

PARAVAGINAL HAEMATOMATA

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Together with many other gynaecological conditions which are often classified as 'minor', paravaginal haematomata have, in the past decade, fallen into relative obscurity. The main reason for this state of affairs is that the supervention of sepsis, previously a major complication, has, with the advent of antibiotics, become relatively easily surmountable and is no longer dreaded. In spite of this the treatment of haematomata is by no means standardized or clearly established and with this problem in view 14 case histories have been reviewed, together with the literature, in an attempt to assess what form of treatment provides uniformly good results.

Haemorrhage into the paravaginal soft tissue with subsequent haematoma formation is not uncommon and it is sometimes a serious complication in obstetrical practice. It is not generally appreciated that this condition is an important contributor to puerperal morbidity and thus to delayed convalescence. This, together with the fact that the condition is not obvious unless specifically looked for, results in the diagnosis being missed in a large number of cases. Rueff, in 1554, described the first case recorded in the literature, but not until 1830 was a detailed study of the condition undertaken by Beneux¹ and his description was remarkably accurate, even by present day standards. A number of papers on the subject have been published since, the most comprehensive being that by Williams² in 1915.

Classification

The classification may be made in general terms, or based on anatomical considerations. An anatomical classification is more satisfactory than a general classification.

General. 1. Associated with pregnancy and labour, (a) before delivery, and (b) puerperal.

2. Occurring in the non-pregnant female, usually as a result of trauma.

Anatomical. 1. Paravaginal (Fig. 1). (a) infralevator,

(i) perineal, and (ii) labial; (b) supralevator (Fig. 2).

2. Intraligamentous—usually associated with rupture of the uterus.

3. Retroperitoneal.

4. Any combination of the abovementioned groups.

Incidence

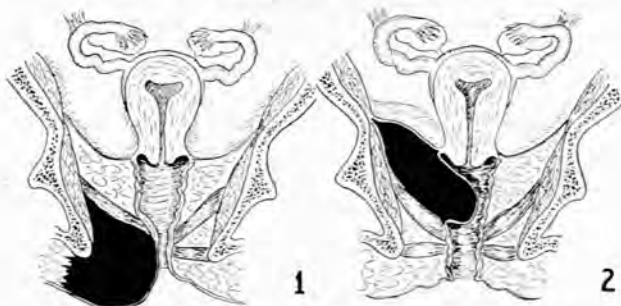
The puerperal variety is the commonest, the incidence being variously estimated as 1 in 1,500—2,000,² 1 in 4,000³ and 1 in 135.⁴ It is impossible to assess the true incidence because many small tumours pass unnoticed. In all probability it is in the region of 1 in 1,500—2,000.

Anatomy

The paravaginal space is that division of the pelvic connective tissue which extends from the vagina to the obturator fascia. It is continuous with the paravesical, paraarectal and parametrial spaces. It follows that any collection of fluid may spread from one compartment to the other. A venous plexus surrounds the vagina, being most prominent along its lateral aspects, because of the condensation of the vesico-vaginal and recto-vaginal fascia. One or more vaginal veins issue from its upper end on both sides and terminate in the hypogastric veins. The vaginal venous plexus intercommunicates with the inferior and middle haemorrhoidal veins and also with the inferior vesical plexus. This entire communicating venous system is tremendously engorged in pregnancy and it is the rupture of one or more of these veins in the vaginal plexus which leads to the formation of a haematoma. The levator ani muscles divide the paravaginal space into supralevator and infralevator fossae. The haematoma is typically confined to the upper or lower compartment, although a very large haemorrhage can disrupt the muscular barrier.

While we are primarily concerned with the paravaginal type of haematoma, it is as well to remember that any fluid effusion into connective tissue tends to track along the natural planes of cleavage of fascia. When this process occurs in the supralevator fossa, the blood tumour may spread into or below the broad ligament, the perivesical space, or beneath the vesico-uterine fold of peritoneum. These haematomata tend to dissect under the peritoneum and may extend anteriorly under the inguinal ligament or posteriorly to the perirenal or subdiaphragmatic spaces.

The time of appearance of these haematomata varies greatly. They usually occur immediately after delivery or trauma but may require not only hours, but days and even weeks for their full formation. The longest interval recorded between delivery and diagnosis is 14 days.⁵



Figs. 1 and 2. Infralevator and supralevator haematomata.

Aetiology

The primary factor in the causation of this condition is rupture of a blood vessel, usually a vein, and although often no specific aetiological factors can be identified, a number of possible conditions and circumstances have been postulated which might have a bearing on the formation of these tumours:

Excessive trauma during childbirth. The majority of these lesions occur in primigravidae, 59%⁶ in one series and 76%⁷ in another. This has been cited as a factor in favour of trauma being a common aetiological factor. However, since these haematomata occur in short and uncomplicated labours this cannot be the only explanation of their causation.

Improper haemostasis. In order to prevent the occurrence of a haematoma it is of importance, when suturing an episiotomy or perineal tear, that bleeding is arrested and that adequate attention be paid to the proper apposition of the skin edges.

Pressure necrosis of the affected vessels is thought to be the responsible factor in delayed haematoma formation. The fact that these lesions occur with short or average labours and with average or small-sized babies, and that they may be associated with breech presentations where the vertex passes through the pelvis fairly rapidly, indicates that pressure is not always the operative factor.

Pre-eclampsia is said to predispose to paravaginal haematomata because of vascular changes. The lesions are thought to be local manifestations of the pre-eclampsia, analagous to the haemorrhages which occur in the uterine wall in a concealed accidental haemorrhage.⁸

Blood dyscrasias. Interference with the clotting mechanism is said to be the operative factor increasing the incidence of these haematomata. An example given by Lyons⁹ is afibrinogenaemia.

Varicosities of the vulval area are associated with an increased incidence of paravaginal haematomata.

Vigorous uterine massage in the treatment of post-partum haemorrhage is incriminated as an aetiological factor by Samuelson.⁷

Prolonged labour, particularly of the second stage, and large babies have been cited as factors causing haematomata.

Trauma, other than during childbirth, in both the pregnant and non-pregnant state is a common aetiological factor.

Diagnosis

The diagnosis is not as a rule difficult provided that the vulval and perineal regions are inspected and a rectal examination performed where indicated. The common reason for missing many of these lesions is that pain in these areas is expected after delivery and therapy is prescribed before ascertaining the cause of the pain. The alert will, however, observe that the pain is often severe, even excruciating. Pain is a prominent feature in larger tumours and is often likened to something tearing. It is not relieved by opiates. The sudden appearance of a tense elastic mass, blue in colour, tender, and encroaching on the vagina in the infralevator variety, is not often missed (Fig. 3). Rectal examination will show a similar mass at a higher level should the supralevator region be affected. A persistent low-grade fever is often present. *Shock* and *anaemia* are features found in large haematomata, particularly in those which have extended retro-peritoneally. Anorectal tenesmus



Fig. 3. Tense mass in infralevator haematoma.

results from extension into the ischio-rectal fossa. Urinary retention may be due to extension of the mass into the paravesical space. Reflex ileus, pain in the thighs and swelling of the lower limbs due to compression of the venous drainage to the legs, are rarely encountered.

TREATMENT

The earliest recorded treatment for this condition was the conservative or expectant approach. The only indication for incision and drainage was superimposed infection. The next step in the evolution of therapy was an attempt to avoid sepsis by incision and drainage as soon as thrombosis was complete, i.e. after 48 hours. At the present time there is no conformity of opinion regarding the type of treatment which consistently yields good results. The forms of treatment which have been utilized are briefly outlined as follows:

A. Preventive

1. *Before delivery.* (a) Adequate antenatal care with particular attention to the correction of anaemia, and (b) early treatment of pre-eclampsia and recognition of the blood dyscrasias.

2. *At delivery.* (a) Avoidance of excessive trauma to the maternal soft tissues, and (b) adequate haemostasis and repair of tears and episiotomies.

3. *Post-partum.* Becoming 'haematoma conscious'. This includes early diagnosis and prevention of spread. Where a suspicion of this condition arises, a thorough perineal and rectal examination must be performed.

Preventive treatment applies only to the haematomata which occur during pregnancy.

B. Active

1. *During labour.* If a haematoma forms and increases rapidly in size, immediate evacuation is the treatment of choice. Haemostasia must be secured rapidly by the most suitable technique.

2. *After delivery or in the non-pregnant state.* (a) Expectant. The measures recommended include: (i) Antibiotic therapy, (ii) ice packs to the affected area, (iii) adequate antisepsis, (iv) compression with binders and T. bandages, (v) sedation with morphia or pethidine, and (vi) elevation of the foot of the bed.

Mengert¹⁰ considers that this form of treatment gives the best results; incision is reserved for those cases where infection becomes superimposed.

(b) Surgical—Important points to observe are: (i) Adequate drainage through an incision placed in the vaginal mucosa, (ii) evacuation of blood clots, (iii) adequate haemostasis by ligation of bleeding points, mattress sutures or packing of the cavity, (iv) counter pressure can be made by packing the vaginal canal or even the rectum, (v) replacement of blood loss where indicated, and (vi) antibiotic therapy.

Other therapeutic suggestions include:

1. *Aspiration* through a wide-bore needle. The disadvantages of this type of treatment are that blood clots cannot be evacuated and that there is the danger of introducing infection.

2. *Haemostatic gauze* sutured into the wound. A foreign body is introduced into the wound and may precipitate an infection.

3. *Enzymatic debridement* of the wound using streptokinase and streptodornase.¹¹

It is well to remember that exploration of the abdomen and even hysterectomy may become necessary where the haematoma extends above the cardinal ligaments or where spread of the haematoma cannot be checked.

Assessment of the Types of Treatment

In an attempt to assess which types of treatment advocated yield the best results, 14 cases which occurred during the years 1954-56 (inclusive) were analysed. These were all cases admitted as emergencies to the gynaecological wards of Groote Schuur Hospital, Cape Town.

A. Nine cases were associated with pregnancy; of these 5 occurred after birth. The histories indicated normal vertex deliveries. Large perineal lacerations were present. In 4 cases attempts at suture had been made before admission to hospital. The haematomata were present in 4 pregnant patients. The period of gestation in these varied from 12-28 weeks. Two of these had arisen spontaneously, the other 2 were due to direct trauma.

B. Five cases were not associated with pregnancy; 4 were due to direct trauma and one had arisen spontaneously.

In Table I a summary is given of the morbidity and duration of stay in hospital.

TABLE I. MORBIDITY AND DURATION OF STAY IN HOSPITAL

Type of Treatment	No. of cases	Hospitalization (days)	Morbidity
Incision and drainage ..	9	6	1
Conservative	5	11	3

Case Report

A very interesting case which prompted this enquiry was that of a 45-year-old Coloured female who was admitted to hospital with a very large left-sided infralevator haematoma. Conservative treatment was instituted because she was considered a poor anaesthetic risk. After a period of 9 days the haematoma had not decreased in size. Incision under local anaesthetic was undertaken, clots were evacuated and an acriflavine-emulsion plug was inserted into the cavity. The plug was removed on the following day. Five days later the patient was discharged since the wound required no further dressing.

The results in the small series of cases quoted above would appear to support the statement made by Samuelson⁷ that 'primary operation and drainage is followed by less infection, shortened hospitalization and more rapid healing than conservative treatment. Early ambulation is not contra-indicated'. The statement that early ambulation is not contra-indicated is important because in Samuelson's series where conservative treatment was employed 2 cases developed thrombo-embolic and respiratory complications.

Prognosis

The maternal mortality in the paravaginal variety is stated to vary between 0.9%-21%⁶ and in the retroperitoneal variety 56%-79%⁹. These figures apply to the pre-antibiotics and pre-blood transfusion era and the figure now approximates 0%¹².

The morbidity is estimated at 37% and the average duration of stay in hospital at 7-8 days.

SUMMARY

(a) The types of genital haematomata are discussed and their aetiology, symptomatology, diagnosis and treatment reviewed.

(b) The importance of early diagnosis is stressed. Where unexplained severe ano-genital pain, ecchymosis or urinary retention occur and rectal examination is performed, the diagnosis will never be missed.

(c) Primary incision and drainage appears to be the treatment of choice from the point of view of period spent in hospital, morbidity and early ambulation.

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