

PATHOLOGY OF THE UTERUS

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Significant postpartum hemorrhage may occur immediately after delivery, or may be delayed weeks or months. In either case, a Cesarean or later postpartum hysterectomy may be life-saving. The uterus will normally be sent for laboratory examination. To facilitate a useful surgical pathology report, the pathologist must be given details of the antepartum course and delivery. Considering how uncommon these specimens are, direct communication between pathologist and clinician is recommended. The aim of this chapter is to provide a structured approach to the analysis of the specimen, in order to permit a clinically relevant and pathologically sound diagnosis.

CLINICAL CORRELATION

The parity and gestation should be provided. Any abnormality of the clinical course, in particular pre-eclampsia or polyhydramnios, may be of relevance. Magnetic resonance imaging (MRI) may have been performed for fibroid, placenta creta or congenital abnormality and these images should be reviewed. A history of the use of instruments such as forceps is important. The clinical appearance of the uterus at operation may provide valuable information on atony. Any therapeutic measures undertaken such as uterine massage or compression suture should be noted, along with transfusion and fluid replacement. A description of the surgery will help the pathologist to interpret the tears and sutures that characterize these specimens. The patient's postoperative condition will help to guide sampling in the event that amniotic fluid embolism is a consideration. Finally, the placenta must also be available for examination.

GROSS EXAMINATION

Photography is essential at each step of the dissection, with notes as to what each picture is intended to show. Without a clinical input, however, much effort may be wasted on documenting features of little relevance at the expense of missing more important ones. A detailed macroscopic description of sutures, tears, etc. is important and may be medico-legally relevant. Our approach is to examine the specimen in its fresh state, with photography, and then to open the specimen, avoiding tears and sutures, to permit fixation and further examination. It may be opened laterally, but more information can be gained by complete longitudinal anteroposterior section of the uterus. The approach should be modified to suit the circumstances as predicted from the clinical information. A useful technique that allows good exposure and photographic demonstration is the placing of two parallel complete longitudinal anteroposterior sections about 2–3 cm apart on either side of the mid-line. How well the uterine cavity has compressed is immediately apparent, contraction band formation can be demonstrated, and blood clot and placental tissue fragments can be assessed in the lumen.

In the immediate postpartum period, the uterus is characteristically large. It will weigh 700–900 g and will have substantially reduced in size and volume from its antepartum state. Clamp marks on the broad and round ligaments should be inspected for residual hematoma, remembering that the pathology may be outside the clamp. In the fresh specimen with intact vessels, it may be possible to perfuse the vasculature for contrast angiography or vascular casting¹.



Figure 1 Fixed uterus showing a large anterior and right-sided diverticulum originating in a Cesarean section scar. The specimen was sutured at operation, but placental villous tissue can be seen adjacent to the suture



Figure 2 Anteroposterior section of uterus from Figure 1 showing anterior placenta creta

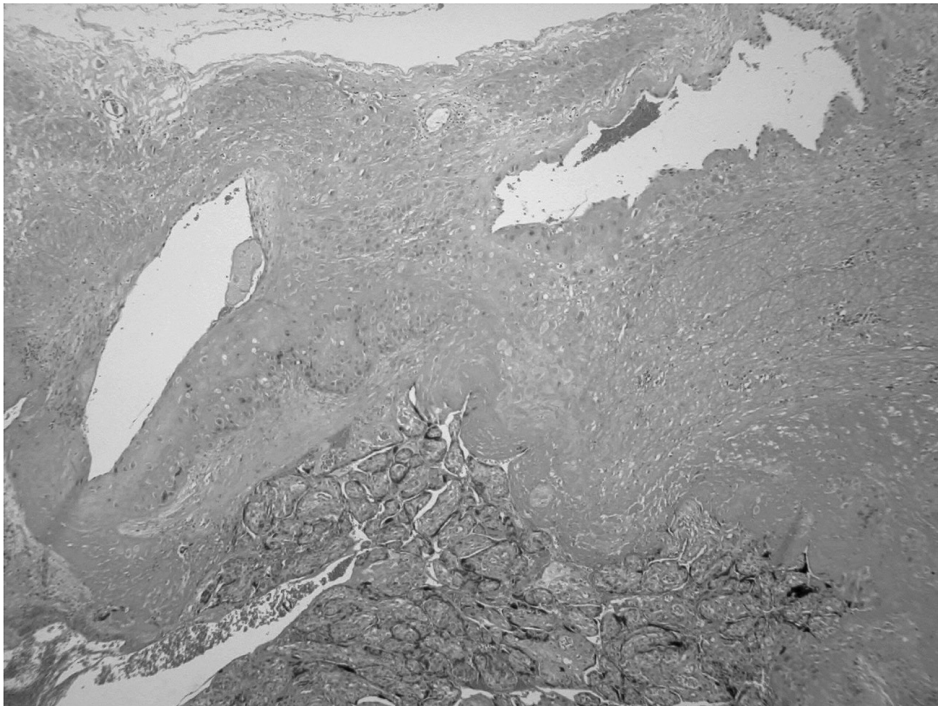


Figure 3 H/E section of lower uterine segment showing placenta creta and large vessels in thin myometrium

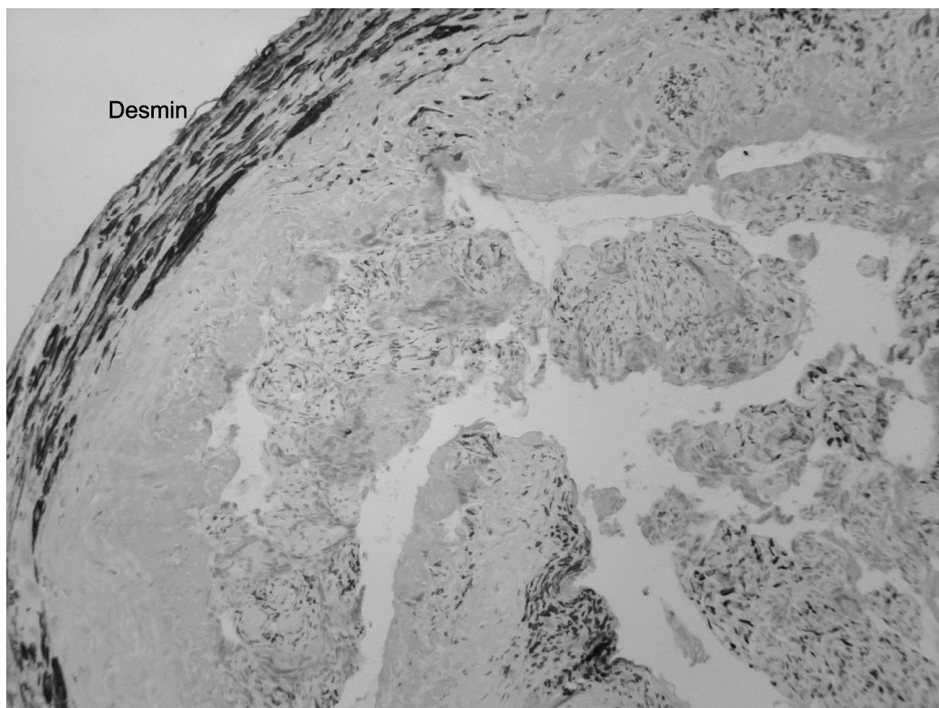


Figure 4 Immunohistochemical stain for desmin accentuates the thin myometrial fibers in scar



Figure 5 Right lateral endocervical tear at hysterectomy for postpartum hemorrhage

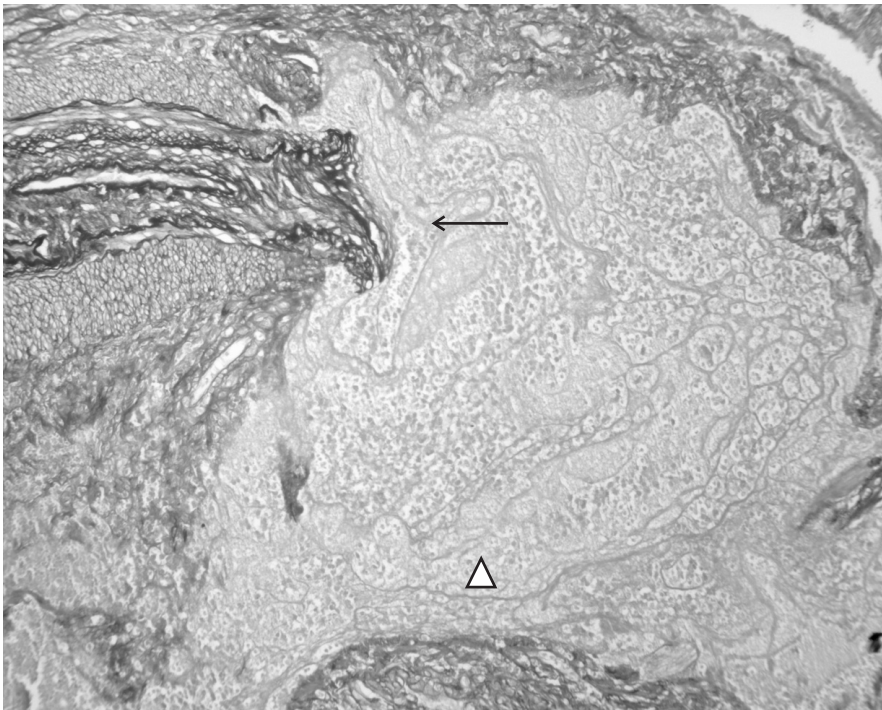


Figure 6 Elastin Van Geisson stain showing torn artery at apex of tear ($\times 10$). Arrow, torn elastic artery; arrowhead, thin fibrin blood clot