

## Case Report

# A Giant Retrorectal Epidermoid Cyst Successfully Treated with Laparoscopic Excision: A Case Report and Literature Review

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## Abstract

A retrorectal epidermoid cyst is an uncommon lesion. It is believed to be a congenital lesion arising from the remnants of the embryonic tissues. Such lesion causes vague symptoms and thus poses challenge in diagnosis. Laparoscopic excision was advocated in selected cases, which enables a deep access to and excellent visibility of retrorectal region. We report a rare case of a giant retrorectal epidermoid cyst in a 22-year-old lady who complained of dysmenorrhea. Laparoscopic excision was successfully performed. The diagnosis of retrorectal epidermoid cyst was confirmed upon histological examination of the surgical specimen. Follow-up at 1 month and 7 months later showed no disease recurrence.

**Keywords:** Case report; Retrorectal epidermoid cyst; Laparoscopic excision

## Introduction

Epidermoid cyst is commonly found as a benign subcutaneous lesion, yet it is rarely found at retrorectal region. It develops from an ectodermal tissue remnant and consists of a thin wall lined by stratified squamous epithelium with a distinct granular cell layer. It contains desquamated debris, keratin, cholesterol and water [1]. Retrorectal epidermoid cyst is reported in one study to be responsible for one in 40,000 admissions [2]. It may cause vague symptoms such as pelvic pain, low back pain, constipation and tenesmus due to its slow-growing nature and mass effect to surrounding organs, therefore usually presents at its late stage, and is often found incidentally upon imaging [3,4]. While open excision with anterior, posterior or combined approaches are described, laparoscopic approach is advocated in selected cases, which enables a deep access to and excellent visibility of retrorectal region. We report a rare case of a giant retrorectal epidermoid cyst in a young lady treated with laparoscopic excision at Princess Margaret Hospital which is a region hospital.

## Case Presentation

A 22-year-old lady with good past health complained of dysmenorrhea for 3 years. She experienced pain over suprapubic region which was most severe on the first day of menstruation. She denied any constipation, tenesmus or change in bowel habit. Per-abdominal examination revealed a cystic mass of 9 cm located at

pelvis. Per-rectal examination revealed a cystic pelvic mass pushing the rectum to left side. She was arranged an ultrasound examination (USG) of pelvis which revealed a pelvic cystic mass. To further delineate the nature of the pelvic mass, Magnetic Resonance Imaging (MRI) of lower abdomen with contrast was performed on 17/7/2020, which showed a well-circumscribed unilocular non-enhanced homogeneously T1-hypointense T2-hyperintense thin-walled cystic mass measuring up to 9.3 cm in the retrorectal region with features in favour of a benign developmental cyst. The lesion compressed upon the displaced rectum, uterus, cervix, urinary bladder anteriorly without invasion into these structures (Figure 1a and b). Besides, Computed Tomography (CT) with contrast of abdomen and pelvis was performed on 2.12.2020 which showed a well-demarcated thin-walled presacral cystic mass of 9.6 cm at presacral space demonstrating simple appearance (Figure 1c).

Laparoscopic excision was performed on 3.2.2021. Intraoperatively an 8 cm pelvic cystic tumour containing sebaceous material was noted (Figure 2). The tumour was located posterior to rectum and adhered to pelvic floor muscles. Aspiration of the cyst with needle yielded viscous yellowish fluid. The pelvic cyst was dissected and completely excised subsequently. The operative time was 389 minutes and intra-operative blood loss was 300 ml. Post-operative recoveries were uneventful and the patient was discharged 4 days later.

Histological examination showed that the cystic wall was lined by keratinized stratified squamous epithelium with an undulated luminal border (Figure 3). Keratinous material was focally seen. There was no evidence of dysplasia or malignancy.

Follow-ups at one and seven months later showed no disease recurrence. Patient complained of no more dysmenorrhea. Bedside ultrasonography of pelvis showed no mass. There was no post-operative complication.

## Discussion

Retrorectal lesions are classified into congenital, neurogenic, miscellaneous or inflammatory lesions. While differential diagnoses

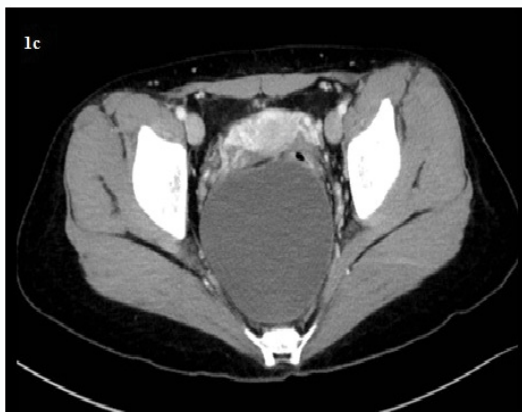
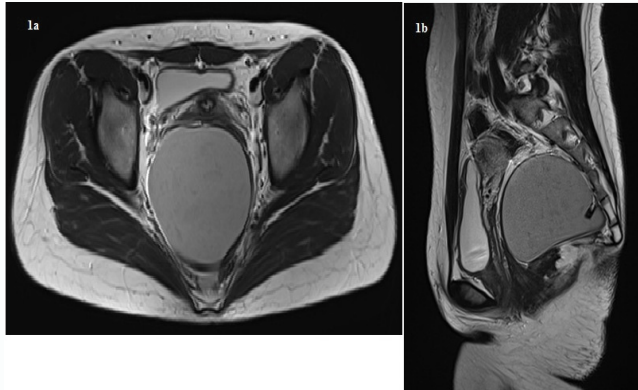
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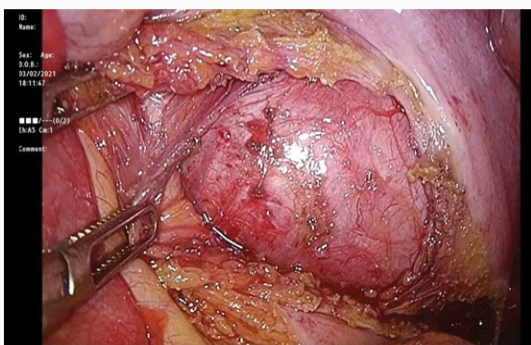
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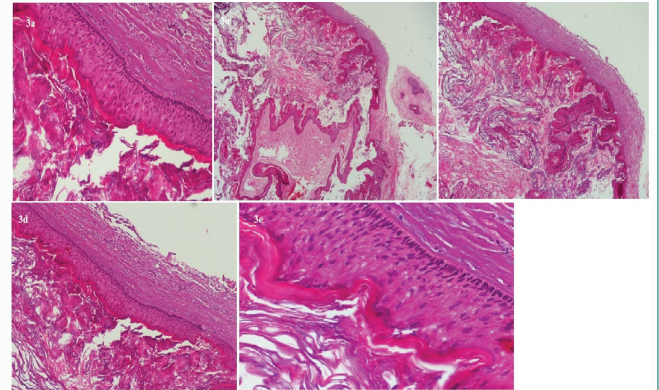


**Figure 1:** (a, b). Axial and sagittal views of T2-weighted BLADE Turbo Spin Echo (TSE) MRI image respectively. A well-circumscribed unilocular non-enhanced homogeneously T1-hypointense T2-hyperintense thin-walled cystic mass, measuring 9.0 cm × 9.3 cm × 8.1 cm, was noted in the retrorectal region. It demonstrates no internal septation, intralesional hemorrhage, sizeable mural calcification or suspicious enhancing soft tissue component. The lesion compressed upon the displaced rectum, uterus, cervix, urinary bladder anteriorly without invasion into these structures. (c). axial view of CT of abdomen and pelvis with contrast. The retrorectal mass was again noted with simple appearance without mural nodule or internal septation.



**Figure 2:** Laparoscopic view of a pelvic cystic mass located posterior to rectum and adhered to pelvic floor muscle.

of congenital retrorectal lesions include dermoid cyst, developmental cyst, tailgut cyst, teratoma, chordoma, anterior sacral meningocele and duplication cyst, retrorectal epidermoid cysts are rarely seen. It is more common in women of reproductive age. It usually causes vague symptoms such as pelvic pain, low back pain, constipation and tenesmus due to its slow-growing nature and mass effect to surrounding organs, therefore usually presents at its late stage [4].



**Figure 3:** Representative slides which showed that the cystic wall was lined by keratinized stratified squamous epithelium with an undulating luminal border and keratinous material was focally seen.

A few case reports or case series of retrorectal epidermoid cysts are found in the literature. Their clinical presentation, type of surgery, complication and recurrence are summarized in Table 1.

MRI is the preferred imaging modality over CT or USG for retrorectal lesions [3]. Epidermoid cyst demonstrates hypointensity on T1-weighted images and hyperintensity on T2 weighted images with restricted diffusion on diffusion weighted imaging sequence. It may show intralesional hypointense foci because it contains keratin. MRI may differentiate epidermoid cyst from other differential diagnoses. The use of diffusion weighted imaging in MRI is suggested [3]. Preoperative biopsy of such lesions is controversial because of risk of cyst infection and tumor spillage. Classically epidermoid cyst demonstrates a wall lined by squamous epithelium and keratin content within upon histological examination. In this case, its imaging and histological features are consistent with the classical presentation of epidermoid cyst.

Complete surgical excision is the definite treatment. Laparoscopic, anterior, posterior and combined approaches have been suggested. Choice of surgical approaches depends on (1) Size (2) Location (3) Any invasion to surrounding structures. In general, anterior approach is used for tumors located above the midbody of S3 or S4 vertebra while posterior approach is for those below. Combined approach is for those spanning both above and below or with suspected invasion to surrounding structures. Multidisciplinary approach may be needed if invasion to surrounding structures is noted. To avoid recurrence and complication, complete excision of the cyst wall is needed.

Laparoscopic approach enables a deep access to and excellent visibility of retrorectal region preventing vessel and nerve injuries [5]. The risk of malignancy and spillage in case of perforation is the relative contraindication of the laparoscopic approach.

A retrospective study looking at 12 patients who received laparoscopic excision of retrorectal tumors between 2003 and 2012 demonstrates a satisfactory result of low morbidity, 92% rate of R0 excision and no local recurrence [5]. Rectal injury requiring diverting stoma formation was reported in one patient and conversion to open was reported in three patients. Yet, more studies are needed to compare laparoscopic to open method. In this case, laparoscopic approach was used because it demonstrated benign features on preoperative imaging. Complete excision was performed to prevent

**Table 1:** Details of reported cases of retrorectal epidermoid cysts.

Case reports or case series	Clinical presentation	Type of surgery	Postoperative complications	recurrence
M. Ghannouchi (2022)	Perianal swelling	Anterior approach	Nil	Nil
S. Nasim (2020)	Sense of incomplete defecation	Anterior approach	Nil	Nil
R. Al-Shoura (2020)	Perianal swelling	Posterior approach	Nil	Not mentioned
G. L. Greca (2020)	Pelvic and back pain	Posterior approach	Nil	Nil
A. Oguz (2015)	Pelvic pain	Anterior approach	Nil	Nil
	Defecation difficulty and tenesmus	Combined approach	Nil	Nil
	Perineal painful swelling	Posterior approach	Nil	Nil
	Perineal pain	Posterior approach	Nil	Nil
	Pelvic pain and dysmenorrhea	Anterior approach	Nil	Nil
	Lower back pain	Combined approach	Nil	Nil
	Lower back pain	Posterior approach with coccygectomy	Nil	Nil
	Lower back pain	Posterior approach	Nil	Nil
U. Kesici (2013)	Perianal swelling	Posterior approach	Not mentioned	Not mentioned
E.Sierra-Montenegro (2009)	Perianal mass and difficult micturition	Combined approach	Nil	Not mentioned
M. Hayashi (2009)	Difficult micturition	Anterior approach	Not mentioned	Nil
A. Sasaki (2008)	Incidental finding on CT	Posterior approach	Nil	Not mentioned
C. Palanivelu (2007)	Perineal swelling	Laparoscopic approach combined with perineal incision	Nil	Nil

recurrence.

## Conclusion

Retrorectal epidermoid cyst is a rare disease which present with vague and non-specific symptoms. MRI imaging is the best preoperative imaging modality. Laparoscopic approach enables better visualization of retrorectal region. Complete excision is the key to preventing recurrence. We present a rare case of a giant retrorectal epidermoid cyst which was completely excised laparoscopically without recurrence.

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