TORSION OF THE FALLOPIAN TUBE

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Any acute abdominal emergency requires immediate accurate diagnosis and urgent definitive treatment. Torsion of the fallopian tube is rare, and although there is commonly some associated pathology of the tube or ovary, it does occur in a healthy tube. Under these circumstances, and because it produces no pathognomonic signs or symptoms, it is seldom diagnosed pre-operatively in both the acute and subacute stages.

The first case was described by Bland-Sutton in 1890.[1] Regad[2] reviewed 201 cases of tubal torsion; he found that in 18% there was an associated hydrosalpinx, in 14% a tumour, infection or ectopic pregnancy; and in 12% a uterine pregnancy. In the remaining cases reported as otherwise normal, no histology was available and the normality of the tube remained in doubt. Torsion during pregnancy was fully reviewed by Savage,[3] who gathered 13 previously published cases and added one of his own. Caldwell[4] and Kushner and Rosenbaum[5] have also reported similar cases since then.

Thomas[6] recorded an interesting torsion of a hydrosalpinx which occurred in a 14-year-old girl. There was no histological evidence of recent sepsis, but the patient had had recurrent attacks of pain, so he assumed that partial torsion of a normal tube had occurred initially, which had settled spontaneously after causing sufficient tissue reaction to produce a hydrosalpinx.

Kohl,[7] in 1956, reported a case following a Pomeroy sterilization, and another torsion of the fallopian tube occurring under similar circumstances was described by Sandler.[8]

That torsion can occur at any age is illustrated by the cases described by Auvrey[9] and Cassidy and Norbury,[10] where the average age was 11 years, and the cases recorded by McIlroy,[11] Stark,[12] Michaël,[13] and Humphries,[14] where the ages of the patients were between 45 and 50 years. It would appear from the literature that in many cases torsion tends to occur at or about puberty.

CASE REPORT

Mrs. J.P., a 42-year-old White female, presented with an acute illness of 4 days' duration, which consisted of: severe colicky pain in the right iliac fossa that had commenced very suddenly and had continued intermittently, nausea but no vomiting, slight vaginal bleeding, and dysuria with no frequency or strangury. In addition she had had increasing menorrhagia and secondary dysmenorrhoea for a period of 5 years.* The original diagnosis made by her family doctor was of renal colic, but after consultation with a urologist where cystoscopy and retrograde pyelograms were normal it was decided that this was a gynaecological emergency. She had had two normal deliveries 18 and 16 years previously, and the only other significant point which emerged from her interrogation was that 2 months previously she had had an anterior and posterior colpo-perineorrhaphy and amputation of the cervix (in another centre), from which she had made an uncomplicated recovery.

Examination revealed a well-nourished, apyrexial, middle-aged woman who was in obvious pain, but whose general condition was good. Her blood pressure was 110/80 mm.Hg and her haemoglobin level 91%. There was marked tenderness and guarding in both iliac fossae, more so on the right than the left. The bowel sounds were normal and no free fluid was present in the abdomen. On vaginal examination there was marked tenderness on movement of the cervix and in all the fornices. The cervix was normal and closed, the uterus was anteverted, anteflexed and bulky, and there was a tense, tender, cystic mass palpable in the right fornix. The leucocyte count was 5,700 per c.mm., and the erythrocyte sedimentation rate (ESR) was 36 mm. in the first hour (Wintrobe).

At operation the uterus was enlarged to the size of a 6-week pregnancy and the right fallopian tube was haemorrhagic and markedly distended, having undergone a clockwise torsion of 180 degrees (Fig. 1). The left adnexa were normal. A

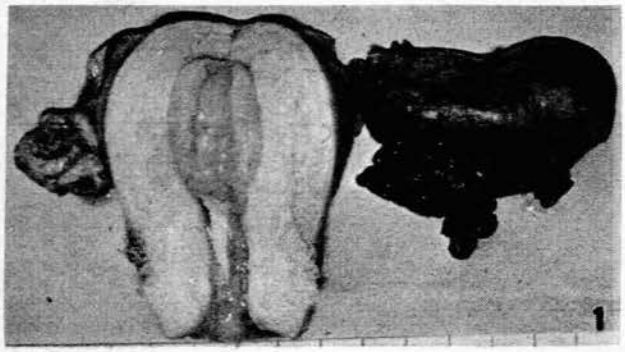

Fig. 1. See text.

total hysterectomy and a right salpingo-oophorectomy were performed, from which the patient made an uncomplicated recovery, and she was discharged on the 11th postoperative day.

Pathology Report

'The uterus shows a moderate regular enlargement and the endometrium is markedly thickened. Histology reveals a very hyperplastic secretory endometrium and a mild cervicitis.

'The fallopian tube is extremely distended with blood and shows a marked congestion of the thinned musculature of its wall.'

AETIOLOGY

Numerous theories about the aetiology of adnexal torsion have been put forward. These were fully discussed by Blum and Sayre,[15] and include the following:

1. Anatomical malformations, where the foundation for this condition is laid during foetal development. The tubes tend to stretch and elongate with foetal growth, and the ovaries come to lie in closer relation to the fundus of the uterus. Since the tube is longer than the covering peritoneum, it assumes convolutions or spirals and this appearance persists to puberty and is even sometimes seen in adults. The presence of these spirals is thought to be a predisposing factor and to play a part in torsion.[16]

2. The association with menstruation has been commented on,[17] as has the coexistence of a longer than usual mesosalpinx. This however cannot be the main predisposing factor, because bilateral torsion has never been reported.

3. The relation to trauma has been noted.[11,14,18] The

*Her last normal menstrual period had finished 2 days before this acute episode.

trauma applied to a pelvic organ is tangential and thus has a twisting movement. It is stated that symptoms often appear after unaccustomed trauma. The action of the abdominal musculature on the ovaries has also been mentioned; this apparently causes the right ovary to twist to the left and the left ovary to twist to the right.

4. Excessive peristalsis of the fallopian tubes and associated venous engorgement have been incriminated as predisposing factors. This is particularly applicable in association with premenstrual tension, and it would appear that torsion occurs most commonly in the week preceding menstruation. The veins supplying the adnexal region are said to be longer than the arteries and therefore twist around them when they become congested. Also, at this time in the cycle there is overaction of the autonomic nervous system, which causes abnormal peristalsis of the tube.

5. Anchoring adhesions, particularly to the fimbriated end of the tube, have been put forward as a cause. It would seem that, generally speaking, the stage is set for a torsion of the adnexa in any condition where a mass is left attached by a narrow pedicle on which it depends for its blood supply. This set of conditions can result from a Pomeroy sterilization. Possibly another factor is an alteration in the position of the uterus, e.g. retroversion to anteversion where mechanical factors would come into play, particularly if anchoring adhesions are present. It would seem in the case described here, where a hydrosalpinx preceded the torsion, that these mechanical factors may have been concerned in the aetiology.

THE CLINICAL PICTURE

The severity of the symptoms and signs produced must depend on the degree of torsion, the amount of interference with the blood supply, the extent of the gangrene, possible involvement of the ovary, and the extent of the venous thrombosis. No typical clinical picture is produced, and it is for this very reason that the diagnosis is more often than not made only at operation.

Symptoms

1. Pain — this tends to be of sudden onset, cramplike or colicky in character, and situated mainly in one or other iliac fossa, and may radiate to the back, or the front of the thighs. It is typically intermittent, and is generally so severe that it is likened to labour pains.

2. Anorexia and nausea are associated with the pain, and vomiting may occur.

3. Frequency of micturition seems to be fairly common, with no associated dysuria.

4. Vaginal bleeding may occur after the onset of the pain and is presumably due to pelvic venous congestion.

5. There is no disturbance of bowel action.

Signs

1. The general condition remains good as a rule. The patient has a moderate tachycardia and is apyrexial. Shock is not usually a feature of this condition.

2. On abdominal examination there is tenderness and guarding of the abdominal muscles, particularly marked on the side on which the torsion has occurred. Rebound tenderness may be associated, but there is no free fluid in the abdomen, nor are the bowel sounds altered.

3. Vaginal examination reveals marked tenderness in all fornices and tenderness on movement of the cervix. A tense, cystic swelling will be palpable on the affected side in most cases.

4. Special investigations are not generally very helpful, although the ESR is usually raised and there may be a leucocytosis.

Abbas[19] suggested that colpopuncture and aspiration of the pouch of Douglas will yield serosanguinous fluid and that this should suggest the diagnosis. However, in most cases the necessity for exploring the abdomen will render this investigation unnecessary.

Differential Diagnosis

Conditions entering the diagnostic arena, from which tubal torsion will have to be distinguished, include renal colic, ectopic pregnancy, twisted ovarian cyst, pelvic infection, acute appendicitis, mesenteric lymphadenitis, intussusception and strangulated hernia.

TREATMENT

It is feasible that a torsion may occur and subsequently correct itself. The patient will then complain of transient lower abdominal pain and no definite diagnosis will be made. However, this concept cannot govern the surgical approach to the problem, and where the diagnosis is entertained and the indications are present for a laparotomy, this should be performed without undue delay, for if the torsion is allowed to persist unrelieved, gangrene of the affected adnexa will result. Thus if there is any doubt, operative intervention is indicated, and there is in fact a disadvantage if operation is delayed, in that conservative surgery as recommended by Bonney[20] may not be possible.

At operation the problem should be approached in the same light as intestinal torsion, and after correction the affected organ should be given time to recover and its viability should be assessed. If conservation of the affected adnexa is both desirable and possible, conservative surgery[20] is the treatment of choice. Here the inferior surface of the tube is sutured to the round ligament by one or two interrupted atraumatic sutures, and the ovarian ligament is shortened by suture to the uterus.

Should the affected organ not be viable, salpingectomy, salpingo-oophorectomy or total hysterectomy may be the operation of choice depending upon the particular conditions prevailing at the time. The decision to remove or conserve the ovary must be made at operation, and particularly in the younger age group every effort towards conservation should be made.

SUMMARY

1. Torsion of the fallopian tube is discussed, and an illustrative case history quoted.

2. The aetiological theories and the factors predisposing to this condition are outlined, and another possible predisposing factor is mentioned.

3. The symptoms and signs are reviewed.

4. The treatment is outlined and it is pointed out that because of its rarity and non-specific clinical picture, the condition is seldom diagnosed pre-operatively. However, early diagnosis is facilitated by a constant awareness that this condition does occur, and will lead to earlier treatment. With earlier treatment conservatism will be possible in a

higher proportion of patients, particularly where the ovary is involved.

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