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A Clinical Lecture
ON
DERMOIDS: OVARIAN AND PELVIC,

DELIVERED AT THE SAMARITAN FREE HOSPITAL ON THURSDAY, NOVEMBER 5TH, 1903.

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FOR practical purposes the characters of an ovarian dermoid are well known. We are all aware that they are cystic tumours containing greasy fluid, felted hair, bone, teeth, skin and more complicated structures. On the theories, or rather doctrines, which profess to explain their origin we need not dwell, I only mention them because patients and their friends, hearing about the bones and teeth, not rarely ask questions, and expect an explanation. "Parthenogenesis" is no explanation, but simply reminds us that dermoid cysts may be found in little girls; the term should be limited to a phenomenon seen in certain insects where an unimpregnated female may produce fertile ova, the produce of which, however, are, I understand, sterile unless impregnated. "Fœtal inclusion" is open to much objection, as is "the inherent formative power of the ovary."

We cannot really explain why dermoids grow, but we can often manage to treat them very satisfactorily. Knowing what they are like, we must bear in mind some of their relations and associations.

First, granting that we have to do with a dermoid diagnosed by palpation, or even actually exposed at an operation, we must remember not only that the great majority of abdominal dermoid tumours are ovarian, but also that a dermoid tumour found in the abdomen quite separate from the uterine appendages may, nevertheless, be of ovarian origin. Hence it is of great importance when such a tumour is discovered to draw up the uterus and examine its appendages with care. The chances are that in such a case a stump will be found replacing one ovary and tube, in other words, the dermoid was of ovarian origin, but has twisted itself off its pedicle. It usually adheres to the great omentum, that interesting serous fold which the modern school of surgery has learnt to utilise so freely. It will establish collateral circulation and relieve ascites when stitched to the parietal peritoneum in certain cases of cirrhosis, it will guard the general peritoneal cavity if sewn to the abdominal wound under a diseased gall-bladder which requires drainage, but is too contracted to be fastened safely to the parietes, and it will greatly fortify the repair of plastic wounds in surgical operations on the stomach and intestines. The fostering qualities of omentum adherent to cysts detached from their original blood supply suggested the utilisation of that process of peritoneum for surgical purposes.

In a case of this kind, I repeat, the uterus should be carefully examined, not only to see if the appendages be wanting on one side, but when this condition is detected to ascertain the state of the opposite ovary, for ovarian dermoid disease is often bilateral.

Yet we hear that an abdominal or pelvic dermoid may be non-ovarian. This is quite true, for it has been found in a male, and not as a homologue of an ovarian tumour—in plainer words, not as a tumour of the testicle. We need not dwell on dermoid elements in the testicle, as they are clinically very different from ovarian dermoids. The possibility of a cystic abdominal tumour in a male being dermoid should be borne in mind in these days when surgeons are always ready to extirpate any removable tumour. In Ord and Sewell's case a robust young country gentleman suffered from an abdominal swelling. On tapping, two pints of thick, greasy fluid containing hairs came away. The patient died in a few days, and a retro-peritoneal dermoid was found firmly united to the bladder and rectum. Wilks and Curling report another instance where a pelvic dermoid existed in a man, æt. 21. It pressed into the rectum and was tapped, two pints of oily fluid coming away. Eight years later a calculus was removed by lithotomy; it had a nucleus of hair. Thus a dermoid abdominal or pelvic tumour may develop in a male; other cases besides those quoted have been recorded. In these days a doubtful cyst is explored, not tapped; the escape of dermoid fluid into the peritoneal cavity is obviously dangerous.

The non-ovarian retro-peritoneal tumour is, however, much more frequent, or, rather, less rare, in women than in men. It burrows very deeply in the pelvis and may lie anterior to the uterus, or between it and the rectum, or completely behind the rectum, in which case it causes the perineum to bulge freely, and has been removed through an incision between the rectum and coccyx. This kind of dermoid is sometimes first recognised by the discharge of hair and grease from the rectum or in the urine.

Retro-peritoneal non-ovarian dermoid is, however, exceedingly rare, many recorded cases being

doubtful, or, more correctly speaking, instances of ovarian dermoids transplanted to the omentum. Returning to genuine ovarian dermoids, the most important question in respect to their characters is, Are they innocent or malignant? It is now known that true pathological malignant degeneration of this kind of tumour is quite exceptional, and occurs late in the development of the growth. But the dermoid tissue not rarely implants itself on the peritoneum outside the cyst wall; this prejudicial change is constant in a form of dermoid mainly solid, named *teratoma*.

Dermoid cyst of the ovary proper is a very common tumour. I have operated in this hospital on five cases during the past summer. The percentage of dermoids in relation to other ovarian tumours is much higher than was once supposed, for mixed adenomatous and dermoid multilocular cysts are quite frequent. Only last month I removed a large cystic tumour, emptying during the operation several pints of typical ovarian fluid, free from dermoid elements, from a cyst larger than its fellows; afterwards grease and hair were found in some of the lesser cavities. Such an experience is common in ovariotomy. Ovarian dermoids proper are rarely multilocular, and nearly always pedunculated, which is fortunate, as enucleation would involve risk of escape of septic grease. They are often bilateral, so that it is always necessary to make sure of the condition of the opposite ovary when an ovarian dermoid is removed.

This frequency of bilateral dermoid disease is specially important to bear in mind in cases under puberty. Ovarian cysts in children are nearly always dermoid, so when a cyst is diagnosed in a child the possibility that both ovaries may require removal must not be overlooked, and the consequences of double ovariotomy must be explained to the patient's friends.

Ovarian dermoids are met with in women of all ages; children, young girls, parous subjects, elderly virgins, and old women who have borne children. In age they appear sometimes, as in a case which I shall relate, to lie latent, but I have removed large dermoids in an active state of development from old patients.

There are four clinical features of special interest in relation to the common ovarian dermoid. (1) If diagnosed early, ovariotomy proves easy and highly successful. (2) Twisting of the pedicle and worse complications are very frequent. (3) Association of an ovarian cyst with pregnancy, labour, and the puerperium is specially serious when the tumour is dermoid. (4) Neglected dermoids cause dangerous and intractable complications.

Early diagnosis of an ovarian dermoid is one of the greatest services which a doctor can render to a patient, and if the tumour be successfully removed cure is complete, for a dermoid is not pathologically malignant, so there will be no recurrence in the pedicle. The tumour has not, in such a case, contracted adhesions, its pedicle is rarely broad and usually narrow, and above all, none of the contents have escaped into the peritoneal cavity, nor has bone or hair worked its way into the bladder or rectum. Even twisted pedicle, so frequent in dermoids, at first facilitates the operation, the ovarian vessels being usually plugged. If operation be delayed serious effects may arise from this complication.

An ovarian dermoid forms a tumour of small and moderate size, usually occupying the middle of the abdomen up to or above the umbilicus. A very large dermoid is often compound, the main loculi being freed from dermoid elements, but this is not a matter of much clinical import. There will be resonance in the epigastrium and flanks. Free fluid in the peritoneal cavity is very unusual, just as in uterine fibroid disease. In cases of glandular ovarian cyst this condition is not rare; in fibroma of the ovary (which has been taken for a dermoid when very soft) it is frequent, and in free papilloma or malignant disease of the ovary constant.

A dermoid ovarian tumour may fluctuate quite distinctly, but as a rule fluctuation is obscure, and there is a doughy feeling on palpation. Above all, irregular degrees of consistence in different parts of the tumour are very characteristic in most dermoids. It may feel tense high up, hard on one side, almost spongy on the other, doughy below, and so forth. When a mass of bone can be felt, diagnosis is practically certain. A true included monstrous fœtus never lies in a movable cyst and well up in the abdomen; a retained extra-uterine fœtus in a sac is associated with conditions in the pelvis and disturbances of the catamenia which are not to be detected in a case of uncomplicated dermoid, whilst a normal uterine fœtus should never be taken for bone in a dermoid cyst. As a rule, I find that bony plates in ovarian dermoids are not to be detected by palpation, even though plenty may be found in the tumour after or during its removal.

An ovarian dermoid is quite movable at first, and on pelvic exploration the uterus is nearly always far back, behind the lowest part of the tumour, which comes down to the level of the pelvic brim, if not lower. These relations are, however, by no means constant. Occasionally, as in a case where I operated here last month, the entire uterus lies forward, pushed upwards by the dermoid which comes down into Douglas's pouch.

When very small, a dermoid not rarely lies altogether in the pelvis, and occasionally remains there even after attaining a considerable size. Diagnosis is not always easy, but occasionally the doughy feeling is very evident on bimanual palpation. A pelvic dermoid is a distinct source of danger in young married women, as it will obstruct labour, and may rupture, especially should obstetrical operations be necessary.

But complications often set in early. Ovarian dermoids are particularly liable to torsion of the pedicle, intra-cystic hæmorrhage (very rarely serious), adhesions due to irritation and inflammation of neighbouring peritoneum, septic infection of the contents and escape of the contents from the cyst cavity, either through rupture of the cyst wall or by processes which allow hair or bone to grow through the wall.

Even very early in its history a dermoid is often tender to touch, a fact which aids in diagnosis. A history of a very sharp attack of pain is not rare, while very often the patient complains that she has suffered from dull pain for several days.

The sharp pain means acute torsion of the pedicle; the dull pain, if observed by a medical attendant to be free from rise of temperature, signifies slow torsion. The latter complication, much the more frequent, is, however, often associated with local

peritonitis, and in that case there will be more or less feverishness. I once observed both forms of torsion in a patient under my care here with double ovarian dermoid disease. She had been subject to abdominal pains difficult to localise. After passing a motion she felt the most intense pain in the abdomen, and I found her moving about her bed in great agony, with free, cold perspiration. On operating, the right ovary was found converted into a big tumour, extremely livid and full of grease. Its pedicle was tightly twisted, with turgid veins and a large empty artery. The opposite ovary formed a yet larger dermoid tumour with its pedicle atrophied through chronic torsion. The patient on recovering from the anæsthetic, declared that she felt extreme relief as all pain was gone; this is not the rule immediately after an ovariotomy, but the pain caused by the ligatures on the pedicle was relatively so slight as compared with the sufferings due to torsion that the patient hardly perceived it.

Septic changes in the contents of a dermoid cyst are frequent, and in non-puerperal cases are usually due to the bacillus coli entering at a point on the wall where there are adhesions. They add to the risk of complications after ovariotomy.

Pregnancy involves yet greater risks, and in the puerperium worse germs than the bacillus coli may infect the cyst. We see a great deal of the results of pregnancy complicating ovarian tumours in this hospital, and dermoids specially cause trouble. The complications above described, particularly torsion, are very apt to occur during pregnancy.

There can be no doubt that the tumour is more prejudiced than the pregnancy, for torsion of the pedicle, even when acute, does not necessarily cause abortion; delivery may be perfectly normal, provided that the tumour be above the pelvis, whilst the puerperium may proceed normally as far as the uterus and general system are concerned, although the cyst is at the same time becoming infected.

The treatment of pelvic dermoids during delivery is a grave matter, which we cannot fully discuss at present. Ovariotomy through an abdominal incision is probably the safest course, provided there be both a competent operator and satisfactory nursing and appliances at hand. Opening the cyst through a vaginal incision sounds simple, but after clearing away the fatty contents, often mixed with much hair, the cyst wall may be torn off in part as it is drawn down, so that the remainder of the tumour with the pedicle unligatured will slip back into the peritoneum. Dangerous hæmorrhage and peritoneal infection will ensue. It has been suggested that the experienced obstetrician, who has never done an ovariotomy, had better, in such a case, make an abdominal incision and draw up the tumour above the pelvic brim, closing the wound, delivering the woman, and then preparing her for operation after the puerperium.

These considerations, however, are mainly obstetrical and too much open to grave debate to be suitable for this lecture. As a rule the dermoid does not prejudice gestation, but is liable to complications during pregnancy, and is much exposed to infection in the puerperium. Experience teaches us that the removal of the dermoid during pregnancy is not dangerous, whilst abortion does not necessarily follow the operation, and should it ensue it hardly interferes with recovery. But experience likewise reminds us that the risk of ovariotomy is greatly increased when the cyst and its greasy contents have undergone puerperal infection. On that account we should strongly advise a pregnant patient, who has an ovarian cyst, to have the tumour removed during pregnancy. Should she refuse, she should be kept in bed after the puerperium, and not allowed to rise before the operation is performed.

The spilling of grease, often mixed with hair, into the peritoneal cavity may necessitate flushing with saline solution, or free "toilet" with pads, but such manipulations increase the chances of abortion. Hence a small dermoid is best extracted entire through a free incision in the middle line, whilst if large, great pains must be taken to prevent grease escaping into the abdomen when the cyst is opened. A trocar and cannula are quite useless unless the fluid in the cyst is thin and abundant.

In my own practice I have detected chronic torsion of the pedicle with dense adhesions in six cases of ovariotomy on dermoids diagnosed (as tumours at least) before a recent pregnancy. The patients recovered, though the operation was always difficult, save in one very bad and neglected case of puerperal infection with fœtid fluid in the cyst and close adhesions to large and small intestines. In conclusion, I will relate a case where I operated in this hospital last spring, on a patient who had been delivered of twins two years previously. Labour was on that occasion impeded by the tumour, which occupied part of the pelvic cavity, rising into the left iliac fossa. Once more the patient became pregnant and labour was induced at the sixth month, nine months before I performed ovariotomy. I found a small heavy dermoid of the left ovary full of fat and felted hair, strongly adherent to the uterus and rectum; the right ovary was dermoid and required removal. Convalescence was rapid, but the case is instructive as showing how a dermoid cyst may imperil labour, and may itself be endangered by the processes of gestation.

Neglected dermoids were once very often seen in hospitals. When I was house-surgeon at St. Bartholomew's, in 1871, I saw two women, one almost a child, with pus and hair discharging from the bladder and rectum. Occasionally such cases are witnessed at the present day in patients who dread operative measures. Excision of part of the bladder or of intestine may be necessary, whilst in some cases the dermoid elements cannot be thoroughly extirpated. When the rectum is damaged by the separation of dense adhesions during the removal of an old dermoid, it is often advisable to drain by the vagina, and to sew the broad ligament to the peritoneum of the posterior part of the pelvis and upper portion of the rectum above the seat of injury. In this way the peritoneal cavity is cut off from a focus of deadly infection; abdominal drainage is untrustworthy in such a case.

Under circumstances not clearly understood, small pelvic dermoids may lie latent for years and fail to contract adhesions. I removed a tumour of this class last summer from an old lady, æt. 63, in a nursing home, and the results were satisfactory. Most probably growth is arrested in these cases by plugging of the vessels in the long, narrow pedicle of the heavy little tumour.

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