loins. He had no difficulty on micturition nor did his urine seem to him to be abnormal in quality or quantity. He was dally at his business and felt well excepting this aching over the region described and which did not at this time amount to an actual pain. On examination I found his temperature and pulse normal. The urine to the naked eye did not suggest hæmaturia or pyuria but on testing it was found to contain a small quantity of albumin. My diagnosis was sub-acute nephritis and I prescribed rest and the usual routine treatment for that complaint. He made a good recovery although a trace of albumin was present in his urine when he returned to business again. A year later, in April, 1903, he again consulted me and this time he complained of pain across the lumbar region and especially in the right loin. There was not the shadow of a doubt of the pain at this time being on the right side and not on the left side, for the patient, who was a shrewd business man and a most trustworthy observer, afterwards reminded me that among other local applications I prescribed to relieve the dull pain on the right side was a fly blister about three inches square. The pain at this time had not the character or the direction of that in renal colic. Whilst he had no difficulty on micturition his urine was of a smoky tint and on testing it not only albumin but blood also was present. No microscopical examination was made. The question was now raised of a renal calculus on the right side, and an operation was even hinted at, but as the patient seemed to improve rapidly with absolute rest in bed, a milk dietary, and diuretics and was most anxious to return to business nothing further was done. Two months later, on June 2nd, he sent for me hurriedly one morning and said that several times during the previous night he had had acute attacks of pain on the right side over his right kidney and shooting down towards his right testicle. According to his description of these attacks they suggested to my mind renal colic, although not of such an agonising character as is often seen. His urine again contained blood. I then told him that there was no doubt that he had a calculus or calculi in the right kidney and insisted on his seeing Dr. Newman in regard to an operation. He consulted him a few days later and an operation on the right side was recommended. The patient had fortunately for himself as the sequel showed, a strong objection to operative interference, so he sought the waters of Harrogate in the hope of a cure. Whilst there he consulted a physician in Harrogate who also recommended an operation on the right side. On the advice of a friend he went to London and consulted a surgeon who wrote to me that my patient had most probably right pyelitis due to calculi and he recommended operation on the right side. It is only fair to say here that the patient told the consultant that he had been cystoscopically examined and skia-graphed with no definite result. The remaining history of the case will be related by Dr. Newman. I have only to add that the case was a most instructive one to me in many ways and among other facts deeply impressed on my mind the extreme value of the x rays in renal diagnosis. I am firmly convinced that if my patient had gone to any medical man with the symptoms I have mentioned his advice would have been to operate on the right side. There was only one other point. Was the right kidney normal? To that question my reply would be that the x rays were faithful in bringing out calculi on the left side and none on the right side. Moreover, the operation was eminently successful and the patient is now free from all pain or discomfort and to be absolutely certain that he will remain so I shall report the case later to Dr. Newman.

When I was asked to see the patient on May 4th, 1903, I came to the conclusion that he was suffering from a calculus in the right kidney but to confirm the diagnosis I had an x-ray photograph taken and on the 11th I examined the bladder with the cystoscope. From neither of those observations was any benefit derived. The bladder was strictly healthy and there was nothing remarkable about the appearance of the orifice of either ureter and the photograph failed to show any distinct shadow of a calculus. On August 7th three photographs were taken and in one of them there was a faint indication of a shadow corresponding to the position of the pelvis of the left kidney, but as this was indistinct no reliance was placed upon it. Again on Oct. 12th other three photographs were taken and in two of them the same shadow was found (Fig. 2). This pointed clearly to the presence of a calculus and notwithstanding the predominance of pain upon the right side I concluded that the stone was in the left kidney. At this time there was some pus in the urine and on making a cystoscopic examination I found that it proceeded from the left kidney. This corroborated the view of the position of the calculus. On Oct. 17th I explored the left kidney and found two stones, each weighing about two drachms. The patient made a good recovery, as indicated in Dr. Colvin's report.

CASE 3. *Pyonephrosis limited to the right kidney; pus and albumin in the urine; pain most marked in left lumbar region; nephrotomy; cure.*—A man, aged 26 years, consulted me first in July, 1898. He then complained of pain across the back and extending downwards to the crest of the ilium. The history of the case showed that the first departure from health was noticed two and a half years previously. At first the pain was generally distributed over the lumbar regions on both sides. As the disease advanced the pain was most marked in the region of the left kidney and frequently limited to that part. The patient was admitted to the Central Home where on examination I found that on palpation there was a distinct enlargement of the right kidney while the left kidney could hardly be felt. On admission the patient complained of frequent micturition;

the urine was copious, pale in colour, contained a considerable deposit of pus, the reaction was acid, and the specific gravity was 1010, but no blood had ever been observed nor had he passed gravel or stones. A cystoscopic examination showed the pus to be escaping from the right ureter only and this was confirmed by two subsequent

FIG. 2.

Reduced x-ray photograph from Case 2. The arrow points to the shadow of the calculi.

examinations. The patient was advised to have an operation performed but he preferred to wait and to test the effect of complete rest and medicinal treatment for three months. In November I saw the patient again and he then told me that little benefit had been derived from the treatment prescribed and he was now anxious to have an operation performed. During the last three months the pain was almost always referred to the left renal region but as the patient was convinced by the swelling on the right side that it was the right kidney that was diseased he consented to have an exploratory incision made. On Nov. 15th I incised the kidney and evacuated ten ounces of pus but no stone was found. The patient made a good recovery and when I heard from him last from Cape Town, South Africa, he reported that there was no recurrence of the pain and that the pus had disappeared from the urine entirely (October, 1902).

Glasgow.

ON SOME FORMS OF PSEUDO-APPENDICITIS (ENTERO-TYPHLO-COLITIS.—INTESTINAL LITHIASIS).

By DR. BOTTENTUIT,

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THE frequent occurrence of appendicitis and the consternation it causes both to physician and patient has led Mr. A. H. Tubby to remark that as soon as a subject is seized with pain in the right abdominal region "it might be safely said that their brain is no longer in their cranial cavity but in the right iliac fossa, for so fixed is their attention on that region that every ache and pain there, any delayed action of the bowels, prompts them to expect an attack of appendicitis and to make their lives a burden to themselves and others." This prejudice has seized upon the medical faculty. For a long time appendicitis has been overlooked. How often has it been mistaken for hepatic or nephritic colic, salpingitis, &c.? It is necessary to dispel this fascination for McBurney's spot. To me it appears of interest to direct my readers'

attention to certain cases in which pain in the right iliac fossa, even increased at McBurney's spot, or intestinal crises, or abdominal symptoms, can deceive us or lead us to expect an appendicitis without a real appendicitis existing in the true sense of the word. If it has sometimes happened that appendicitis has been overlooked and surgical intervention rejected at a time when it was necessary, on the other hand operations have been undertaken for appendicitis which never existed. Works on appendicitis have multiplied, the importance of lesions of the appendix has been demonstrated, and nearly all symptoms heretofore attributed to typhlitis have been recognised to have their seat or local origin in the vermiform appendix and not in the cæcum. Treves (1885) showed that the cæcum is always covered by peritoneum but is not attached by areolar tissue to the iliac fascia. According to Treves the mesocæcum formerly described has no existence at all. All surgeons who have performed the operation for appendicitis for urgent symptoms formerly attributed to typhlitis maintained that these had their origin not in the cæcum but in the appendix.

Typhlitis was accordingly denied; this word was even proscribed by certain writers who devoted no space to it in their works on intestinal maladies. It is evidently an exaggeration to deny the existence of typhlitis. The cæcum may be the seat of the same inflammatory processes as the colon and the small intestine. Intestinal affections known under the name of follicular, membranous, or calculous enterocolitis are plentiful; the mucous membrane of the cæcum is injured but these lesions do not induce gangrene, perforation of the cæcum, or peritonitis. In this way they are differentiated from appendicular lesions or the sequelæ of appendicitis (Dieulafoy). This author, also, while attributing to the cæcum its due importance, formerly exaggerated and to-day underrated by certain writers, proposes to call inflammation of the intestine entero-typhlo-colitis. The term "entero-colitis" had the disadvantage of ignoring the cæcum which, however, has a share with the small intestine and colon in the intestinal lesions. I adopt, therefore, the term "entero-typhlo-colitis" in place of the terms "entero-colitis" or "catarrhal enteritis."

The study of muco-membranous entero-typhlo-colitis presents the greatest interest in regard to its relations with appendicitis and from the point of view of differential diagnosis. It is about 12 years since the first publications on this malady appeared. In 1892 I published an article entitled "Catarrhal Enteritis,"¹ describing the symptoms and pathogeny of this affection. Since that time numerous essays on this subject have been published. The relation of entero-typhlo-colitis to appendicitis has given rise to numerous discussions. The authors who first described muco-membranous colitis failed to note its coincidence with appendicitis. In 1892, out of 460 of my patients suffering from muco-membranous colitis not one to my knowledge had an attack of true appendicitis (infectious), though I was able to follow up these cases for several years in succession. Since that time I have observed more than 2000 similar cases and my statistics show an almost similar result. A small number of patients have had, after suffering from muco-membranous colitis, attacks of appendicitis, but the average is so small that these cases must be considered exceptional.

As Dieulafoy has remarked, we have here to deal for the most part with crises which simulate appendicitis, crises which he proposes calling pseudo-appendicitis in distinction to infectious appendicitis. Some writers, however, have affirmed that muco-membranous entero-typhlo-colitis led to appendicitis. This position might be maintained if we followed them up in six or seven cases per cent., but it is only right to add that these writers acknowledge that their patients did not show the symptoms of classic appendicitis, with its dramatic train of maladies and its terrible consequences, but only very light and trivial forms signalled by some fleeting symptoms which were cured concomitantly with the colitis which caused them. This might be called, perhaps, appendiciform and I am of opinion that such cases might be called pseudo-appendicitis. I have frequently observed similar cases at Plombières but have had no fatal ones to deplore, but these were not cases of infectious appendicitis. I do not mean to say that gastro-intestinal troubles have no predisposing influence towards appendicitis but we must not exaggerate their importance. If we compare the number of cases of true appendicitis with the number of people who diet themselves

improperly and have gastro-intestinal troubles it will be seen that the figures are reassuring to dyspeptics. It is the same with subjects who have muco-membranous entero-typhlo-colitis. Appendicitis only supervenes in quite an exceptional way in the course of entero-colitis.

Intestinal lithiasis has been specially studied since 1896. E. C. Jones, Edward Shattock, R. S. Thompson, Delépine, and Dieulafoy called attention to this condition. Sir Dyce Duckworth and Dr. A. E. Garrod have written interesting papers on this subject.² Intestinal lithiasis may be latent for many years. Patients are sometimes made aware of it by the special sensation arising from the evacuation of earthy substances. The presence of the sand in the stools, a more frequent symptom than is generally realised, arouses the patient's attention, but in most cases it is attributed in default of chemical analysis to the existence of biliary calculi. Patients who are observant maintain that they have painful attacks periodically recurring which after lasting several days finish in collapse. We almost always find in the vessel, along with sand, slimy and mucous substances and false membrane. Intestinal lithiasis nearly always coincides with entero-typhlo-colitis, although some cases have been noted in which lithiasis existed alone. These facts have been mentioned by Hayem and A. Robin. I have observed a great many cases and they coincided with muco-membranous colitis. Intestinal lithiasis exists much more frequently than is supposed in enteritis and if it were not so difficult to get patients to keep a look-out for it—a task which is more than disagreeable, repugnant in fact—I am sure we should find it in many subjects. To find the sand with certainty the fæces must be placed on a fine sieve and water must be poured on them, sufficient in quantity to break them up. The stream of water must be continued till the water, received in a basin, has ceased to be coloured. The water must be decanted and the sand is then found, after the water has stood for a little, in the bottom of the basin. These salts are composed of phosphates and carbonate of lime and also of ammonio-magnesian phosphates. They also contain some organic matter. I have said that the presence of sand often sets up painful attacks which might lead to the suspicion of, or be taken for, attacks of appendicitis. Yet I have seen patients who had intestinal lithiasis and did not experience any attacks of pain. Dieulafoy considers that this intestinal lithiasis is of the same kind as the others and is dependent on a gouty or arthritic diathesis. All the patients I have seen afflicted with muco-membranous entero-typhlo-colitis (several thousands) showed characteristics of the gouty or arthritic diathesis.

Diagnosis.—The two most frequent forms of enteritis which may be confounded with appendicitis are muco-membranous entero-typhlo-colitis and intestinal lithiasis. Diagnosis is not always easy and its possible confusion with inflammation of the vermiform appendix explains my usage of the term "pseudo-appendicitis." Let me recall in a few words what are the principal symptoms of appendicitis in its most frequent form. Most often the attack of appendicitis comes on suddenly; sometimes, however, it is preceded by intestinal troubles, alternation of diarrhoea and constipation, flatulence, expulsion of gas or extremely fætid matter. Sometimes there are nausea and vomiting. The fever is generally insignificant; abdominal pains are quickly localised in the right abdominal fossa. These intestinal troubles may even at this stage be caused by the absorption of toxins secreted by the bacillus coli whose virulence begins to increase. At the end of some days, or even hours, the crisis breaks out and it is usually not till this moment that the medical man is called in.

I need not here describe the symptoms of an attack of appendicitis; I need only recall the three principal signs: 1. The pain, either spontaneous or provoked by pressure at McBurney's spot, more or less acute, which spreads sometimes to the epigastric region or other parts of the abdomen, but which can always be easily localised by a careful examination. 2. The defensive state of the abdominal muscles. At first there is a general rigidity of all the abdominal muscles but later the rigidity becomes localised in the right iliac fossa. 3. The hyperæsthesia of the skin corresponding to the appendicular zone. If the skin be lightly rubbed in this region either with a pencil or with the end of a glove a hyperæsthesia is revealed which does not exist elsewhere. Sometimes, indeed, by exciting this hyperæsthesia we give

¹ Brit. Med. Jour., April, 1892.

² Transactions of the Royal Medical and Chirurgical Society, 1902.

rise to painful reflex cramps in the underlying muscle. 4. Nausea and vomiting set in sometimes with the premonitory period. These are generally bilious.

Stercoral typhlitis is met with fairly often but is frequently passed over because the physician's attention is absorbed with the idea of appendicitis. Renvers cites the statistics of the German army to show the frequency and also the benignity of this malady. Stercoral typhlitis is cured by medical treatment. In certain cases the necropsy reveals tumefaction in the walls of the cæcum, following on prolonged constipation, and accumulation of fæces in the cæcum, but the appendix is healthy. To sum up, stercoral typhlitis is nearly always a benignant affection. Hence we can understand that Sir Dyce Duckworth has not found mention of a single case of typhlitis in the post-mortem registers of St. Bartholomew's Hospital during a period of eight years. I have seen several cases diagnosed as appendicitis. There were puffiness in the right iliac fossa and pain at McBurney's spot, but the sensation given by palpation of the tumour, its clammy consistence, its sausage-shape, and the more or less habitual constipation, accentuated during the last few days, caused me to reserve my diagnosis. The use of an enema was followed by expulsion of fæces. Then it was seen to be a case of stercoral typhlitis, not appendicitis. As soon as the intestine was freed the symptoms improved and tumefaction ceased. Mr. Tubby cites an analogous case seen with Dr. W. H. Allchin. I have seen habitually constipated patients who have often experienced the same trouble. Broca mentions the following case. He was urgently summoned to the Trousseau Hospital to a little girl who was convalescent from scarlet fever and seemed to be entering on an attack of appendicitis with fever. There were, in fact, pain on pressure at McBurney's spot, vomiting, and constipation, but the evenness of the pulse caused him to delay measures. The next day all the symptoms passed away after the expulsion of a thread-worm.

I have already described the premonitory period which may last a long time, years even (Albérts de Bonn). It is characterised by troubles which establish themselves slowly and in so imperceptible a manner that the patient scarcely perceives it. Digestive troubles are especially noticeable owing to paucity of stools which are passed every three or four days. They are very scanty. The amount of defecation is not proportionate to the amount of food taken. The fæces are viscous and brownish, sometimes hard and as if moulded. The appetite is preserved but disturbed from time to time. The abdomen is often inflated, especially in the right iliac fossa. Work becomes difficult and sleep irregular. Gradually stercoral dilatation of the cæcum will be set up, the most rapid and natural consequence of prolonged retention of matter in the intestine. In certain cases typhlitis may set in suddenly and assume an active form. Following on slight symptoms of gastric disturbance the medical man administers a purgative and is surprised at the extraordinary quantity of matter, often with a foetid odour, which is expelled. By questioning the patient he will get at the history and find out if he was generally constipated, or if he had alternations of constipation and diarrhoea, or, lastly, if he had already had similar attacks. The puffiness of the iliac fossa, the shape of the stercoral tumour, the localisation of the pain, and the absence of cutaneous hyperæsthesia, and generally of fever, will cause us to delay diagnosis and to temporise. The patient should be closely watched. The employment of injections and purgatives will suffice to bring on abundant stools and to clear up the diagnosis. In this case the symptoms mend rapidly and the attack ceases until it appears later, for this disease is subject to reappearance.

Cases of entero-typhlo-colitis are usually easy to diagnose; the expulsion of slimy or mucous matter or false membrane, constipation or alternating constipation and diarrhoea, or diarrhoea alone, or pains in the abdomen, enable us to recognise the disease. Diagnosis is difficult only when there are paroxysmal crises. In such cases the intensity of the pain, the feverish condition, and the vomiting may make the medical man mistake them for appendicitis. These enteralgic or paroxysmal crises are frequent in mucomembranous entero-typhlo-colitis.

I have said that entero-typhlo-colitis in its benignant form sometimes escapes detection. Patients attach little importance to it and if an attack of paroxysms comes on and the medical man is not informed of it confusion will be possible if he be unacquainted with the habitual condition of

the patient. These crises may arise suddenly: errors of diet or a strong purgative, or fatigue, or any kind of excess, or even psychical causes may produce them. The pains when very sharp are generally localised along the course of the transverse colon. This pain is usually more severe on the right side over the hepatic flexure and on the left side over the splenic flexure. Next in frequency to these are painful points in the iliac fossa on the right or left side, near the cæcum or the sigmoid flexure. According to its position the pain may simulate the painful paroxysms of hepatic or nephritic colic, or yet again those of appendicitis. It is accompanied by reactional phenomena, such as feebleness of pulse, cold sweats, contracted facies, and the like. In many cases there is cutaneous hyperæsthesia at the level of the sigmoid flexure, sometimes on the left and sometimes on the right side. We can understand that when the maximum of pain is seated on the right iliac fossa on a level with McBurney's spot a mistake may be easily made. I have remarked that in entero-typhlo-colitis cutaneous hyperæsthesia is observed, now on the right side, now on the left. If this hyperæsthesia is specially marked in the cæcal region, with muscular resistance, we are very much tempted at the outset to diagnose appendicitis. The physician will have to make a careful study of symptoms and antecedents.

The subject who is attacked by appendicitis is nearly always seized unawares in the midst of robust health. In attacks of entero-typhlo-colitis there has nearly always been a period of digestive troubles which the patient will remember even if he has never examined his stools and if he is unaware that he is suffering from entero-typhlo-colitis. He will recollect, when interrogated, that he has already had attacks of pain in the left side or in the transverse region of the abdomen. He will tell you that he is subject to intestinal troubles, constipation, diarrhoea, especially under the influence of cold or departure from regular diet. In appendicitis the maximum of pain is in the cæcum, very near the appendix, but in entero-typhlo-colitis the pain is not definitely localised; it radiates over the path of the colon, principally on a level with the hepatic flexure and splenic flexure. There is another point often very painful between the umbilicus and the ensiform appendix. In this case it is the transverse colon which is the seat of the pain.

Diagnosis, then, will embrace examination of the stools to see if they contain slimy substance or even false membrane or sand. When the diagnosis is once determined and all idea of appendicitis is rejected, treatment will be given for a paroxysmal attack of entero-typhlo-colitis. But it will be well to watch carefully McBurney's region and always to bear in mind the possible inflammation of the vermiform appendix with its protean forms which are so deceitful and its progress, often irregular, which will induce fatal consequences from an error of diagnosis.

Paris.

A NEW FORM OF REMOVEABLE DEEP SUTURE FOR THE PREVENTION OF STITCH SINUSES.

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THAT sutures which were at the time of their introduction into the tissues perfectly aseptic will from time to time reappear with the formation of a sinus in the cicatrix of a wound healed by perfect primary union is an undoubted fact, and the period which may elapse between the operation and their appearance varies from a matter of a few weeks to several years. It is difficult to say up to what time from the date of operation the blame for such an occurrence should be attributed to primary infection of the sutures, but probably from six weeks to two months is a fairly accurate estimate, for although the process is necessarily an extremely slow one, the organisms concerned being of very low vitality in most cases, few wounds are of sufficient depth to prevent the pus resulting from the circumscribed area of necrosis from reaching the surface of the body well within those limits. There is little doubt that the occurrence of stitch sinuses following the use of perfectly aseptic sutures may be favoured, first, by the tension of the suture; secondly, by the method of its application; and thirdly, by the varying condition of the