


# Laparoscopic management of perivascular a retroperitoneal perivascular ectopic pregnancy

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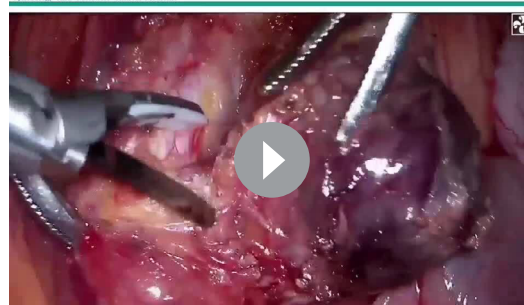
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Retroperitoneal ectopic pregnancy (REP) is one of the most special species of abdominal pregnancy. Due to possible invasion of retroperitoneal macrovascular, inconspicuous clinical manifestation and difficulty of diagnosis from imaging, the diagnosis and treatment of REP are easy to be delayed. REP represents a great challenge to surgeons due to the rarity and varying clinical presentations, from asymptomatic patients to patients with unstable haemodynamics, in cases of advanced ruptured ectopic gestation presenting with life-threatening retroperitoneal haemorrhage. Therefore, although REP accounts for only 1% of ectopic pregnancy, the mortality of which is eight times higher than other species of ectopic pregnancy in abdominal cavity.<sup>1</sup> Most of the sites of retroperitoneal ectopic pregnancy are located near the abdominal aorta and inferior vena cava, as well as rectovaginal space, obturator, perivascular space, or near the pancreas or kidney. Therefore, after excluding tubal pregnancy and common abdominal pregnancy, it is necessary to focus on the space between the retroperitoneal abdominal aorta and inferior vena cava.<sup>2</sup>

Surgical treatment, whether laparotomy or minimally invasive surgery, is the preferred option for retroperitoneal perivascular pregnancies.<sup>3</sup> Video 1 shows the details of the laparoscopic management of a dangerous case of ectopic pregnancy, which adhered to the surface of the abdominal aorta and inferior vena cava (figure 1). During the operation, the boundary between the gestational sac and the blood vessel was not clear, and the ultrasound knife was used to separate it close to the side of the gestational sac. Tearing was strictly prohibited and the residual tissue on the surface of the vessels was meticulously electrocoagulated with bipolar forceps. The pregnancy tissue should be removed in a specimen bag to avoid being left in the abdominal cavity.

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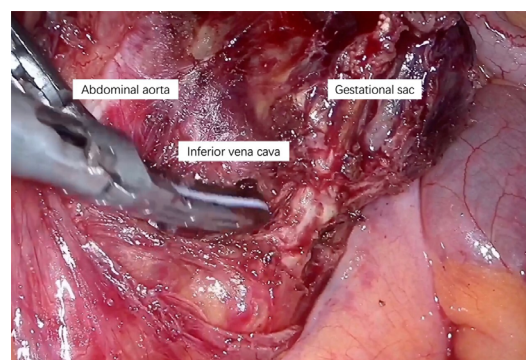
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**Video 1** Laparoscopic management of a dangerous case of ectopic pregnancy, which adhered to the surface of the abdominal aorta and inferior vena cava.

In conclusion, when a female with a positive pregnancy test and an 'empty' uterus, with or without abdominal pain and vaginal bleeding, comes to visit, it is crucial not only to investigate for tubal pregnancy but also to consider the possibility of pregnancies in rare ectopic sites, such as REP. We choose laparoscopic surgery because it is minimally invasive, has a clear vision and has a wide exploration range. We can use electrical appliances such



**Figure 1** The gestational sac adhered to the surface of the abdominal aorta and inferior vena cava with no clear boundary and the ultrasound knife was used to separate it close to the side of the gestational sac.

as ultrasonic knives and bipolar forceps for fine separation and precise hemostasis. These result in less bleeding, controllable operation time and enhanced recovery. But when should we do laparoscopic surgery? For the patient, stable vital signs without intraperitoneal haemorrhage. For the doctors, accurate preoperative judgement by transabdominal sonography/CT/MRI is very important. An experienced surgeon familiar with the anatomy of retroperitoneal vessels is vital for this choice. Finally, post-operative monitoring of the  $\beta$ -human chorionic gonadotropin should always be remembered.

**Contributors** JW and GZ performed the surgery and recorded the video. GZ edited and narrated the video. GZ wrote the draft. JR organised the case information and images. JW reviewed and supervised the final video and the draft. JW is the author responsible for the overall content as the guarantor.

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**Competing interests** JW is the editor-in-chief of *Gynecology and Obstetrics Clinical Medicine*. The authors declare that there are no conflicts of interest regarding the publication of this paper.

**Patient and public involvement** Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

**Patient consent for publication** Consent obtained directly from patient(s).

**Ethics approval** This study involves human participants, but ethics approval was exempted by the Ethics Review Committee of Peking University People's Hospital. The rationale provided by the Ethics Review Committee is that the case report and literature review of a case of 'retroperitoneal perivascular ectopic pregnancy' fall outside the category of "biomedical research involving human subjects" that requires ethical review as defined by the "Ethical Review Measures for Biomedical Research Involving Humans" issued by China in 2026(supplemental file1). However, written consent is obtained from the patient for using part or parts of surgical

procedures for educational purposes. Participants gave informed consent to participate in the study before taking part.

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## REFERENCES

- 1 Huang X, Zhong R, Tan X, *et al.* Conservative management of Retroperitoneal ectopic pregnancy by computed Tomographic-guided methotrexate injection in the gestational SAC: 2 Case Reports and Literature Review. *J Minim Invasive Gynecol* 2019;26:1187–92.
- 2 Ren J, Han H. Retroperitoneal para-aortic ectopic pregnancies: A review of reported cases. *Gynecol Obstet Clin Med* 2023;3:220–8.
- 3 Veleminsky M, Stepanek O, Koznar P, *et al.* A rare case of ectopic pregnancy - Retroperitoneal ectopic pregnancy. *Neuro Endocrinol Lett* 2018;39:156–9.