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Correspondence

Late postpartum haemorrhage caused by placenta accreta accompanied by acquired uterine arteriovenous malformation

Dear Editor,

A 32-year-old female, gravida 3 para 2 (two caesarean sections), presented to our hospital due to vaginal bleeding. She had undergone caesarean section 12 days previously. Preoperative ultrasound imaging showed a posterior placenta, whose inferior margin was 1.8 cm away from the cervical internal orifice (Fig. 1A). Intraoperative findings indicated that, most of the placenta was attached to the posterior wall of the uterus, with a wafer-thin lower margin fully covering the cervical internal orifice and reaching the lower segment of anterior uterine wall. The artificial separation of the placenta adhering closely to the uterine wall was exceptionally difficult. The patient experienced pain in hypogastrium and lumbosacral region postoperatively. Vaginal bleeding occurred 2 h prior to admission which resulted in approximately 500 mL of blood loss. Transvaginal ultrasound suggested that the lower segment of the posterior uterine wall featured inhomogeneous echogenicity and several tubular anechoic areas were found inside, which indicated abundant blood flow signals (Fig. 1B). A fluid sonolucent region of variable shape was observed in the posterior wall protruding into the uterine cavity (Fig. 1C), containing a flow of thin and hypoechoic light spots and was filled with blood flow signals (Fig. 1D). The blood flow spectrum of arteriovenous fistula (Fig. 1E) was detected. The sonolucent region connected to the muscular layers of the posterior uterine wall. Total hysterectomy was performed after detailed communication with the patient's family regarding her condition and procedural risks. The uterus was dissected and observed postoperatively, which showed a soft honeycomb-like mass protruded towards the uterine cavity, with thickened and large blood vessels on the surface (Fig. 1F). Further pathologic examination indicated placental adhesion and accrete.

Multiple etiologies exist for late postpartum haemorrhage, such as retained placenta, soft birth canal injury, coagulation dysfunction, and infection or rupture of C-section incision. Placenta accreta with acquired arteriovenous malformation of the uterine is a relatively rare cause. The patient's history of two caesarean sections resulted in damages to the endometrium, thereby leading to abnormal placental development and hypoplasia of the lower placental margin (as shown by its extremely thin and membranous pattern). In this circumstance, the lower margin could not be differentiated from the uterine wall in ultrasound examinations. Therefore, the junction between the portion with normal thickness and the extremely thin part had been incorrectly identified as the lower placental edge, and the condition was prenatally misdiagnosed as low-lying placenta. Placenta accreta usually occurs at the incision line of the lower segment of anterior uterine wall. In this case, placenta accreta was localised on the lower posterior uterine wall. The characteristic manifestation had not been revealed in prenatal ultrasound imaging as the foetus in last gestational weeks compressed and covered the posterior uterine wall. Therefore, for those with a history of multiple intrauterine surgeries, ultrasound examination does not necessarily reveal the accurate placental position. Particularly for patients with placenta lower in the uterus during early pregnancy and unsatisfactory findings of ultrasonography performed in the last gestational months, combination of magnetic resonance imaging with other approaches for assistance in diagnosing low-lying placenta and placenta accreta is advised [1].

Uterine arteriovenous malformation (UAVM) is defined as abnormal shunts between uterine arteries and veins, without an intervening capillary network. Acquired UAVM is primarily secondary to surgical injuries, which may lead to life-threatening bleeding [2]. In this case, acquired arteriovenous fistula that developed after caesarean section was closely associated with prenatal placenta accreta and the intrauterine procedure. Interventional vascular embolisation and surgery are the primary

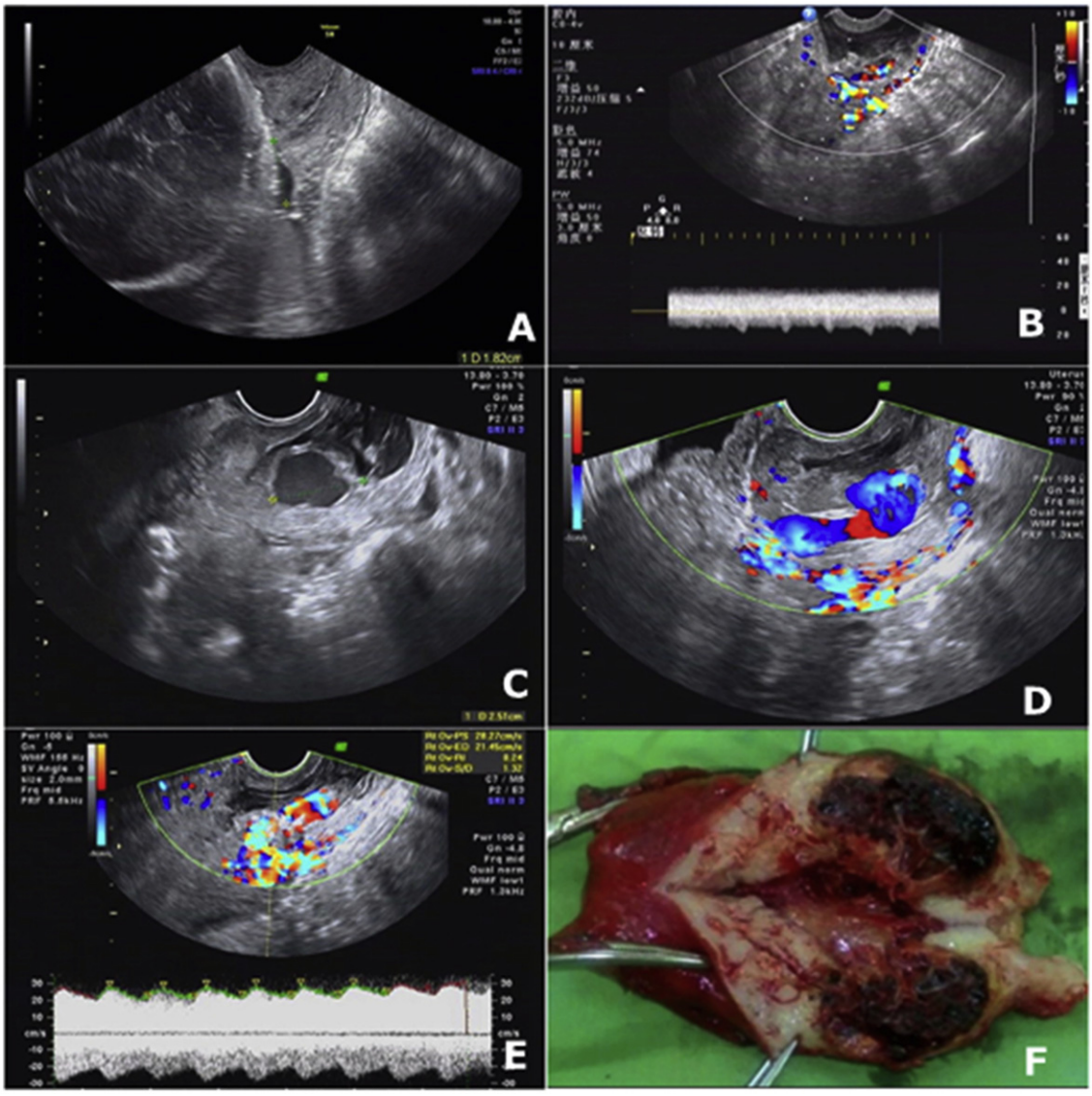

Fig. 1. Prenatal ultrasound showed a posterior placenta, whose inferior margin was 1.8 cm away from the cervical internal orifice (A). Postpartum ultrasound suggested that the lower segment of the posterior uterine wall featured inhomogeneous echogenicity and several tubular anechoic areas were found inside, which indicated abundant blood flow signals (B). A fluid sonolucent region of variable shape was observed in the posterior wall protruding into the uterine cavity (C), containing a flow of thin and hypoechoic light spots and was filled with blood flow signals (D). The blood flow spectrum of arteriovenous fistula (E) was detected. The uterus was dissected and observed postoperatively, which showed a soft honeycomb-like mass protruded towards the uterine cavity, with thickened and large blood vessels on the surface (F).

therapies for symptomatic acquired UAVM [3]. Clinicians should closely monitor the postoperative condition of patients during follow-ups and preventing the occurrence of serious complications.

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