BRITISH MEDICAL JOURNAL:

BEING THE JOURNAL OF THE BRITISH MEDICAL ASSOCIATION.

EDITED BY JONATHAN HUTCHINSON, F.R.C.S.

LONDON: SATURDAY, JANUARY 1, 1870.

CLINICAL LECTURE

ON A CASE OF

ABDOMINAL ENCHONDROMA.

BY

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GENTLEMEN,—In the preceding Lectures, I have described enlargements of the liver, the spleen, and the kidney, as causing abdominal tumours. To-day I shall speak of a tumour in the abdomen, not due to the enlargement of an organ.

This photograph was taken from a woman lately in the Hospital; and the preparation on the table, removed from the woman's abdomen after death, is the tumour which caused the appearance represented in the photograph. I shall first read an abstract of the case, and then tell you what the tumour was supposed to be during life, the grounds for that opinion, and how far the opinion was verified after death.

M. O., aged about 36, widow, was admitted on July 8th. The patient had good health until the commencement of growth of the tumour. She was married at 19, and had seven children. Her husband died three years ago. The catamenia had always been regular. Six and a half years since, a few days after the birth of a still-born child, the patient was seized with violent gnawing pain in the right hip, especially severe when walking or standing. This pain lasted three or four weeks, and then left the hip and settled in the right knee. There was neither redness nor swelling about the joints. The pain in the knee left her two or three months before her last confinement (four years ago); but afterwards it returned worse than ever, and continued to the present time unchanged in character and seat. The child born four years ago is healthy and still living. While recovering from this confinement, she observed a lump in her side. It was situated about midway between the cartilages of the ribs and the crista ili, and in the nipple line, or a little outside it. Its size, when first noticed, was about that of a cricket-ball. It was intensely hard, but not tender. She heard the surgeon who attended her remark that it was probably a bony tumour. It was quite fixed. For about twelve months it did not increase in size; nor had she any pain, except in the knee. After this, the tumour began to increase. Neither at this nor at any subsequent time did she observe anything wrong with her urine; it has never been thick or bloody.

About two years since, the tumour commenced to grow very rapidly, and at the same time it became softer. Twelve months ago, her thigh became drawn up towards the abdomen, and she was not after that time able to straighten it. She continued to feel pain in the knee; but the tumour was never very painful. For some months before admission, she occasionally vomited her food.

When seen after admission, the patient was lying quietly in bed, and complained of no pain. She could lie on her back, or on either side. Her complexion was pallid, but not sallow; the expression cheerful. The face and body were fairly well nourished. The tongue was clean. The bowels required medicine to make them act. A large tumour was seen to occupy the entire right side of the abdomen, extending not more than three or four inches to the left of the median line. It was so firmly fixed that it could not be moved, except with the whole body.

The photograph indicates the shape and size of the tumour. On a level with the nipple, near the upper border, were three small prominences, hard, resistant, and slightly moveable. Immediately under these, the mass was exceedingly hard. The great rounded prominence was elastic, and was semi-fluctuating; as was also the prominence of which the umbilicus was the centre. At the inner border of the latter, to its left, were two or three small hard lumps. The portion of the tumour in the lower part of the abdomen was also evidently

a large cyst. The intestine was over the left side of the tumour. Behind, on the right side of the spine, there was another swelling, as large as the two fists, firm, but elastic, and evidently of the same character as the softer portion of the tumour in front, of which the projection behind was evidently part. It could be traced behind to overlap the transverse processes of the lumbar vertebrae, and the posterior part of the iliac crest near the spine. The tumour descended into the pelvis. By a vaginal examination, a mass was found, occupying chiefly the right side of the pelvis, of the size of the foetal head, smooth and elastic, clearly containing fluid. The uterus was healthy, pushed up and to the right. On the left border, just above Poupart's ligament, was a small tumour, of about the size of a bantam's egg, moveable, and apparently separate, or loosely connected with the rest.

The right thigh was flexed upon the abdomen, and could not be straightened. There was complete paralysis of the branches of the anterior and external cutaneous nerves, motor and sensory.

The urine was acid, of specific gravity 1017, with the faintest trace of albumen. A deposit of pus fell, but not more than might be accounted for by a leucorrhoea from which the patient suffered.

July 29th. A fine exploring trocar was passed into the part of the tumour next the umbilicus. A red tenacious fluid escaped, of about the consistence of the white of an egg. Under the microscope, it was found to contain great quantities of red blood-corpuscles and a few larger cells. Some minute whitish flakes, which floated in it, were found to consist of large granular and fatty cells, about 1-2000th to 1-800th of an inch in size, for the most part rounded, but in some rare instances with outrunners.

The patient continued in much the same condition—becoming thinner, the pain in the leg and oedema increasing—till August 25th, when one of the cysts was tapped, under the direction of Dr. Ringer, and about two pints of fluid removed, precisely similar to that just described. Considerable relief followed, and no ill effects resulted from the operation.

On August 27th, another cyst was tapped, to the right of the umbilicus; but only an ounce of very tenacious fluid could be obtained.

On August 29th, she was tapped again, still more to the right; and six ounces of similar fluid were removed.

Next day (August 30th), there was considerable tenderness around the puncture; and on August 31st the pulse was 148, wiry; temperature 105.4 deg. The tongue was furred; the tenderness was increased. During the next four or five days, the signs of peritonitis gradually subsided, and the temperature fell nearly to the normal.

On September 5th, however, the right leg (in which the oedema, partially reduced by the tapping, had again returned) became the seat of erysipelas. The skin became red, and blebs formed at different places. The temperature rose to 102 deg., and remained at that height for several days.

During this time the patient had been much troubled with vomiting, more at some times than others. She emaciated rapidly. The character of the tumour remained unaltered, but its size increased; and the pressure of the pelvic portion on the veins caused extreme oedema of the external genital organs and occasional retention of urine. To relieve the last named symptoms, it was in contemplation to tap the pelvic part of the tumour through the vagina. The idea, however, was abandoned, in consequence of the prostrate condition of the patient, who steadily sank, and died on September 15th.

POST MORTEM EXAMINATION by Dr. Bastian, forty-eight hours after Death.—The heart and lungs, liver and spleen, were all healthy. The right kidney was displaced upwards, not involved in the new growth, and fatty. The left kidney was healthy. The abdominal cavity was distended with a large, somewhat rounded, growth, partly cystic in character. The cæcum was superficially adherent, but no other part of the intestinal canal was connected with the morbid growth. After careful dissection, it was found that the main portion of the growth was of a soft, enchondromatous character, apparently having its origin at or near the right iliac synchondrosis. The growth was closely adherent to, and indeed continuous with, the lumbar vertebrae, and also the edge and much of the surface of the right iliac bone. The latter

was much thinned at some places, and at one small spot was actually perforated. The uterus and ovaries were perfectly free and healthy; merely displaced to the left side of the pelvis. On section, the tumour was found to have a central portion, somewhat hemispherical in shape, eight and a half inches in diameter. This was for the most part solid, though there were smallish cysts scattered through its substance, mostly containing a thick sanguineous fluid. Many large cysts—some containing half a pint of thick pultaceous fluid—were situated at the periphery of the growth: some of them were opened during its removal. The weight of the solid portion of the tumour was fifteen pounds.

When the woman came under observation, the first question to be answered was this—Is the tumour formed by an enlarged viscus? I have told you that the first points to be investigated, the first questions to be answered, when you meet with an abdominal tumour are, Is it an enlarged viscus, enlarged from disease or otherwise; or is it a misplaced viscus? This could be no misplaced viscus. There could be no question that it was a large body not natural to the abdomen. To answer the question whether it is an enlarged viscus or not, I told you that we note especially the situation of the tumour. This tumour was seated in the right side of the abdomen, extended some inches across the middle line to the left, was in contact with the right lateral abdominal parietes, descended into the pelvis, ascended into the right hypochondriac region, and formed in the right lumbar region a prominence of considerable size, between the last rib and the crest of the

Fig. 1, from a photograph, shews the anterior aspect of the abdomen.

ilium. That was the situation of the tumour, the size of the tumour, the extent of the tumour. (Fig. 1.)

Now these few facts, which I have drawn out from the case, were ample evidence that the tumour was not formed by diseased enlargement of the right lobe of the liver, by disease of the kidney, by the ovary, or by the mesenteric glands. No matter what the disease affecting the parts I have mentioned might have been, neither could have caused such a marked prominence in the back as is represented in the photograph (Fig. 2), and neither liver, kidney, nor mesenteric glands could have descended, as this tumour did, into the pelvis. On making an examination *per vaginam*, we found that it passed down on the right of the pelvis, and pushed the uterus to the side. Again, a diseased mass originating in the ovary or in the mesenteric glands, would, ere it had attained so large a size as this, have spread more to the left. The tumour in this woman scarcely passed the middle line. Note then in

regard of this tumour these two facts—1. The projection backwards, between the crest of the ilium and the last rib: 2. The small extent to which it passed beyond the middle line in front. We thus excluded, without reference to the history, simply from the present condition, all enlargements of the liver, the kidney, the ovary, the mesenteric glands, in fact all possible abdominal viscera, as the cause of the tumour. The intestine was in front of the mass—of the left side of it, at any rate. This fact, conjoined with the history which I have read to you, the account of where it began, together with the above reasons for excluding abdominal organs as its cause, indicated that the tumour was post-peritoneal in origin, that it arose behind the peritoneum. Having come to

Fig. 2 shews the posterior projection.

the conclusion that it was post-peritoneal and a new growth, we then had to ask ourselves what was its nature? At the time when she came under observation, it was clear that the tumour was partly solid, and partly cystic; solid and cysts made up the mass. We knew it was solid by the touch and feel; we knew it to be cystic by the fluctuation and the elasticity, which were unmistakeable evidence of the fluid, even without the exploring trocar. Now, whilst there was evidence enough in the touch to tell us that part was solid, the history of the case rendered it probable, in the very highest degree, that it was completely solid in its origin. The surgeon who first found it said he thought it was a "bony tumour." Nothing in the history could be better proof than was this remark, that the tumour was solid at its outset. It seemed probable, from the situation at the time when it was first discovered, which was very well described by the woman, that it was connected with the transverse processes or with some parts of the lumbar vertebrae, between the crest of the ilium and the last rib. So also it was probable that at that time it was very fixed, in close connection with the lumbar vertebrae. Again, the pain that was felt was not in the growth, but at the knee. It was the pain felt at the extremity of the nerves that were pressed by it. You know how frequently, in damage to the course of those nerves, the pain is felt in the knee. The loss of sensibility, and the contraction of the limb, all pointed to a degree of pressure that was little likely to be exercised by anything but a solid growth. A cystic tumour in its origin

would not have produced any such pressure as that, at any rate not in the abdomen. It might have done so in a limited space, but not in the abdomen. When we first felt the tumour, it was, partly at least, formed of cysts; but these, the history and symptoms indicated, were formed subsequently to a solid growth. At first, the tumour increased slowly in size; then it grew rapidly, and it is probable that during that rapid growth the cysts were developed.

The conclusion to which we came, then, you may remember, soon after the woman's admission, was, that the tumour was solid—probably springing from bone, or at any rate in close connection with bone, growing in all directions, pressing on the nerves of the lower extremity; at first increasing slowly, and then rapidly, with the formation of cysts.

Now, an enchondromatous tumour may have these characters. Enchondromatous tumours spring from bone, from cartilage, from fibrous tissue. These are precisely the parts with which the tumour appeared to be connected. The lumbar vertebrae and the bones of the pelvis are common enough starting points of enchondromatous growths. An enchondromatous tumour is a cartilaginous tumour; it is formed of cartilage, as the name signifies. It is surrounded by a fibrous sheath, sending in processes of fibrous tissue, which run across the tumour. On these fibrous septa, the vessels are especially situated. The cartilage is not always like adult cartilage; it is commonly like foetal cartilage, and even a very rudimentary form of foetal cartilage. The consistence of an enchondromatous tumour varies a good deal. It may be quite solid, if resembling adult cartilage; or soft, if like foetal cartilage; and sometimes it has a jelly-like consistence only. At their origin, cartilaginous tumours are usually solid and fixed, just as this was. When large, they are elastic, and formed in part of cysts—a combination, as some have supposed, of cyst(?) and enchondroma—while others have supposed that the fluid has another origin. These cysts usually contain a fluid, such as we got from tapping one of these cysts; that is to say, a fluid of the consistence of white of egg, tenacious, and containing in it cells such as are represented in these drawings, and such as you find in cartilage. You find these floating in the fluid. Some persons have supposed that this fluid is formed by the softening down of pre-existing cartilage—by a retrograde metamorphosis. But the facts given by Virchow and others to prove this origin of the fluid are by no means conclusive to my mind. As far as I have read, the evidence on this point consists of mere assertions—that is, as to the mode in which the cysts are formed. You find some solid cartilage, some gelatinous cartilage, some that is softer still, and you find fluid; therefore each of these softer conditions, it has been asserted, is a mere stage of the more solid. I am inclined to the opinion that, in some cases at least, the fluid is formed from the first, and is formed at once fluid, and not by solid softening down. The cartilage-cells are in it, but they are quite free; and, instead of the connective matter between the cells being a solid matrix, it is a fluid.

I will tell you two arguments deducible from this case which are against the view that the fluid was formed by a softening down of the matrix. There was no olein, or next to none, in the fluid removed. The second argument is, that this fluid reformed. It was not cartilage that formed in the cyst and softened down, but fluid identical with that removed by tapping reformed. As the internal surface of the cyst was then capable of forming a fluid similar to that which we removed, is it not probable that the primary fluid was formed in the same way? It is very unlikely that the lining membrane of the cyst should form a fluid identical with that which was formed by the mere softening down of a pre-existing solid. These seem to me strong arguments. It is, however, a matter of no moment to us, as clinical physicians, how the fluid is formed. I merely mentioned the point, because the case in some particulars is an uncommon one, and the subject one of considerable pathological interest.

We came to the conclusion during life, then, that it was an enchondromatous tumour, with cysts in it, such as are often found in enchondromata. Several other views as to its nature were, however, possible. We thought of a collection of hydatid cysts; but, on considering the matter, the character of the solid part and the solid origin of the tumour excluded the idea. It was, indeed, a mere thought passing through one's mind. The extreme degree of pressure that led to the paralysis and to the contraction of the limb should have excluded the idea of hydatid cysts.

Again, there was the question, Was it malignant? I showed that photograph yesterday to a gentleman—a good pathologist—and that was the first question he asked me: "Is it malignant disease?" No, it was not. We excluded that idea for these reasons: the history, the duration of the disease, the solid nature of it at its origin, and the little the patient's health suffered for so long a time, were all opposed to the idea. When the patient came under observation, she was in pretty good health, except for the great bulk of the growth. She was fairly

well-nourished, and had none of the complexion of cancer which she would have had if this had been a rapidly growing cancer. Again, the consistence, the elasticity, and the mode of growth, were all opposed to the idea that it was malignant disease; and, on the introduction of the trocar, the character of the fluid removed seemed to render it improbable, almost impossible, that it could be malignant. At the same time, we could not say that a portion of the tumour was not malignant. A combination of enchondroma with malignant disease is not uncommon, so that there might have been, superadded to the original enchondroma, a certain amount of cancer. We could not say positively that there was not, although we had no evidence that there was, and some facts, as the aspect of the patient, against it.

In the treatment of the case, there was nothing more to do than to alleviate the suffering of the patient. The end was certain. How long it might be delayed, no one could say.

She died, you will notice, from an attack of erysipelas of the leg. That is a very common mode of termination in all chronic non-malignant diseases. I do not mean by erysipelas, but an acute attack of some sort. Some have a little pleurisy, some die from pneumonia, some from peritonitis, from a trifling inflammation, a catarrh, a bronchitis. It is rare for patients to die directly from a chronic disease. The rule is, a slight acute illness carries them off.

There are a few special points in the case to which I desire to direct your attention.

Remember the pain felt first in the hip, then in the knee, but most severely in the knee. Let that impress upon you how tumours in this situation are not uncommonly attended by pain in the knee; and, therefore, having a patient complaining to you of this pain, do not be content with a careful examination of the hip, but look to the abdomen to see if you can find anything there to account for it. You see that six years and a half before she came under observation, after the birth of a still-born child, the patient was seized with pain in the right hip and pain in the right knee. Probably, the tumour began about that time, and perhaps made a little advance then, but it was only two years and a half afterwards that she became aware that she had a tumour, and then it was of the size of a cricket-ball. A patient often has a tumour on his abdomen of which he is not cognisant till the growth has attained a considerable size, and then the patient will tell you that the tumour has grown rapidly; that it has only been of so long standing. He will say it has only been there six months, or a year, which means that it is only for that time that he has known of it, though the tumour may have been there for an indefinite time.

She had suffered occasionally from vomiting her food. This is a common symptom of abdominal tumours. It may be produced mechanically by the tumour pressing on the stomach. It was probably produced in that way here. Or, the tumour may cause vomiting by leading to peritonitis. In some cases, the vomiting probably takes place after a sudden increase of size of the tumour in the direction of the stomach. Then, after a little time, the stomach gets accustomed to the increased pressure, and the vomiting stops. Remember, then, these two causes of vomiting in abdominal tumours—leaving out affection interfering with the function of the kidney—pressure and peritonitis. Another point: the woman, it is said, had a faint trace of albumen in her urine, and when it stood, a little pus fell; but the woman was the subject of leucorrhœa, and was very likely to have a little leucorrhœal fluid mixed with the urine. The leucorrhœal fluid contains pus and albumen, and thus you will find a trace of albumen in the urine, just as a man with a gleet, with a little cystitis, with a little pyelitis, will have pus in his urine, and with the pus will be a trace of albumen. In these cases, remember, that the quantity of albumen is in proportion to the quantity of pus. It sometimes requires considerable care to prevent the admixture of purulent matters with the urine, especially in women. The œdema of the leg was entirely due to the pressure on the veins in the pelvis—on the iliac vein, not on the vena cava, or, of course, both legs would have suffered, whereas it was only the right that became œdematous. When the tapping took place, the size of the tumour was lessened and the œdema diminished. The tapping was attended with a little peritonitis, a very common consequence of tapping cysts in the abdomen. The woman's kidneys, you see, were healthy. If she had been the subject of albuminuria and had had such a peritonitis, the chances would have been vastly against her recovery from it. The tapping, however, afforded only a temporary relief, for the fluid returned. The size and weight of the tumour is a matter of considerable interest. So far as I know, it is one of the largest enchondromatous abdominal tumours on record, if not the largest. The solid part, after letting out the fluid, weighed fifteen pounds.

And now, gentlemen, we will look at the tumour and also at some of these drawings and preparations of enchondromatous growths.