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FATAL SPONTANEOUS HEMATOMA OF THE VULVA IN A PRIMIPARA AT 36 WEEKS GESTATION BEFORE ONSET OF LABOR

PETER H. MULDER, M.D.

The occurrence of this condition which was described by Williams¹ as a "Tumefaction resulting from the escape of blood into the connective tissue beneath the skin covering the external genitalia", is an infrequent complication of pregnancy. This condition was first described by a Frenchman named Deneux² in 1830. DeLee³ describes it as "blood vessels, particularly the veins in the pelvis which may burst during pregnancy, labor or in the post-partum period".

This 23 year old married white primipara was admitted to Wayne Hospital, Greenville, Ohio on February 1, 1953.

The chief complaint was acute hemorrhage into the left vulva. The patient was carried into the hospital by her husband as an emergency, in severe shock. This occurred suddenly at home at noon on a Sunday, February 1st, following what the patient described as "something coming out of her". The husband thereupon looked at the perineum and discovered an acute discoloration, bluish in nature, in the left labia.

The present illness may have begun as early as four days before admission when the patient first noted a slight twinge of pain in her left hip. This subsided spontaneously and was not thought of again. On the day before admission, following an all day journey by automobile over parts of this rural county on the occasion of the death of a grandmother, the patient arrived home late Saturday night and noticed sharp, severe, short, recurrent cramp-like pains in her lower abdomen. This cramping persisted throughout the night, interfering with sleep.

The patient was seen the following morning, the day of admission at approximately 9:00 a.m. The complaint was as described above, that is — sharp, severe recurrent cramp-like pains in her lower abdomen, and the first impression was that of premature labor. However, on further examination, it was found that the uterus was not partaking in any contractions. The lower abdomen showed moderate tenderness on palpation, particularly in the neighborhood of the bladder. It was the impression at the time that the presenting part of the fetus, which was felt to be the head, was somewhat lower than usual for a primipara. The external genitalia showed no evidence of abnormality. The cervix was not dilated, nor effaced.

The patient also complained of a "bearing down" feeling and "feeling of pressure in the neighborhood of the bladder". There was no burning or pain with urination and there was no definite hesitancy or inability to pass urine. There had been the usual bowel movement the day before. There had been one episode of nausea and vomiting, approximately three hours before this examination.

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The diagnosis was not established and the patient and her husband were instructed that if any change occurred, they should notify us immediately.

The past history was as follows: She had her last menstrual period May 22, 1952. The expected date of confinement was February 28, 1953. She was a gravida I, married approximately one year. The history of the present gestation was not remarkable. There was a moderate nausea during the first trimester, but further history by systems was not remarkable. Her prenatal physical examination on September 6, 1952 showed her height to be 5 ft. 1 in. and her weight to be 109 lbs. and no physical abnormality. There were no varicosities of the vulva nor of the legs. Serology drawn on the 9th of September, 1952 showed negative Wasserman and positive RH factor. The last pre-natal visit at 32 weeks gestation showed a gain of weight to 127-½ lbs., a blood pressure of 110/70; height of the fundus to be 22 cm., position of the fetus back to the right and occiput presenting; fetal heart tones 132 in RLQ and urinary findings within normal limits.

The patient was admitted to Wayne Hospital, Greenville, Ohio at 11:50 a.m. Sunday, directly to the labor room. Upon first examination, the patient was found to have a large, exquisitely tender, bluish swelling of the left labia. Directly thereafter, a spontaneous rupture of this hematoma occurred through the medial portion of the labia majora. Profuse, bright red hemorrhage occurred. Immediate measures were instituted to combat the hemorrhage and shock including a blood transfusion and analgesic medication. Consultation was held immediately with four other staff general physicians, two of whom perform major surgery routinely.

The physical examination revealed a well developed, well nourished, white female in acute distress with pain in the perineum and a bulging blue left labia majora. Blood pressure was 95/60; pulse 120. Skin was markedly pale and sallow. Patient was listless and exhausted. Eyes, ears, nose and throat were not remarkable. The neck was negative except for slight enlargement of the thyroid. The chest showed no abnormality; the heart and lungs were normal. The abdomen showed the usual 36 week ovoid uterus, not undergoing any contractions, and not unusually tense. The liver was not enlarged. Marked tenderness was present throughout the lower abdomen over the bladder and in both adnexal regions. The perineum showed gross bright red hemorrhage from at least two apertures on the medial surface of the left labia majora. The skin over the left labia was tremendously stretched and bluish in discoloration, and beneath it extended a large, soft mass fluctuant in nature from the pubis to the perirectal tissue on the left. This area was exquisitely tender to touch. The extremities were apparently normal and no evidence of varicosities or edema was present.

The operative findings were as follows: An incision was made into the left vulva where many clots were evacuated and no single definite bleeding points were recognizable. Through and through mattress sutures were placed in the area of this massive hematoma and then a snug vaginal pack was inserted. Thereupon, because of the embarrassment of the fetal heart tones, the abdomen was prepared immediately

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and a routine Caesarian section was performed. The pelvis was inspected carefully but there was no evidence of any active hemorrhage in either broad ligament or as far as could be seen in the retro-peritoneal spaces. The baby was dead upon delivery and weighed 4 pounds and 1-½ ounces. The anesthetic by choice was a combination of nitrous oxide cyclopropane and oxygen. The immediate post-operative condition was poor. Supportive therapy was continued but post-operative course was rapidly downhill. The patient never recuperated from her shock, in spite of four transfusions and she died 20 hours after admission.

A post mortem examination was done and revealed a large retroperitoneal extension of recent hemorrhage back of the bladder and uterus up along the left ureter and half way to the kidney. Microscopic examination of sections from the liver, spleen and kidney revealed no significant abnormalities.

INCIDENCE

The American literature is comparatively barren of information on this subject. No report of a case of hematoma of the vulva occurring before labor could be found in a brief resumé of recent literature up to 1953. DeLee³ stated that hematomas of all types occur in approximately one in four thousand labors, and that "in a total pathologic work of over 70,000 routine cases, only 7 cases of large hematomas came under our notice". Lubin and Horowitz⁴ in a discussion of post partum hematomas state that "*rarely* the blood mass may appear late in pregnancy". Hamilton⁵ in a review of the literature in 1940 found a total of only one hundred fifty-six reported cases of post-partum labial and para-vaginal hematomas. Crossen⁶ states it is a rare occurrence to find a case of a hematoma of the vulva in advanced pregnancy or labor in which the swelling may burst and result in fatal external hemorrhage or of a patient bleeding to death without an external opening being evident. Williams found such tumefactions to occur one in fifteen hundred to two thousand cases. In 1904, in 31 cases of sub-peritoneal hematoma which he collected, the mortality was 56%. It is interesting to note that more than 60% of the cases occurred in primipara and 71% after spontaneous labor. It is seen that the report of cases occurring previous to labor is remarkably infrequent.

LOCATION

Davis states that "generally the site of the effusion is the lower vagina or the vulva or both. The swelling usually encroaches upon the vagina and the rectum. Rarely the ruptured vessel is above the deep pelvic fascia, the effusion occurring largely in the subperitoneal tissues. In these latter rare cases, the swelling may be manifest in the upper vagina, but it is prone to extend far upward beneath the peritoneum, where it may make a palpable abdominal mass above Poupart's ligaments or in the false pelvis. The loss of blood in this type of case may be so great as to prove fatal".

Dr. Lee states that the location may occur "under the skin of the vulva, around the vagina, under the broad ligaments and in the broad ligaments". If it occurs "below the levator ani-muscles and the deep pelvic fascia, it will distend the peritoneum

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and dislocate the rectum and anus. If around the vagina, it may cause obstruction to delivery. If at the base of the broad ligament, it may extend up into the false pelvis under Poupart's ligament. If behind the broad ligament it may dissect up to the kidneys retro-peritoneally". Crossen points out that the burrowing of extravasated blood in the loose subcutaneous tissues acts to extend the hemorrhage by rupture of neighboring vessels. This is apparently what may have occurred in the case reported here.

ETIOLOGY

There is considerable difference of opinion as to the theoretical explanations of the factors causing hematoma formation. DeLee believes the first major cause is injury. He describes the trauma of spontaneous labor or use of forceps in delivery as the most frequent cause. The second most frequent cause is pressure necrosis, that is, the prolonged pressure of the presenting part of the fetus on vessels in the neighborhood of the vagina, with consequent production of a necrosis, and further dissolution of tissue. Perhaps this could have been a factor in the case reported herein.

DeLee further believes that varices are not a very substantial etiology. To quote him, he states "Varices are said not to favor hematomas".

In contrast to that, Hamilton quotes Vaux and Bland, who "mention the vascularity of the pelvic tissues at the time of delivery with the occurrence of varicosities of the pudendal veins as an etiological factor". Furthermore, Hamilton states that "in our series there were no varicose veins noted in any of the cases".

Crossen believes that "pregnancy, pelvic tumors and other conditions that increase vascularity of the parts predispose to hematomata. The exciting cause is injury that starts subcutaneous bleeding". He further states, "varicose veins of the vulva only rarely give rise to troublesome symptoms. The danger in these cases is that severe hemorrhage may take place or a large hematoma forms from slight injury or from spontaneous rupture of a varicose vein".

Williams states "the condition usually follows an injury to a blood vessel during the act of labor without laceration of superficial tissues, and may follow spontaneous as well as operative delivery". He too believes that "sloughing of a vessel which had become necrotic as a result of prolonged pressure during labor" may be a cause for hematoma formation.

Davis states that, "it is usually associated with the pre-existing varicosities of local blood vessels. The tumor is very generally due to the injury of a blood vessel during labor, spontaneous or operative without laceration of the superficial tissues."

Lubin and Horowitz believe that toxemia of pregnancy and the consequent blood dyscrasias associated with vitamin deficiencies particularly K, contribute to rupture of vessels in cases of post partum hematoma.

SIGNS AND SYMPTOMS

The first symptom of hematoma of the vulva according to DeLee is — "intense

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pain, and intolerable pressure on the rectum and bladder." Davis points out that "the sudden onset of swelling with pain and a feeling of tearing and a tender, soft, fluctuant, purple skin are the earliest symptoms". Williams stated that if the tumor is large, it may cause discomfort by its mere size, but it gives rise to great suffering which becomes more intense the more rapidly it is formed, as a result of the tearing and stretching of the tissues.

The signs are dependent upon the location of the hematoma. If near the surface of the vulva, a sausage-shaped tumefaction may be recognizable. On the other hand, a rectal or vaginal examination may show an encroachment upon the lumen of one or the other of these parts. Later the skin or the vaginal mucous membrane covering the tumor may burst and the patient may bleed to death. However, if external rupture does not take place and if the hematoma burrows a great distance, signs of acute severe anemia may become pronounced before external hemorrhage appears. Furthermore, if the condition extends in a retro-peritoneal fashion, the diffused blood may form a tumor palpable above Poupart's ligament or it may make its way into the iliac fossa and gradually invade the renal region and eventually reach the lower margin of the diaphragm. "Paravaginal hematoma and hemorrhage within the broad ligaments are quite easy to diagnose, as a rule. Retro-peritoneal hemorrhage, progressing more slowly than intraperitoneal hemorrhage, and more inaccessibly situated, is probably the most difficult of all these conditions to diagnose".

TREATMENT

Davis states that "small hematomas should be let alone, while often the larger tumors may be best treated also expectantly. If, however, progressive increase in size and continued bleeding occurs, immediate incision and evacuation of the cavity are indicated. Rare cases of subperitoneal variety may when extensive require laparotomy for access to the bleeding site". Lubin and Horowitz in their post partum cases believe that the mass should be opened widely, preferably through the vaginal mucosa. DeLee simply states that during labor, cervical, vaginal and vulval varicosities requiring quick treatment may be best cared for by suture or firm tamponade. Hamilton in his monumental work on post partum hematomas states that "treatment includes first, earliest possible diagnosis; second, incision, preferably through the vaginal mucosa; third, evacuation of clots; fourth, loose packing of the cavity with tight packing of the vagina; fifth, supportive therapy, directed at overcoming shock".

Crossen states that "the open hemorrhage from the genitals should be stopped by packing, or by sutures, or by forceps or by ligature of bleeding tissue en masse, as indicated by the nature of the hemorrhage. If the swelling may burst and fatal external hemorrhage occur, the affection should be treated by operation".

PROGNOSIS

As has been pointed out, mild cases of small hematoma carry a good prognosis. However, Williams pointed out a 56% mortality in the sub-peritoneal variety. Hamilton states that every obstetrician from time to time has prevented the occurrence of these

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hematomas, when commencing to do a perineorrhaphy, by noticing a small hemorrhage in one or the other side which he sutured. It would appear that if this complication is recognized early and actively treated, the mortality rate can be materially improved". He further points out that "another interesting observation is that in our series of cases handled in this manner on subsequent examination, there was practically no residual distortion of tissue and three of this series have subsequently delivered with no pathology referable to their previous complaint".

In summary — this is a review of a case of an uncommon complication of pregnancy — a fatal spontaneous hematoma of the vulva. It was evidently hidden injury to the pelvic structures in an apparently normal, eight month gravid primipara, with sudden massive subcutaneous and retroperitoneal hemorrhage, which could not be controlled.

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