CASE REPORT

Chorionic bump in a pregnant patient with a history of infertility

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SUMMARY

Chorionic bump is a rare condition in the first trimester of pregnancy. It appears as a bulge from the chorionic surface into the gestational sac. So far, there have been no ultrasound or clinical markers that can predict a difference in outcome.

We report a case of a pregnant woman with history of infertility, diagnosed in the first trimester with a chorionic bump. It disappeared spontaneously at 23 weeks of gestation. The pregnancy went well and she delivered a healthy baby.

The aetiology and clinical significance of the chorionic bump remains unclear.

BACKGROUND

Chorionic bump is a rare sonographic finding, in the form of an irregular, convex bulge from the chorionic surface that protrudes inside the gestational sac in the first trimester.¹

Literature on the chorionic bump is limited, and because of its low prevalence rate (estimated to be between 1.5/1000 to 7/1000 pregnancies),^{1,2} obstetricians may not be familiar with it.

The aetiology remains uncertain but it may represent a haematoma.^{1,2} This can be asymptomatic or be accompanied by symptoms like pelvic pain or vaginal bleeding.³ There was a significant association between the presence of a chorionic bump and the performance of ultrasound examination for bleeding during the first trimester, indirectly supporting the prevailing theory that bumps may represent haematoma.⁴

In some reports, it is associated with a twofold to fourfold increased risk of early miscarriage,^{1-3,5} but its prognosis and the relationship with spontaneous abortion have not been clearly explained.^{2,6}

The chorionic bump arises within the chorion (ie, trophoblast) immediately beneath the chorionic membrane. It is typically located within the chorion frondosum, the thickest part of the developing placenta, around 7–8 weeks' gestation, once the umbilical cord can be seen.⁵

Until date, there have been no ultrasound or clinical markers (like size of the bump) that can predict a difference in outcome. The largest bump described was 3.8 cm.² Besides, there has been no difference in pregnancy outcome as a result of location of the bump, that is, under or away from the cord insertion.⁵

Additionally, it appears that the chorionic bump number matters, but not the size. The majority of

the pregnancies described had a single bump. When the described pregnancies had more than one bump, the outcome was demise.^{2,3}

The latest described mean gestational age of diagnosis of chorionic bump is around 11 weeks, later than first described by Harris *et al.*⁴

Wax *et al* suggest that a sonographically isolated chorionic bump may significantly increase the likelihood of fetal chromosomal abnormality among pregnancies with increased aneuploidy risk; this can be important for counselling the patient.⁷

In spite of the haematoma hypothesis and findings of coagulation issues in some patients, no significant correlation between coagulopathy and live birth in patients with a chorionic bump was observed.⁵

A clinical association has been reported between chorionic bumps and infertility, but the reason for this still remains unclear.^{1,8}

CASE PRESENTATION

We present a case of a chorionic bump diagnosed in the first trimester on initial presentation.

A healthy 34-year-old woman (G2P1001, with one vaginal birth), with a history of 3 years of infertility, and pregnant after successful intracytoplasmic sperm injection, presented to our department for routine first trimester obstetric ultrasound examination. There was no history of vaginal bleeding.

The prepregnancy transvaginal ultrasound examination revealed a 65 × 48 mm uterine subserous myoma.

INVESTIGATIONS

A live fetus with a crown rump length of 58.0 mm (consistent with a gestational age of 12 weeks and 2 days) was observed. A heterogeneous ovoid mass, 10 × 8 mm in size, extending from the chorionic surface into the gestational sac compatible with the chorionic bump was observed, with no flow on colour Doppler (figure 1). The size of the myoma remained the same.

Follow-up ultrasound examination 2 weeks later, did not show any significant changes in the number and shape of the chorionic bump, but the size had increased to 17 × 14 mm (figure 2).

The study of hereditary thrombophilias was negative.

Serial ultrasound examinations performed at 19 weeks and 21 weeks showed no difference in the chorionic bump.

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Figure 1 A heterogeneous ovoid mass extending from the chorionic surface into the gestational sac compatible with the chorionic bump, measuring 10 × 8 mm.

The chorionic bump was no longer visible in the ultrasound examination performed at 23 weeks. Fetal morphology was normal.

OUTCOME AND FOLLOW-UP

The pregnancy was interrupted by elective caesarean section due to placenta praevia at 37 weeks and 1 day, with the delivery of a 2650 g live female infant with Apgar Scores of 10 at 1 min and 5 min.

Anatomopathological examination of the placenta did not reveal any alteration.

The development of the child has been normal until now.

DISCUSSION

A chorionic bump is described as a focal convex bulge of the chorionic surface protruding in the gestational sac, in the first trimester of pregnancy. The aetiology and structure is not fully known.^{1,6}

Some authors have suggested that a chorionic bump is associated with a poor prognosis in pregnancy,¹ although more recent studies have suggested that it is not necessarily associated with a poor prognosis.^{3,8} Wax *et al* reported a fourfold increase in miscarriage rate compared with the general population.⁴ On the

contrary, Arleo *et al* reported 83% of live births in otherwise normal pregnancies with a single chorionic bump.³

In our case, although a chorionic bump was initially identified and continued to grow until the second trimester, a healthy baby was born.

It is speculated that a chorionic bump represents a haematoma, based on hyperechogenicity on ultrasound, which decreases over time, and T1 hyperintensity on MRI.¹ Furthermore, findings of haemorrhage on histopathological examination suggested that haematomas were the source of the bumps.²

The main difference between chorionic bump and subchorionic haemorrhage, in the ultrasound, is in their locations. Chorionic bumps are convex bulges from the chorionic surface into the gestational sac. In subchorionic haemorrhages, there is a separation of the chorionic membrane from the decidua, which results in an accumulation of blood in the subchorionic space.

Baalmann *et al* recently suggested an additional underlying mechanism in which extensive necrosis on the decidualised endometrium plays an important role in the formation of the bump.⁹

Some studies found that the mode of conception had a statistical significance on pregnancy outcome,¹⁸ but the reason behind the clinical association between chorionic bump and infertility remains unclear. In the present case, pregnancy was achieved after successful intracytoplasmic sperm injection.

There was no association in literature between chorionic bump and placenta praevia.

Histopathological findings and the mechanism of formation of chorionic bump can help understand the relationship between the presence of a chorionic bump and the prognosis of the pregnancy. There is a need to publish more sonographic-histopathological cases.

Learning points

- ▶ Chorionic bump is a rare condition in the first trimester of pregnancies.
- ▶ Chorionic bump is speculated to represent a haematoma, and is described as a focal convex bulge of the chorionic surface protruding in the gestational sac.
- ▶ Better understanding of the causes and mechanism of the formation of a chorionic bump is important, particularly since some authors believe that it may be associated with a poor prognosis in pregnancy, whereas others do not. For this, more sonographic-histopathological case reports are needed.

Figure 2 Chorionic bump measuring 17 × 14 mm.

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