previously. Beyond this and occasional bilious attacks, she had never had any illness.

Previous History.—At the commencement of 1905, the patient had all the signs of a dilated stomach—vomiting large quantities of fluid which was on various occasions of coffee-grounds character, tenderness over the pylorus, no cachexia, no great loss of flesh.

Progress and Diagnosis.—In March, 1905, Dr. Hale White saw the patient in consultation with Dr. Grigg, and it was agreed that there was evidently pyloric obstruction, and as the patient was suffering, and going downhill, it was decided that in spite of the great age of the patient, an operation was urgently needed for her relief.

Operation.—A posterior gastro-jejunostomy was carried out on March 31st. Extensive thickening and ulceration of the