

DOI: <https://dx.doi.org/10.18203/2320-1770.ijrcog20263456>

Case Report

Ruptured tubal ectopic pregnancy with a giant paratubal cyst successfully managed by emergency laparoscopy

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Received: 13 July 2026

Revised: 22 August 2026

Accepted: 01 September 2026

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ABSTRACT

A ruptured ectopic pregnancy is a life-threatening gynaecological emergency requiring prompt surgical intervention. The presence of a giant adnexal cyst can significantly complicate the surgical approach by limiting access and visualisation. We present the case of a 21-year-old primigravida with a ruptured left tubal ectopic pregnancy associated with a giant right paratubal cyst measuring 18×17×23 cm. Despite the technical challenges, the patient was successfully managed laparoscopically with multidisciplinary input, avoiding laparotomy and preserving future fertility.

Keywords: Ectopic pregnancy, Paratubal cyst, Laparoscopy, Fertility preservation

INTRODUCTION

An ectopic pregnancy is a pregnancy implanted outside the endometrial cavity and occurs in approximately 11 per 1,000 pregnancies in the United Kingdom.¹ Most ectopic pregnancies are tubal, and rupture can cause severe intraperitoneal haemorrhage; early diagnosis and treatment are therefore essential to reduce maternal morbidity and mortality.²⁻⁴

Paratubal (paraovarian) cysts account for approximately 5-20% of adnexal masses. Most are small and asymptomatic, whereas giant cysts are uncommon and may distort pelvic anatomy, restrict visualisation and complicate safe laparoscopic access.^{5,6} The coexistence of a ruptured tubal ectopic pregnancy and a giant contralateral paratubal cyst creates a rare emergency in which haemorrhage control, safe access and fertility preservation must be balanced. The objective of this report is to describe the successful emergency laparoscopic management of this combination and to highlight the operative and multidisciplinary decisions that avoided laparotomy while preserving the remaining fallopian tube.

CASE REPORT

A 21-year-old primigravida presented to the emergency department with a one-day history of worsening lower abdominal pain, shoulder-tip pain and feeling generally unwell. She had a history of irregular menstrual cycles and was approximately five weeks from her last menstrual period. She had received her first depot medroxyprogesterone acetate (Depo-Provera) injection one week earlier for contraception and was unaware that she was pregnant.

Routine investigations in the emergency department revealed a positive pregnancy test, following which she was referred urgently to the gynaecology team.

On examination, she was tachycardic with a heart rate of approximately 110 beats per minute. Her blood pressure was 100/80 mmHg, while respiratory rate and oxygen saturations were within normal limits. She remained haemodynamically stable despite her symptoms. Abdominal examination demonstrated a large palpable pelvic-abdominal mass extending up to the level of the umbilicus.

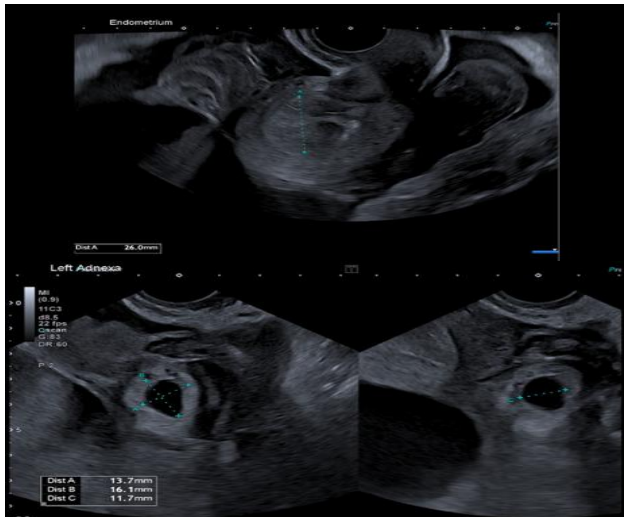


Figure 1: Large palpable pelvic-abdominal mass.

Laboratory investigations were unremarkable except for a reduced haemoglobin concentration. Transvaginal ultrasound demonstrated a ruptured left tubal ectopic pregnancy with moderate free fluid within the pelvis, together with a large simple right adnexal cyst measuring 18×17×23 cm.

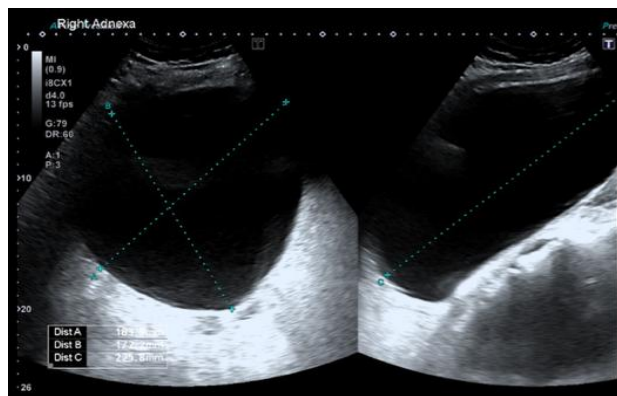


Figure 2: Large simple right adnexal cyst measuring.

The patient's clinical presentation, ultrasound findings and laboratory investigations were highly suggestive of a ruptured ectopic pregnancy requiring emergency surgical management. Although laparoscopic salpingectomy would normally be the preferred treatment, the presence of the giant adnexal cyst created uncertainty regarding safe abdominal entry and operative access, raising the possibility that laparotomy might be required. Comprehensive counselling was undertaken regarding the planned procedure, potential need for conversion to laparotomy, possible blood transfusion, and implications for future fertility.

The operation was carefully planned, taking into account the patient's haemodynamic stability, young age and desire for future fertility.

Initial abdominal entry using an open (Hasson) technique proved technically difficult because the giant cyst occupied much of the anterior abdomen. A nasogastric tube was inserted to decompress the stomach, and alternative laparoscopic entry was attempted through Palmer's point. Due to the complexity of the case, the on-call gynaecological oncologist was invited to assist with establishing safe abdominal access.

Even after successful entry through Palmer's point, visualisation of the pelvis remained severely limited because the giant cyst occupied almost the entire abdominal cavity. In order to improve access, controlled laparoscopic drainage of the cyst was undertaken, yielding approximately 2 litres of clear fluid.

Following decompression, approximately 1.5 litres of haemoperitoneum was identified together with a ruptured, slowly bleeding left tubal ectopic pregnancy. A left salpingectomy was successfully performed, followed by evacuation of the haemoperitoneum and extensive peritoneal washout.

The right-sided cyst was confirmed to be a giant paratubal cyst. The right fallopian tube was stretched and plastered across the superior surface of the cyst, appearing swollen and extremely fragile. As this represented the patient's only remaining fallopian tube following left salpingectomy, cystectomy was not attempted because of the significant risk of tubal injury and subsequent compromise of future fertility. Instead, cyst drainage alone was performed.

Postoperative course

Following surgery, the patient's haemoglobin fell to 65 g/l, necessitating transfusion of two units of packed red blood cells. Cytological examination of the cyst fluid demonstrated no evidence of malignant cells.

The patient made an uncomplicated postoperative recovery and was discharged home following appropriate counselling regarding the increased risk of recurrent ectopic pregnancy and the importance of early ultrasound assessment in any future pregnancy.

A follow-up pelvic ultrasound performed three months later demonstrated complete resolution of the paratubal cyst with no evidence of recurrence.

DISCUSSION

Ectopic pregnancy remains one of the leading causes of maternal morbidity and mortality during the first trimester of pregnancy. It occurs in approximately 1-2% of pregnancies, and most ectopic pregnancies are tubal. Prompt diagnosis and timely surgical intervention are essential to minimise haemorrhage and reduce maternal mortality.^{1,3,4,7}

Current national guidance recommends laparoscopic surgery as the preferred approach for haemodynamically stable women with tubal ectopic pregnancy, offering shorter hospital stay, less postoperative pain and quicker recovery compared with laparotomy.² Although our patient presented with significant haemoperitoneum (approximately 1.5 litres), she remained haemodynamically stable despite tachycardia, making a laparoscopic approach appropriate. However, the presence of a giant paratubal cyst measuring 18×17×23 cm created an unusual and technically demanding surgical scenario.

Paratubal (paraovarian) cysts account for approximately 5-20% of adnexal masses and are usually small, asymptomatic and detected incidentally. Giant paratubal cysts are uncommon, particularly in women of reproductive age. Although most are benign, their large size can distort normal pelvic anatomy, making laparoscopic access and visualisation challenging.^{5,6,8}

Safe abdominal entry is a critical consideration when managing patients with large intra-abdominal masses. Conventional umbilical entry carries an increased risk of inadvertent injury when a large cyst occupies the anterior abdominal cavity. In such situations, Palmer's point entry is recognised as a safe alternative laparoscopic access site, provided contraindications are excluded.⁹ In our case, an initial open (Hasson) approach proved technically difficult because of the size and position of the cyst. Alternative access through Palmer's point, together with involvement of an experienced gynaecological oncologist, allowed safe establishment of pneumoperitoneum while minimising the risk of visceral injury.

Following abdominal entry, the giant cyst completely obscured the operative field, preventing adequate visualisation of the pelvis and the ruptured ectopic pregnancy. Controlled laparoscopic drainage of approximately 2 litres of clear cyst fluid allowed decompression of the cyst, restoration of the operative field and subsequent identification of the ruptured left tubal ectopic pregnancy. Previous reports have demonstrated that controlled decompression of giant benign-appearing adnexal cysts can facilitate minimally invasive surgery while avoiding unnecessary laparotomy, provided careful surgical technique is used to minimise intraperitoneal spillage.^{10,11}

A further intraoperative challenge involved deciding whether to perform cystectomy. The patient's right fallopian tube, the only remaining tube following left salpingectomy, was found to be stretched and plastered over the superior aspect of the cyst, appearing oedematous and extremely fragile. Although cystectomy is generally recommended for paratubal cysts to reduce recurrence and obtain histological diagnosis, preservation of future fertility must remain a priority in young women.^{6,12} In this case, attempting cystectomy carried a substantial risk of injury to the patient's only remaining fallopian tube. The decision to perform drainage alone therefore represented a

carefully considered fertility-preserving strategy. Subsequent cytology demonstrated no malignant cells, and complete resolution of the cyst at three-month follow-up supported the appropriateness of this conservative approach.

This case highlights several important learning points. First, giant adnexal cysts may significantly complicate the emergency surgical management of ruptured ectopic pregnancy despite the patient remaining suitable for laparoscopic surgery. Second, alternative laparoscopic entry techniques and multidisciplinary involvement may allow successful minimally invasive management in technically complex situations. Finally, surgical decision-making should balance definitive treatment with preservation of future fertility, particularly in young nulliparous women.

CONCLUSION

This case highlights the importance of individualised surgical planning when ruptured ectopic pregnancy coexists with a giant adnexal cyst. Despite significant technical challenges, emergency laparoscopic management was successfully achieved without conversion to laparotomy. Careful multidisciplinary decision-making allowed effective treatment of the life-threatening ectopic pregnancy while preserving the patient's future reproductive potential.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

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Cite this article as: Ferdous T, Myint SLM, Maydanovych S. Ruptured tubal ectopic pregnancy with a giant paratubal cyst successfully managed by emergency laparoscopy. *Int J Reprod Contracept Obstet Gynecol* 2026;15:4130-3.