

DOI: <https://dx.doi.org/10.18203/2320-1770.ijrcog20260899>

Case Report

Management of a large spontaneously ruptured dermoid cyst: a case report from large tertiary hospital in Australia

Santvana Pandey*, Manju Mukundan

Department of Obstetrics and Gynaecology, Eastern Health, VIC, Australia

Received: 31 January 2026

Revised: 04 March 2026

Accepted: 05 March 2026

***Correspondence:**

Dr. Santvana Pandey,

E-mail: dr.pandey1@gmail.com

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ABSTRACT

Mature cystic teratomas (MCT), more commonly known as dermoid cysts (DC), are the most common type of ovarian growth, a type of germ cell tumor. MCT are typically small and not prone to spontaneous ruptures, we present a case of a large MCT which had spontaneous rupture. This is a case of 37-year-old nulligravida, with no medical history who presented to emergency department because of abdominal pain. She was admitted, diagnosis and radiographical findings plus the clinical examination led to identification of large pelvic mass, with possible DC, and due to associated pain was undertaken for surgery.

Keywords: Dermoid cyst, Ovary, Mature cystic teratomas, Spontaneous rupture

INTRODUCTION

Pelvic masses frequently originate from the pelvic cavity and are often associated with uterine, ovarian, or intestinal disorders. MCT, also known as DC, are the commonest pelvic masses, a form of benign ovarian tumours, in reproductive age group, comprising of up to 30% of all ovarian tumors.¹ Most patients are seen to have a relative smaller size cyst, with even the sampling of literature for reported cases with ruptured DC indicating an average size of ~11 cm.² The DC typically remain asymptomatic and only lead to the spontaneous rupture in the rare (1-2%) cases.³

We are presenting in this case report case of a patient with a pelvic mass diagnosed as a mature cystic teratoma, which had undergone spontaneous rupture alongside initial presentation and our management approach.

We will analyze this case and conclude with a literature review, to mitigate the risk of misdiagnosis and enhance the treatment of complex adnexal masses.

CASE REPORT

A 37-year-old nulligravida, with no medical or surgical history, presented to the emergency department with a one-day history of sudden onset sharp pain in left lower abdomen and suprapubic region, radiating to epigastrium. The pain did not have any improvement with NSAID consumed at home and worsened over the past 24 hours. She did not have any associated fever, vomiting, bowel or bladder symptoms. She had regular cycles and was on day one of her periods, and did not have any abnormal PV discharges. Initial impression led to emergency department suspecting ovarian torsion, and differential diagnosis of ectopic pregnancy. However, pregnancy was ruled out with a negative β -hCG.

Physical examination revealed normal vital signs, a 34-week-size abdominopelvic mass, generalized abdominal tenderness and guarding. On pelvic examination, there was right adnexal dullness, and the uterus was felt to be separate from the mass. An abdominopelvic ultrasound showed a 21×9×20 cm echogenic mass in the pelvis

extending to the abdomen, probably arising from the right ovary.

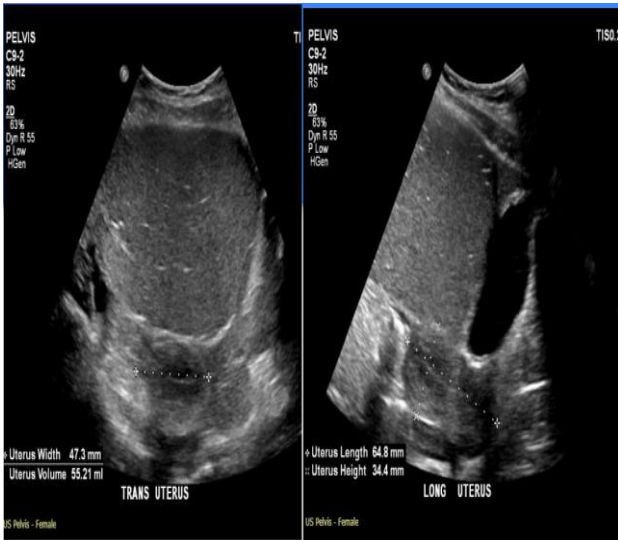


Figure 1: Abdominopelvic ultrasound with finding of 21 cm mass.

Laboratory investigations revealed elevated white cell count ($13.1 \times 10^9/L$), neutrophils ($12.351 \times 10^9/L$) and CRP (42.6 mg/L), negative beta hCG. Tumour markers were done which showed elevated CA-19.9 (1,115 kunits/L) and mildly elevated CA 125 (43.1 kunits/L), also suggestive of ovarian MCT.⁴

This was followed by a contrast enhanced computed tomography (CT) scan of abdomen-pelvis, which showed a mixed density $19 \times 8 \times 22$ cm abdominopelvic mass with fatty components within the pelvis extending 7 cm superior to the umbilicus, having heterogeneous density consistent with possible large dermoid cyst. There was reporting of the rupture on the CT scan.

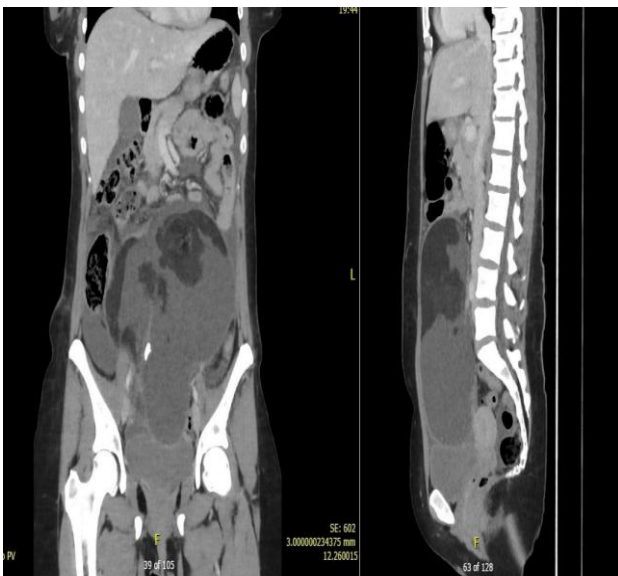


Figure 2: CTAP coronal view of dermoid cyst.



Figure 3: CTAP axial view of dermoid cyst.

As the patient was having combination of continued severe pain despite opiate analgesic, and exhibited fullness in R adnexa whilst it being difficult to palpate discrete abdominal mass- generally distended and tender, she was posted for emergency laparoscopic±open surgery with two senior gynecological surgeons.

On laparoscopy from palmer's point, a ruptured 30 cm right ovarian dermoid cyst with ~10-15 cm size ball shaped solid component was noted, which filled pelvic cavity and came up to the left upper quadrant. Minimal salvageable ovarian tissue was found and copious thick tan fluid, and hair was seen dispersed within the abdominal cavity and pelvis as seen in Figure 4.

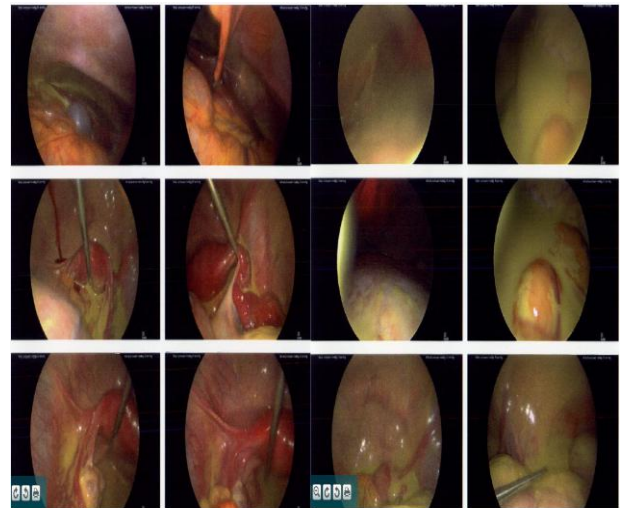


Figure 4: Ruptured dermoid cyst with cyst content filling intra-abdominally and in-pelvis.

Surgery was converted to laparotomy due to anesthetic concerns associated with patient desaturating and challenges with removal of large size specimen, as shown in Figure 6. Right oophorectomy, as right ovary completely engulfed by dermoid cyst and very little viable ovarian tissue left, and extensive peritoneal washout with warm saline was done.

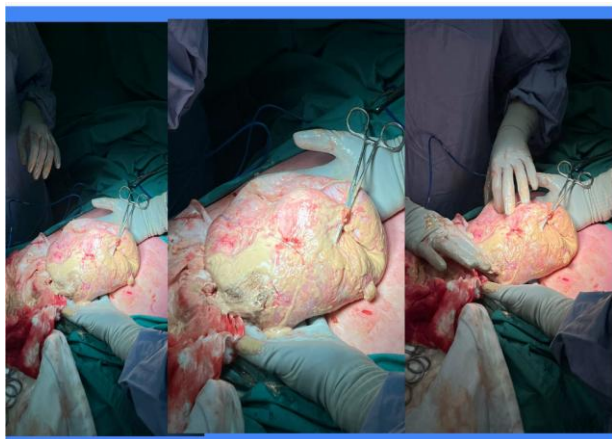


Figure 6: Excised surgical specimen of dermoid cyst and right ovary.

Post operative recovery was uncomplicated, and patient was discharged home on day 2 post-surgery. Histopathology confirmed the diagnosis of mature cystic teratoma. She was followed-up 6 weeks post-surgery and recovered well from the procedure.

DISCUSSION

DC are the most common benign ovarian neoplasms characterized by slow and insidious growth pattern. Owing to their thick capsule, spontaneous rupture of the cyst is quite rare. The size of the cyst is a major factor leading to Idiopathic rupture.

Diagnosis with imaging

As seen in this case, there may be an elevated CA-19.9 level and it can be difficult to detect a ruptured dermoid cyst via imaging, particularly at the time of rupture, with CT reporting being seen as more sensitive to adipose tissue in the literature, which is like the imagery results from the case being reported.⁵

Management

Surgery either laparoscopically or by laparotomy is the mainstay of management, with literature indicating laparotomy being main stay of management options with 85% of cases managed via this route, although in some of the cases laparoscopy has been shown to be successful for smaller sizes.²

CONCLUSION

This case highlighted the importance of diagnostic laparoscopy to assess the pelvic pathology in such a scenario with limited input from diagnostic imaging. Moreover, the completion of procedure can require an open surgery due to the limitations of laparoscopy in large abdominal pelvic masses. Meticulous peritoneal lavage is an essential aspect of managing ruptured dermoid cyst to prevent chemical peritonitis.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

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Cite this article as: Pandey S, Mukundan M. Management of a large spontaneously ruptured dermoid cyst: a case report from large tertiary hospital in Australia. Int J Reprod Contracept Obstet Gynecol 2026;15:1367-9.