ON PREVESICAL ABSCESS.

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SUPPURATION in the prevesical space is of rare occurrence. French surgeons have given a good deal of attention to it, especially in former times, and a few papers on the subject have been published in Germany; in this country, although the anatomical relations of the prevesical space have been admirably described, and the possibility of phlegmonous suppuration within the space frequently discussed, the clinical aspect of this condition does not seem to have attracted much attention. In the course of my surgical work I have hitherto met with four cases of this kind, and as all these cases have presented great difficulties, especially from a diagnostic point of view, not only to me, but also to the colleagues who were associated with me in the observation of the patients, I think a short account of the disease and the diagnostic and therapeutic difficulties it offers may not be uninteresting.

The prevesical space (*cavum Retzii*) is an accumulation of loose areolar and fatty tissue of a very elastic and yielding character, freely allowing the bladder to distend and to contract. The space is well described in ana-

tomical text-books. It is bounded (taken in the upright position of the body) above and in front by the reflection of the peritoneum, above and behind by the bladder, below and behind by the pelvic fascia, and below and in front by the symphysis pubis and the transverse fascia. To this latter point I attach some importance. French surgeons describe the space in front of the transverse fascia between this and the rectus muscle as part of the prevesical space, but anatomically and clinically this "submuscular space" is quite different from the "cavum Retzii" proper.

Abscesses occur in the "submuscular" space too, but as a rule they have nothing to do with pelvic disease; they are mostly due to traumatic rupture of the fibres of the rectus muscle, or to suppurating hæmatoma, such as occurs occasionally in the course of some infectious diseases (typhoid fever).

Many cases of prevesical abscess are described as primary, and are thought to be due to traumatic causes; but with our modern ideas on the pathology of suppuration this seems hardly compatible. There is occasionally great difficulty in tracing the origin of the suppuration, and this may have caused the authors to consider their cases primary ones. In any case the great majority of cases of prevesical suppuration are due to some pelvic or abdominal disease. Formerly diseases of the bladder and prostate gland were not an infrequent cause for the formation of prevesical abscess, but owing to the more successful treatment of those affections these cases have disappeared from the recent literature on the subject. Some years ago, at the revival of supra-pubic lithotomy, fears were expressed that the operation might be followed by suppuration in the prevesical space; but, to judge from recorded cases, this apprehension fortunately has not been realised.

Probably the most frequent cause of prevesical abscess is tubercular disease of the pelvic bones, and I have no doubt that many cases which have been recorded as

primary in reality belong to this class. In a lesser degree diseases of other pelvic structures contribute to the formation of prevesical abscess, such as parametritis, rupture of ectopic pregnancy, &c. ; and two cases have been observed, one by Guyon and one by myself, in which disease of the small intestines was the primary cause.

Whatever the origin of the disease may be, its onset is a very slow and insidious one. The patient complains of a dull pain deep down in the pelvis, and suffers from great frequency of micturition, while the urine remains quite normal : there may be some rise of temperature, but this is by no means invariably the case. Pain, and the symptoms of the part of the bladder may become more and more prominent ; the general health of the patient begins to suffer, and a deep-seated tumour seems to rise from behind the symphysis : if of any considerable size it resembles in its outline a distended bladder. Rectal examination will show now that the pelvis is blocked up by a hard mass closely adherent to all the bones, and the case may resemble very much one of malignant tumour of the pelvis. After a time the abscess will break through the boundaries of the somewhat narrow prevesical space, and infiltrate the whole cellular tissue of the pelvis, and subsequently may break into the neighbouring structures. Rupture into the peritoneal cavity has been recorded, but this is rare, owing undoubtedly to the inflammatory thickening of the peritoneum. More frequent is rupture into the bladder, vagina, or rectum, or the abscess may break through the pelvic floor close to the rectum, and point in the perinæum ; but in most cases the abscess breaks through the fascia transversa and the linea alba, and points in the anterior abdominal wall. Cases have also been recorded and observed by myself in which the abscess broke into several of the neighbouring spaces and cavities simultaneously or successively. Some cases have been recorded in French literature of spontaneous absorption of the abscess. It must remain doubtful whether an abscess was really present in these cases, especially since

Guyon has called attention to the fact that non-purulent exudations occur in the prevesical space; he looks upon the *cavum Retzii* as a kind of bursa in which a hydrops is occasionally found. After some time the long-continued suppuration affects the general health of the patient, and he presents the sallow, exhausted aspect which is so regularly associated with long-standing suppuration. The final termination depends to a great extent on the primary cause of the suppuration.

While the pathology of these cases is a comparatively simple one, and while their clinical course does not differ very much from other forms of pelvic suppuration, they claim our interest on account of the great difficulties which they offer to diagnosis, and it is this difficulty, experienced in all my cases, which is my excuse in bringing them forward. At the onset diagnosis is quite impossible; the deep-seated pain, frequency of micturition, and perhaps on rectal or vaginal examination some diffuse thickening of the pelvic structures are the only symptoms, and they will hardly allow us to form an opinion with regard to the character of the disease.

Matters are still more complicated during the second stage, when a tumour has formed in the anterior part of the pelvis; then the case is in its whole aspect so much like one of a new growth of one of the pelvic structures that a diagnostic error can hardly be avoided, especially if no fluctuation can be detected and if the temperature remain normal. In two of my cases we were doubtful for a long time whether the case was not one of sarcoma of the pubic bone; prolonged observation and the use of the aspiration needle eventually led to the right diagnosis. In a third case a surgeon of the greatest eminence had diagnosed sarcoma, and had given a fatal prognosis, and from what I have seen in similar cases I am convinced that no other diagnosis could have been made. When I saw the patient a few days later, rupture through the fascia transversa had taken place; the tumour pointed in the anterior abdominal wall, showed—not very dis-

tinctly—fluctuation, and the aspirator needle withdrew pus. In my second case a correct diagnosis was not made during the patient's lifetime ; the post-mortem examination revealed the true state of things. In that case which is recorded below even the aspirator needle, which otherwise is of the greatest advantage, failed to help us.

The treatment of these cases is not a very easy one, and, on the whole, not very satisfactory. During the first stage the uncertainty and difficulty of diagnosis are in the way of any efficient surgical treatment. Of course as soon as the presence of pus is diagnosed it is imperative to dissect down to the abscess, to open it freely, and to provide sufficient drainage, making perhaps, as suggested by Tillaux, a counter-opening into the vagina. If the abscess points in the anterior abdominal wall after having broken through the transverse fascia, it assumes the form of an abscess "*en bissac*," part of it being situated in front of the recti muscles underneath the superficial fascia, another part lying deep down in the pelvis. The communication between the two portions may be an exceedingly small and narrow one, and may be overlooked. This happened to me in one of my cases ; the patient was much relieved by the first operation, but a week later all his symptoms returned. The communication between the two portions of the abscess was nearly closed, but I succeeded in finding it and enlarging it sufficiently. In one of my other cases I had to search for a long time until I found the very small communication.

In those few cases where the disease is a primary one, evacuation of the abscess and free drainage are all that is required, but in all other cases we have to look for the primary disease, and great difficulty may be experienced in tracing it, still more in dealing with it efficiently ; extensive disease of the pelvic bones may be discovered, quite unamenable to any radical treatment. We may be unable to remove the source of the suppuratation, and in

such cases it may spread through the pelvis even after very free opening and complete evacuation of the abscess ; meanwhile the patient remains exposed to all the consequences of prolonged deep-seated suppuration. In those cases where the source of the suppuration can be attacked successfully very slow recovery must be expected ; for the filling up of this large cavity by granulation tissue is a long and tedious process. This may probably be explained by the intermittent distension and collapse of the bladder interfering with the surgical rest of the parts.

I now give a short account of the four cases which I have had under my observation.

CASE 1.—A. B—, admitted into the German Hospital February, 1888, a Polish Jew, whose previous history was somewhat difficult to elicit. He tells us that for some time he has been suffering from a dull pain in the pelvis, and from frequency of micturition. On admission he is found to be very much emaciated and feverish ; the urine is normal. In the pubic region a somewhat indefinite swelling is found, which seems to rise from the pelvis to about two fingers' breadth above the symphysis. The tumour is very hard, its surface smooth ; it resembles a distended bladder, but remains of the same size and form when the bladder is emptied. The diagnosis of a malignant tumour of the pubic bone is discussed, but under further observation the swelling enlarges more rapidly than quite consistent with a new growth, and after a little time fluctuation is discovered. Free incision and evacuation of a large quantity of pus of a very foetid character ; the exploring finger finds the bone on the posterior aspect of the os pubis roughened ; repeated operations are done to remove the diseased bone. A few small sequestra are removed, and the diseased bone is thoroughly scraped ; but a more extensive operation does not seem advisable. The abscess cavity closed very slowly, and the patient left the hospital much improved in his general health, but with a sinus still discharging

very copiously. He attended as an out-patient for some time, but was lost sight of finally.

CASE 2.—F. D—, æt. 35, was admitted into the German Hospital on August 11th, 1888, under the care of my colleague Dr. Port, to whom I am indebted for the permission to publish the case. The patient complained of severe diarrhoea, which had been treated without benefit for several weeks. On admission he was found very cachectic and feverish ; there were distinct signs of a small cavity in the right apex. The patient had uncontrollable diarrhoea, and the diagnosis was made of tubercular ulceration of the intestines. After being in the hospital for a few days the patient began to complain of great frequency of micturition ; very often he had to pass water more than twenty times in the twenty-four hours, while all the time the urine was quite healthy. A few days later he began to complain of great pain in the lower part of the abdomen, and a tumour formed behind and slightly above the symphysis pubis. The nature of this swelling remained quite obscure, and an examination under an anæsthetic also failed to lead us to a diagnosis. A few days later fluctuation seemed to be indistinctly perceptible, but the aspiration needle withdrew only a little fæculent looking and smelling fluid ; it was thought that the needle had been passed into a piece of intestine adherent to the abdominal wall. Nothing could be done for the patient, who sank gradually, and died six weeks after admission.

The post-mortem examination showed that the tumour in the pelvis was a fæcal abscess in front of the bladder ; there was a carcinoma of the small intestine, which had become adherent to the summit of the bladder and the anterior abdominal wall ; perforation of the intestine had occurred just at the point where the carcinoma was adherent to the reflection of the peritoneum ; fæcal matter had leaked through into the prevesical space, and had caused

a phlegmonous abscess there. Guyon has met with a case almost exactly similar to this one.

CASE 3.—B. B—, a young married woman, always in good health before, and mother of three children. Early in July, 1894, she had a sudden attack of very severe pain in the lower part of the abdomen; no medical treatment, however, was required, and after a few days' rest she felt quite well again. Six weeks later the pain suddenly recurred and was very intense; there was no rise of temperature, but the patient felt extremely ill and weak: the urine had to be passed very frequently. A few days later a swelling was noticed just above the symphysis, which increased in size during the next few days. Two medical men saw her, and came to the conclusion that it was a case of sarcoma growing from one of the pelvic structures and unamenable to operation, and gave a very bad prognosis. I saw her four days later, and the experience gained in my former cases suggested at once the probability of its being a prevesical abscess. The tumour was hard, smooth, of the shape of a distended bladder; it extended to about $1\frac{1}{2}$ inches above the symphysis. Vaginal examination proved the anterior part of the pelvis to be blocked by a hard, badly defined mass in close attachment to the front and the right side of the uterus; the swelling seemed to occupy the right parametrium altogether. Fluctuation was very indistinct, but the aspiration needle withdrew pus. The next day the abscess was opened freely in the linea alba, and a great quantity of foetid pus evacuated. While exploring the walls of the abscess cavity a small hole was detected in its lower and posterior part; this was enlarged, and was found to lead deep down into the pelvis into another cavity filled with decomposed blood and pus: the walls of this deeper portion of the abscess were very brittle, and bled copiously. The whole cavity was plugged with iodoform gauze for twenty-four hours, when all hæmorrhage had ceased, and the patient made a slow but uninterrupted recovery. From the situation

of the abscess, in close affinity to the uterus and in the parametrium, from the fact of its being a suppurating hæmatoma, and from the very brittle condition of the abscess walls, I was led to form a strong suspicion that the abscess was due to rupture of a tubal pregnancy in a very early stage, and that possibly the rupture into the broad ligament might have taken place six weeks before the present illness, when the patient complained of the sudden pain referred to above; but I am bound to say that some points in the previous history of the case did not quite agree with this supposition, especially menstruation had been quite normal and regular ever since the last confinement, two years ago.

My fourth case is still under treatment, and I am afraid will be so for some time to come, but as it presented the same diagnostic difficulties I think I may venture to add it here.

CASE 4.—T. B—, æt. 35, has been suffering all his life from various ulcerations, and many operations had been performed on him; numerous scars are found distributed all over his body, one of them being due to excision of the left hip-joint, done ten years ago. There are also râles and slight dulness over the left apex.

On admission on July 16th, 1895, he seemed very weak and exhausted, was feverish, and complained of a swelling in the lower part of the abdomen; there was great frequency and pain in micturition, and in this case the urine contained a considerable amount of pus. The pelvis and the lower part of the abdomen was blocked by a hard firm mass, which on rectal examination seemed to fill up the whole pelvis, and again the presence of a large pelvic new growth seemed very probable. But when examining the patient under an anæsthetic I thought I detected fluctuation, and the aspiration needle showed the presence of pus. A large incision in the linea alba was made immediately, and a great quantity of pus evacuated; the abscess had probably broken into the bladder, for

after the evacuation the urine became soon quite clear. The bladder was washed out regularly for some time, but the fluid injected did not pass into the wound ; apparently the communication between the abscess and the bladder was a very small one, and had closed very quickly. The improvement in the patient's condition was a very marked one, but it did not last long : in the first days of August the temperature rose again ; pain, difficulty to empty the bladder, and diarrhoea set in. On August 6th he was again put under chloroform, and again on examination we felt grave doubts whether there was not after all a malignant new growth in the pelvis. When, however, examining the wound in the linea alba, we found that the communication between the intra- and extra-pelvic portions of the abscess which had not been sufficiently enlarged in the first operation had closed up, and it was necessary to make a free opening there. A fair amount of pus escaped again ; at the bottom of the cavity the bladder was seen and felt distinctly. Free drainage was provided, and everything seemed to go on satisfactorily, when a fortnight later an abscess was seen to point in the perinæum in front of the anus ; it was opened by my colleague Dr. Luce, and a large quantity of foetid pus escaped ; in spite, therefore, of free opening and drainage the abscess had broken through the floor of the pelvis close to the rectum, and entered the ischio-rectal space. Even now the recovery of the patient was only a temporary one, for after a few days of normal temperature and comparative comfort the temperature rose again and remained high, till suddenly a considerable quantity of pus was discharged from the anus. The abscess apparently has been spreading all through the pelvis, and must have caused considerable destruction, and the case seems very much like a former one, the post-mortem record of which is given by Gruber in 'Virchow's Archiv.' I may add that from the previous history of the patient we had no doubt that the suppuration in this case was due to tubercular disease of some of the pelvic bones, but we were not

able to discover the original situation of the diseased bone. The patient is just now in a fairly good condition, but still the sinus in the anterior wall of the abdomen discharges freely.

Addendum (January 16th, 1896).—I may add that in the meantime this sinus has closed, and that at the present time the patient is in a very satisfactory condition.

The more important contributions to the literature on the subject are—

Gruber, 'Virchow's Archiv,' 1862, Bd. xxiv.

Leusser, 'Archiv f. klinische Chirurgie,' 1885, vol. xxxii (gives the French literature very completely).

Pinner, 'Deutsche Zeitschrift für Chirurgie,' vol. xxiii, 1886.

Koch, 'Münchener medic. Wochenschrift,' 1887, Nos. 44 and 45.

Guyon, 'Gazette des Hôpitaux,' 1891, No. 137.

(For report of the discussion on this paper, see 'Proceedings of the Royal Medical and Chirurgical Society,' Third Series, vol. viii, p. 98.)