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Sonographic diagnosis of a non-previa placenta accreta

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ABSTRACT

An unusual case of placenta accreta diagnosed before delivery and managed conservatively is reported in a third-trimester pregnant woman with no past obstetric history. Ultrasound revealed a large echo-poor area where the decidual interface was absent. Uterine vessels immediately under and around the placental abnormal insertion site appeared dilated. In one area, where the myometrium could not be identified at all, the basal plate of the placenta appeared to float inside uterine vessels. A Cesarean section was performed at term and after partial delivery of the placenta a wedge resection of the accreta area was made. Brisk bleeding was controlled by rapid reconstitution of the myometrium. It is suggested that non-previa placenta accreta can be diagnosed antenatally in a low-risk population using gray-scale ultrasound imaging and enabling, in most cases, conservative management.

INTRODUCTION

Decidual basalis deficiency with deep attachment of the placental villi inside the myometrium is considered to be the primary mechanism of the development of a placenta accreta[1,2]. In theory, any previous endometrial trauma is a predisposing factor for the subsequent development of a placenta accreta, and a previous Cesarean section is most commonly found in the patient's history[2]. Women with an anterior placenta previa and a previous Cesarean section have a 20–30% risk of developing a placenta accreta during a subsequent pregnancy[1,2]. As this condition is associated with a 25% maternal mortality[2], there is considerable clinical interest in the potential of identifying placenta accreta before delivery.

Ultrasound features of placenta accreta on gray-scale imaging include an absent decidual interface between the placenta and myometrium and the unusual dilatation of the vessels under the placental implantation site[3,4]. Several authors have recently advocated the use of color Doppler imaging in the antenatal diagnosis of placenta accreta[5–8]. We report an unusual case of placenta accreta diagnosed before delivery and managed conservatively, and we discuss the use of color Doppler imaging in this context.

CASE REPORT

A 30-year-old woman was referred at 34 weeks of gestation because of unusual placental sonographic features suggesting a retroplacental hematoma. The patient had no past medical or obstetric history, her pregnancy had, until this point, been uncomplicated and she presented without any specific clinical symptoms. The fetal growth and anatomy were normal and the placenta was located anteriorly within the upper part of the uterine cavity.

Placental examination revealed a large echo-poor area occupying approximately 40% of the placental insertion site (Figure 1). The decidual interface was absent and in one area the myometrium could not be identified at all. At this level, the placenta appeared to float inside uterine vessels (Figure 1b). On gray-scale imaging, uterine vessels immediately under and around the placental abnormal insertion site appeared dilated (Figure 1c). The vascular nature of these features was confirmed with color Doppler imaging (Figure 2). The placental tissue was normal and centrocotyledonary spaces were identified, including the area of abnormal implantation (Figure 1d).

The diagnosis of placenta accreta was considered and the patient was notified. After extensive counselling she admitted having had an uncomplicated early pregnancy termination at the age of 16. An elective Cesarean section was performed at 38 weeks of gestation. Following delivery of the baby, a high-dose infusion of Syntocinon (100 U/500 ml) was commenced, such that partial separation of the placental margin occurred after 6 min. This was not accompanied by any bleeding, but the remainder (7 × 7 cm) of the placenta was accreta at the anterolateral

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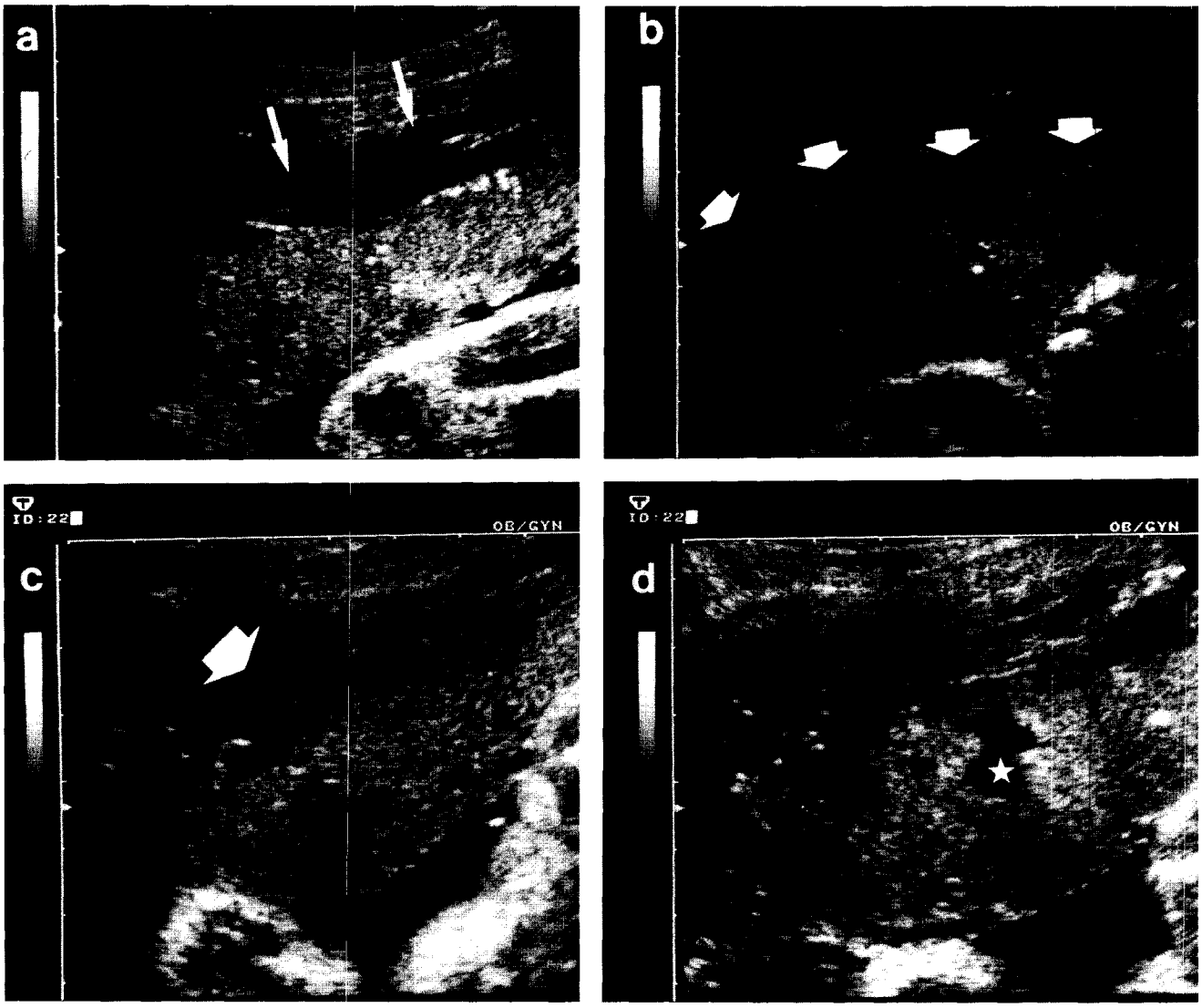

Figure 1 Composite sonograms showing: (a) the absence of decidual interface (arrows); (b) the area where the myometrium could not be identified and where the placenta appeared to float inside uterine vessels (arrows); (c) dilated uterine vessels under the placenta with absent decidual interface (arrow); and (d) a centrocotyledonary space (star) above the area of abnormal implantation

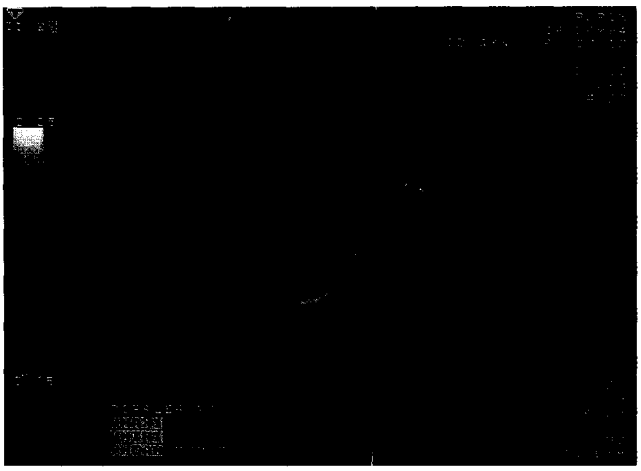

Figure 2 Color Doppler imaging at the level of the placental bed, demonstrating the vascular nature of the echo-poor areas detected under the placenta during the gray-scale ultrasound examination

margin. By a combination of blunt and sharp dissection, a wedge of tissue was removed from the area followed by brisk bleeding, which was controlled with rapid reconstitution of the myometrium and under-running of vessels, using vicryl sutures in a 'figure of eight' fashion. The estimated blood loss was 900 ml and the patient was transfused with two units of blood. The infant did well and the mother's postoperative course was uneventful. They were discharged on the 6th postoperative day. Histopathological examination of the wedge confirmed a placenta accreta of the increta type that infiltrated the myometrium to within 3 mm of the serosa.

DISCUSSION

Myometrial infiltration by placental tissue (placenta increta) is usually asymptomatic before delivery, whereas the presence of placental tissue beyond the uterine serosa

(placenta percreta) is often associated with a major prenatal complication such as uterine rupture or hemoperitoneum[1]. Therefore, placentas accreta of the increta type are rarely diagnosed antenatally and the patient's obstetric history is often the only indication that she is at risk for this pregnancy complication. In the present case, it was thought that elective Cesarean section would be in the best interests of mother and baby, because of the theoretical risk of uterine rupture during labor. Counselling had centered around the possibility of accreta and delivery of the placenta. The alternatives were piecemeal removal at Cesarean section, which usually commits the patient to hysterectomy, or ligation of the umbilical cord at the placental insertion, leaving the placenta *in situ* and ensuring that there was no significant bleeding from the placental bed before resuturing the uterus in the usual manner. This conservative management should include covering the postoperative course with antibiotics and methotrexate[4]. In these circumstances, extrusion of the partially absorbed placental tissue occurs within 6–10 weeks postnatally.

With the increasing rate of elective Cesarean sections in some developed countries, the incidence of the various forms of placenta accreta is increasing[2]. Endometritis, uterine curettage or adenomyosis are also possible predisposing factors for placenta accreta. However, in the majority of cases, the patient's history is noncontributory. Prenatal diagnosis of placenta increta and percreta by ultrasound have occasionally been reported in the literature[3–8]. Most authors have depicted placentas accreta that were also previa and, to our knowledge, this is the first antenatal description of a placenta increta not following a Cesarean section.

There have been four recent reports describing color Doppler imaging features in placenta accreta[5–8]. In all cases the placenta was previa and the patients have been previously delivered by lower segment Cesarean section. As in the present case, color Doppler sonography may highlight areas of increased vascularity with dilated blood vessels crossing the placenta and uterine wall[5,6]. Color Doppler imaging is particularly useful in the diagnosis of placental and cord tumors[9,10] and for the follow-up of gestational trophoblastic tumors[11]. Differential diagnosis of placenta accreta on gray-scale imaging includes retroplacental hematoma and idiopathic anatomic changes in the uteroplacental circulation[12,13]. The former usually appears as a hypoechoic mass under a hyperechoic 'infarcted' placenta and the latter is associated with a normal placental appearance and a continuous decidual interface. The features of the case described here, i.e. absent decidual interface with a normal placental echogenicity, were pathognomonic for placenta accreta. The presence of centrocotyledonary cavities above the area of deep placental insertion also suggests that the uteroplacental and intervillous circulations were maintained, excluding the possibility of a retroplacental hematoma[13]. Although color Doppler imaging confirmed the presence of dilated uterine vessels under the placental insertion site, we consider that, in most cases, gray-scale imaging should enable the prenatal diagnosis of placenta accreta to be made in a low-risk population.

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