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Diagnosis and management of non-communicating rudimentary horn pregnancy

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ABSTRACT

Objectives: Non-communicating rudimentary horn pregnancy is a rare condition associated with serious complications and consequences.

Material and methods: We reported a case of a 44-day non-communicating rudimentary horn pregnancy who was diagnosed by three-dimensional ultrasound (3D-US) and pelvic magnetic resonance imaging (MRI), followed by treatment via laparoscopic resection.

Results: The 3D-US and pelvic MRI scan showed a consistent result. Serious complications and consequences were avoided. Postoperative diagnosis showed that the malformation was classified as type IIc.

Conclusions: For such diagnosis as a unicornuate uterus with a rudimentary horn, if there are no symptoms, it cannot be treated. Once pregnancy is in the rudimentary horn, 3D-US or MRI should be conducted to determine the implantation location of the pregnancy capsule and the operation should be performed as soon as possible to avoid uterine rupture. Laparoscopic surgery can be chosen in the early stage.

Key words: laparoscopy; non-communicating rudimentary horn pregnancy; three-dimensional ultrasound

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INTRODUCTION

Pregnancy in a non-communicating rudimentary horn is rare with the low prevalence, estimated to be 1 in 76,000––150,000 pregnancies [1, 2]. However, 80% or more of gravid rudimentary horns will cause uterine rupture, resulting in hemorrhage and a 0.5% maternal mortality rate [3]. Excision of the rudimentary horn by laparotomy is traditional approach, which is increasingly replaced with increasing expertise in laparoscopy. Recently, the three-dimensional ultrasound (3D-US) is reported to be highly accurate for uterine malformations diagnosis, which has a good consistency with magnetic resonance imaging (MRI) [4].

MATERIAL AND METHODS

A 39-year-old woman was admitted to the hospital due to postmenopausal period for 44 days and noncommunicating rudimentary uterine horn pregnancy for one day. She had no pregnancy history, and her menstrual history was: menarche at 13 years of age, menstrual period of 5 days, cycle of 30 days, and no dysmenorrhea. Gynecological examination detected a mass (3 × 3 cm in size) on the right side of the uterine body, which was not clear from the uterine boundary and had no obvious tenderness. Gynaecological 3D-US showed abnormal morphology of the uterus (left unicornuate uterus with right rudimentary uterine horn, 4.6 × 4.4 × 4.2 cm) A hypoechoic area (1.13 × 1.16 cm) was seen on the right side of the uterus, inside which an anechoic region (0.37 × 0.28 cm) was observed (considering rudimentary horn pregnancy). There was no communication between left unicornuate uterus and right rudimentary horn (Fig 1A). The consistent results were obtained by pelvic MRI (Fig. 1B).

RESULTS

On the third day of admission, the patient underwent laparoscopy combined with hysteroscopy under general anesthesia. Laparoscopic exploration showed abnormal uterine morphology. The thickness of the junction between left unicornuate uterus (4 × 4 cm) and right rudimentary horn (3 × 3 cm, blue-purple surface) was about 2 cm.

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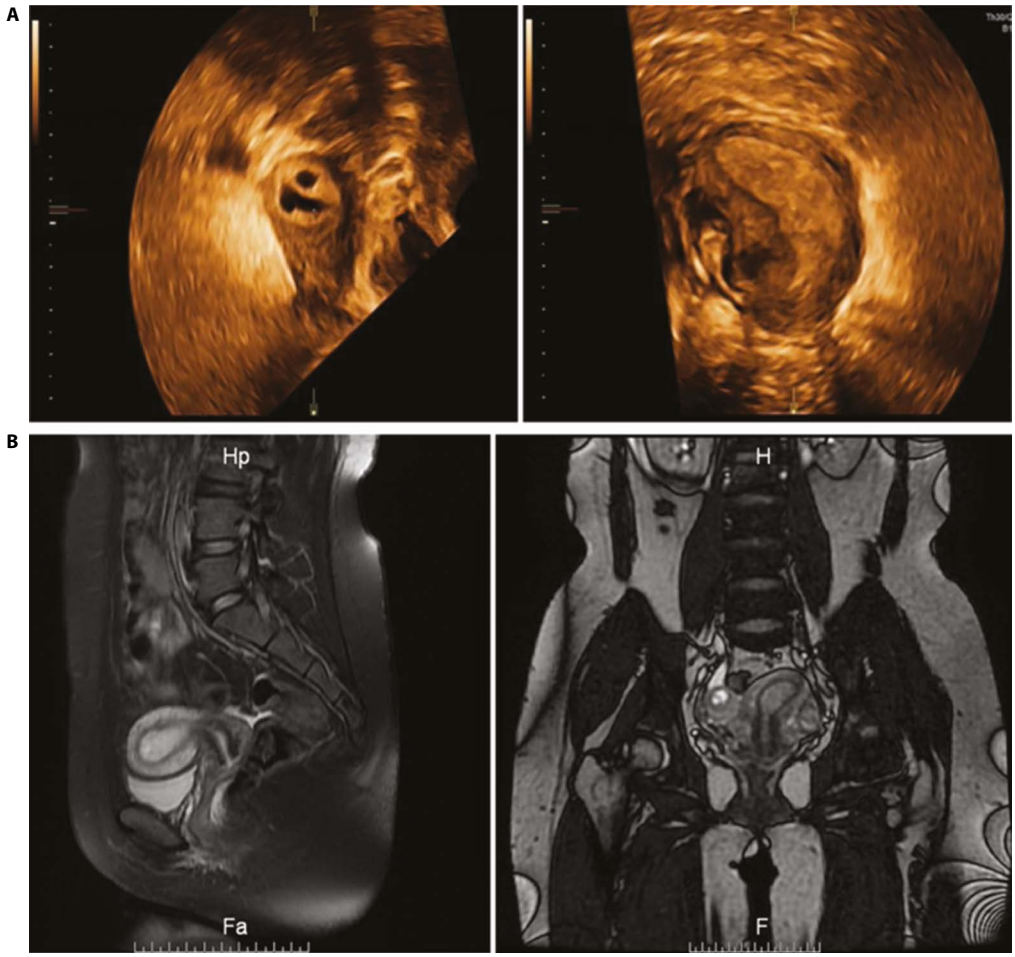

Figure 1. Three-dimensional ultrasound (**A**) and pelvic magnetic resonance imaging (**B**) showed the rudimentary horn pregnancy

Normal tubal and ovarian structures were seen on both sides. Hysteroscopy examination revealed a single cervix. The endometrium of the left single horn was thickened and only the opening of the left fallopian tube was visible. During the operation, Meilan drainage was performed. Under laparoscopy, Meilan solution was seen at the end of the left oviduct umbrella, but not the right oviduct umbrella. The right rudimentary horn with the right fallopian tube was excised. The operation time was one-hour, intraoperative bleeding was about 10 mL, and the operation was successful. She recovered well and was discharged five days after the operation. Postoperative pathological diagnosis confirmed the right rudimentary horn pregnancy, classified as type IIc.

DISCUSSION

Rudimentary horn pregnancy is a very rare form of ectopic gestation. In our case, postoperative diagnosis showed that the malformation was classified as type IIc, which was always diagnosis failure due to the absence of clinical symptoms of dysmenorrhea or misdiagnosis.

3D-US and pelvic MRI scan are shown to have high accuracy in the diagnosis of mullerian anomalies, and give comparable results [5]. In our case, both 3D-US and pelvic MRI were performed, obtaining the same conclusions. Given the advantages of 3D-US, such as non-invasive way, low price, and short examination time, we advised that 3D-US can be popularized clinically in the diagnosis of uterine malformations.

Most rudimentary horn pregnancies result in a high rate of complications, like uterine rupture. Once rupture, the consequences are disastrous, often leading to hemorrhagic shock and even death of pregnant women [6]. Because of the high risk of serious complications, it is recommended by most that, once the rudimentary horn pregnancy is diagnosed, surgery excision of the pregnant rudimentary horn and ipsilateral fallopian tube is immediately performed [7]. The common surgical methods are laparotomy and laparoscopy. Laparoscopy is an attractive option than laparotomy due to the advantage of short operation time, less intraoperative blood loss and early postoperative recovery. Based on the imaging diagnosis, laparoscopy combined with hysteroscopy was performed

in our case, which could be used for evaluation operation difficulty and risk of bleeding. Notably, the connection between the unicornuate uterus and rudimentary horn may be fibrous or fibromuscular. If thick fibromuscular tissue is present, laparoscopic resection is more technically challenging, and laparoscopic suture to close the myometrium is recommended to avoid uterus rupture during pregnancies. In our case, only a 1 cm thick fibrous band was present, so there was no need to close the muscular layer.

CONCLUSIONS

The presentation of this case shows that once pregnancy in rudimentary horn, 3D-US or MRI should be conducted to determine the implantation location of the pregnancy capsule and the operation should be performed as soon as possible to avoid uterine rupture. Laparoscopic surgery can be chosen in the early stage.

Conflict of interest

All authors declare no conflict of interest.

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