TORSION OF THE GREAT OMENTUM.

A CASE CLINICALLY RESEMBLING OVARIAN CYST
WITH TWISTED PEDICLE.

BY

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TORSION of the great omentum is a rare condition, and the reported cases are still less than one hundred in number. I am recording this case partly on account of its rarity and partly because the signs and symptoms very closely resembled those produced by the twisting of the pedicle of an ovarian cyst.

I never suspected that I was dealing with anything but an ordinary ovarian cyst with a twisted pedicle until I examined the patient under the anaesthetic before operating. Then it was clear that there was no large cyst, but an irregular elastic mass. I thought it possible that these signs could be accounted for by the rupture of the main cyst of an adenoma of the ovary.

History.

The patient was a woman, aged 35, who had been married for nineteen years, and had had five children. Her general health had been good. She had had a right inguinal hernia for six years, and had worn a truss, which had controlled it properly. If ever the patient got up without first putting on the truss the hernia always appeared. The mass was as large as her doubled fist. During the six years it had not altered in consistency or size; it could always be replaced easily and quickly, and was never tender or painful. The only discomfort associated with the hernia was a dragging pain in the epigastric region if the contents of the sac were allowed to remain down for any length of time. In August, 1909, the patient was operated upon for right hydronephrosis. The loin incision was used, and consequently the peritoneal cavity was not opened.

The Present Illness.

The patient dated her present illness from July 23rd, 1910, one week before admission to St. Thomas's Hospital. That day she was doing her washing, and as she turned to go out of the door, which was on her left hand, she trod on the copper stick, tried to save herself from falling with her right hand against the open door, but fell heavily on to the stone floor full length on her left side. At the time she felt shaken but did not notice anything definitely wrong. On the following two days she felt "out of sorts and shaky."

On July 26th, between 1 and 2 p.m., she had an attack of abdominal pain. It was not localized, and was of a colicky nature. During that day she had about a dozen attacks of the same kind.

On July 27th, at 1 a.m., she had an attack of most excruciating pain in the abdomen, accompanied by shivering and sweating. This was followed by other exactly similar attacks at intervals of about ten minutes. A doctor was called, who treated her for colic.

The attacks of pain continued through that and the two following days (July 28th and 29th) at gradually increasing intervals until admission. There had been no diarrhoea or vomiting, and the bowels had acted regularly.

The patient was admitted to St. Thomas's Hospital on July 30th, under the care of Dr. Tate, who kindly transferred her to my charge.

On Examination.

The abdominal wall was held tense and was very tender, especially in its lower part. Above the symphysis pubis there was an area dull on percussion which extended half-way up to the umbilicus. On vaginal examination the uterus was retroverted, and in front of it a hard mass could be felt extending into the left fornix; the abdomen was too tender to permit of a thorough bimanual examination. The temperature was 101° and the pulse-rate 98. The diagnosis of ovarian cyst with twisted pedicle was made.

The next day (July 31st) the temperature had fallen to 100° and the pulse-rate to 92, but as the pain still continued, operation was thought advisable.

Examination under the Anaesthetic.

An abdominal tumour was felt rising from the pelvis to a point half-way up to the umbilicus. On vaginal examination there could be felt lying in front and to the left of the retroverted uterus a solid, elastic tumour of irregular shape, which extended into the abdomen, and could be easily grasped between the two hands.

Operation.

The left rectus muscle was displaced outwards and the peritoneum divided. There was blood-stained fluid in the peritoneal cavity and a hard granular mass was seen immediately beneath the lower part of the incision. The tumour was attached to the anterior abdominal wall by recent adhesions, over an area which extended upwards for 3 in. from the symphysis pubis. The adhesions were easily broken down, and

then the mass was seen to be the twisted and matted omentum; the lower part was attached by the same type of adhesions to the uterus, left broad ligament, and the iliac and pelvic colons. There was no connexion whatever with the hernial sac, which was on the right side. After separating the adhesions, the tumour was brought out of the wound.

The omentum had twisted about a vertical axis, its right edge having travelled to the left anteriorly and its left edge to the right posteriorly; there were three complete turns. The mass was engorged and oedematous for the most part, but the amount of swelling varied in different parts, according to their relations to the axis of torsion. An attempt was made to untwist the omentum, but it was found to be impossible, partly on account of the turns being adherent to one another, but chiefly, I think, from the amount and unevenness of the swelling. Removal was therefore undertaken. At the top of the twist the omentum was cord-like and about the thickness of one's little finger, but passing out to the left from this was a sheet of normal omentum about 2 in. in width; the twisted part and the latter were ligatured and the mass removed. After removal the uncovered transverse colon was seen crossing the abdomen. The abdominal cavity was closed in the usual way.

The Parts Removed.

The specimen was preserved by the Kaiserline method and drawn afterwards (Fig. 1), and now weighs 9 oz., and measures 10 in. in length. Its upper and the lower parts differ widely in character from one another.

The upper part is a hard fibrous mass, 5½ in. long, 4 in. wide, and 1½ in. thick; it is twisted on a vertical axis through five half-turns, and is so matted and thickened that it cannot be untwisted.

In some places the surface is dark grey, and in others the colour of normal omentum. On looking between the turns of the twist and into the folds on the surface it is seen to be dark red from engorgement with blood. The grey areas on the surface were dark red when the tumour was removed.

The appearance of this part of the mass and the increase of fibrous tissue suggest that there had been chronic thickening in the omentum before the twist occurred.

Microscopical examination shows the presence of a large amount of fibrous tissue and thrombosis of the vessels.

The drawing, which is a view from the front, shows the direction of the twist. The cut pedicle is circular, and measures half an inch in diameter. The lower part where it is continuous with the upper is twisted and thickened, but elsewhere has the appearance of normal omentum, and can be separated into its layers.

After-History.

The patient made an uninterrupted recovery, the temperature remained normal after the operation, and there was remarkably little pain. The wound healed by first intention, and the patient was able to get up on the twelfth day, and leave the hospital on the twentieth after operation.

I saw her about three months after discharge. The hernia had not come down since the operation, and her general condition was excellent.

The recorded cases of torsion of the great omentum are still comparatively few, and I can find references to only 93 cases, although the condition was first observed and described nearly thirty years ago.

I have been able to obtain details of 73 cases from the papers published by Cornu and Pinches,¹ Lejars,² Picquet,³ and others.

Amongst these 73 there either was or had been a hernia in 60, and in almost all of them the hernia was present at the time of the operation.

In the remaining 13 there was no history or evidence of a hernia having existed.

Picquet says that in nearly all the cases collected by Cernezz rotation had occurred between two fixed points, the upper being where the twisted mass became continuous with the omentum, and the lower where the omentum had become attached by old adhesions.

The lower attachment was usually near the hernial sac. In the 60 cases associated with hernia of which I have details, the twisted mass of omentum was fixed below in 52—in 48 it was actually in the hernial sac or attached to its neck, in 3 the adhesion was to bowel, and in 1 to the Fallopian tube.

Old adhesions were absent in only 8 of the cases. In my case the mass was not connected in any way with the hernia, nor were there any old adhesions.

It appeared from the examination of the specimen removed that an omental tumour had been produced by the matting and chronic thickening of that part which had from time to time descended into the sac.

The normal omentum above such a tumour would constitute a long and thin pedicle, and thus the conditions favourable to rotation of the tumour would be produced. In only a small proportion of the cases has the rotation been attributed to any particular exciting cause: repeated attempts to reduce the hernia have been considered responsible in a few cases, and violent efforts in some others.

In my case the patient's fall, three days before the onset of abdominal pain, appears to have been the immediate cause of the rotation of the tumour.

The diagnosis in cases of torsion of the omentum is extremely difficult, and has, I believe, been made correctly on one occasion only. The reasons for the difficulty are that the condition is extremely rare, and the signs and symptoms very closely resemble those produced by other conditions.

The only treatment is by operation: it may be possible in certain cases to spread out the twisted omentum, but in the great majority this cannot be done, and consequently it is necessary to remove the part below the point of rotation.

REFERENCES.

¹ *St. Thomas's Hospital Reports*, vol. xxxiii. ² *Le semaine médicale*, February 13th, 1907. ³ *Bull. et mém. de la Soc. Acad. de Paris*, July, 1910.

A CASE OF ANTENATAL PNEUMONIA.

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THE following case, which by the courtesy of Dr. J. M. Munro Kerr I am allowed to report, presents several features of unusual interest from the point of view of the effect of the disease in the product of conception.

Mrs. S., aged 29, pregnant for the fifth time and apparently at term, was admitted to hospital on the evening of September 17th, 1910, suffering from acute lobar pneumonia in its early stages.

The pregnancy had run a normal course until three days before admission, when the patient felt feverish and complained of sore throat and of general malaise. Her husband noticed at the time that her voice was husky. Early next morning she shivered and had severe stabbing pain below the left breast and over the left base, her breathing becoming rapid, and painful on deep inspiration. There was some sickness during the day. She was seen in the evening by her medical attendant, who diagnosed lobar pneumonia. As she was at term and could not be nursed satisfactorily at home he ordered her removal to hospital.

On admission the face was flushed, the respirations rapid and painful (44 per minute), pulse 124. The tongue was red and dry on the dorsum, and covered at the edges with a thick yellowish-white fur. The bowels were constipated. She had a short, painful cough, accompanied by scanty, tenacious spit, rusty at first, later more bloody. On microscopic examination Fraenkel's *Diplococcus pneumoniae* was found in large numbers, in clusters and in fairly long chains. Some were intracellular in the polymorphonuclear leucocytes. The physical signs were those of an early pneumonia, involving the lower lobe of the left lung. Movement of that side was restricted. Vocal resonance and fremitus were slightly increased. The percussion note had a tympanitic quality over the left lung, in front and behind, and fine crepitations were heard over the lower lobe. The right lung was the seat of some bronchitis. The second sound of the heart was softer and less

sharply defined than normally. The urine was of a deep amber colour, specific gravity 1025, and was acid in reaction. It contained a trace of albumen, and chlorides were diminished.

Later tubular breathing was heard over the lower axillary region, and finally the whole of the lower lobe of the left lung became consolidated, tubularity being extremely well marked. Four days after admission there was lancinating pain over the right lung at its base, and a consolidated patch was found to be present at the extreme base, but there was no further extension.

The degree of pyrexia was moderate throughout, the temperature reaching 103° on the fifth day of the disease, and falling to 98.6° by the following morning. Coincidentally with the extension at the right base it rose to 100.6°, and remained approximately at that level until the twelfth day, when it again reached normal. The patient was free from pain on the ninth day, and the sputum by this time was mucopurulent in character. Subsequent progress was satisfactory.

Labour came on spontaneously on September 19th, that is, two days after admission, and, after a short second stage, the patient was delivered naturally at 10.30 p.m. of a living female child, whose length was 19 inches and weight 6 lb. There was considerable physical embarrassment during the labour, and the patient was freely stimulated and oxygen was administered at intervals.

The child was feeble, but cried soon after birth. It was slightly cyanosed during the night, but this improved in the course of the following morning. Later the breathing became laboured, and increasing cyanosis was noticeable. There were only one or two attempts at coughing. Respiration quickly became sighing, and mucus accumulated in the larynx; death occurred twenty-eight hours after delivery.

A post-mortem examination was performed by Dr. A. M. Kennedy, pathologist to the hospital. The right lung generally was more bulky than the left, and the upper and lower lobes and the posterior half of the middle lobe was consolidated from pneumonia in the stage of red hepatization; the anterior portion of the middle lobe merely showed engorgement. In the left lung marked congestion of the lower lobe was present, while the upper lobe showed numerous minute heads of interstitial emphysema, and one larger bulla at the anterior margin under the pleura. The heart was of normal appearance. The pericardium contained an excess of blood-tinged fluid and a small quantity was also present in the abdominal cavity. The liver and kidneys showed marked venous congestion. The spleen was slightly enlarged, and somewhat soft and diffident. Films from the lung were stained, and in them large numbers of pneumococci were present, similar in morphological characters to those in the mother's sputum.

From the advanced inflammatory changes present in the fetal lungs so soon after birth it is probable that the pneumonic condition originated *in utero*.

Had the pneumonia arisen from insufflation of liquor amnii or vaginal discharge during delivery, it would have had a lobular rather than a lobar distribution. Here there was certainly no insufflation of morbid material, rupture of the membranes preceding the birth of the child by twenty minutes only.

As is well known, pneumonia is sometimes associated with lesions in other parts of the body, pointing to the existence of a blood infection at some stage of the disease. In this case the diplococcus, present in the maternal blood, was apparently transmitted to the fetus through the placenta. The presence of the organism has been demonstrated in such cases in the uterine sinuses, as well as in the fetal portion of the placenta, and passage has been observed in animals (Foa and Bordoni-Uffreduzzi). To allow of transmission of the organism it is probable that some lesion of the placenta must be present, or that the placenta must be damaged by the toxic action of the maternal blood.

Ballantyne¹ says that the fetal lungs are not frequently affected in pneumococcic infections. When they are, lesions of other parts are commonly found—for example, of the pleura, pericardium, or peritoneum. The organism has been demonstrated in the exudates found in these cavities, as well as in the blood, and in the liver and spleen (Carbonelli, Netter, and others). Indeed, the powers of resistance in the fetus seem comparable to those of certain moderately susceptible animals, in which a septicæmic condition is the chief result of experimental inoculation, localized lesions being less common sequelæ.²

When the organism does settle down in the fetal lung, however, it is likely to find a suitable nidus, bearing in mind the defective blood supply before the establishment of respiration. The lung then receives but a scanty supply of blood from the pulmonary artery, most of the blood passing into the aorta by the ductus arteriosus without entering the lungs. The blood which does reach the lungs is somewhat impure, consisting mostly of the return flow from the head. Moreover, the function of the lungs is in abeyance, and in common with other tissues