

# Retrorectal Epidermoid Cyst: A Rare Tumor Excised by the Kraske Procedure

Shristy Prakash<sup>1</sup>, Bhavinder Kumar Arora<sup>2</sup>

<sup>1</sup>Junior Resident, Department of General Surgery, PGIMS, Rohtak, Haryana, India

Corresponding Author Email: [shristyp3\[at\]gmail.com](mailto:shristyp3[at]gmail.com)

ORCID ID: <https://orcid.org/0009-0004-3760-0605>

<sup>2</sup>Professor, Department of General Surgery, PGIMS, Rohtak

Email: [drbhavinderarora\[at\]gmail.com](mailto:drbhavinderarora[at]gmail.com)

ORCID ID: <https://orcid.org/0000-0003-3650-8415>

**Abstract:** *A retrorectal or presacral cyst is one of the rare swellings of the retrorectal space developing from embryological remnants. The various types of cysts are tailgut cysts, dermoid and epidermoid cysts, duplication cysts and scroccoxygeal teratomas.1 These being rare tumors with insidious onset and slow growth often leading to late presentation, misdiagnosis and mistreatment is probable and common, leading to higher rate of recurrence and complications.2 The presenting features range from discomfort and vague pain to problems with defaecation and lower back ache. Secondary infections and complications with pregnancy can occur and chances of malignant transformation are present when rapid increase in size is observed.3 We encountered a patient presenting with the complaint of feeling heaviness and discomfort in the rectal region with chronic constipation and occasional stool impaction. She was investigated and underwent surgical excision with posterior approach, that is the Kraske's procedure for the same.*

**Keywords:** Retrorectal cyst, Presacral cyst, Kraske's procedure

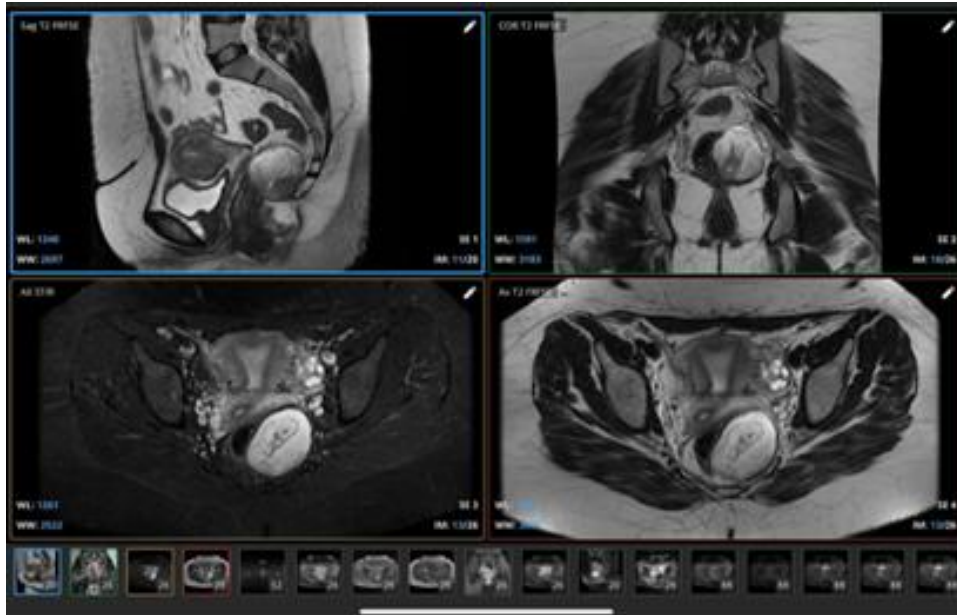
## 1. Introduction

Epidermal and epidermoid cysts are frequently found throughout the body; however, they are rarely found in the retrorectal/presacral regions. Retrorectal epidermoid cysts are congenital lesions of ectodermal origin generally occurring in women during the reproductive age group. After observing symptoms pertaining to defaecation or pain in the sacral or rectal region, physical examination and Digital Rectal Examination might reveal vague or well-circumscribed cystic or pseudo cystic mass palpable through the anal canal, extending to the presacral region.4 Ultrasonography, CT and/or MRI can be carried out to correctly localise the lesion, quantify its exact dimensions and to plan further management. Surgical excision is the gold standard treatment for retrorectal cysts with various modalities available. A multidisciplinary team can decide among a posterior approach (Kraske's procedure), abdominal approach or a combined one. Complete resection is the goal which is the only way to decrease local recurrence.5 The perineal approach is an option for retrorectal tumors, low perineal lesions, and cases where conventional laparotomy access is difficult.6 Histopathological reports can confirm the diagnosis and the presence or absence of malignancy.

## 2. Case Presentation

A 35 years old female presented to the General Surgery OPD with the complaint of vague pain and heaviness in the rectal region for 5 years and difficulty with defaecation with episodes of faecal impaction. She felt a vague, painless

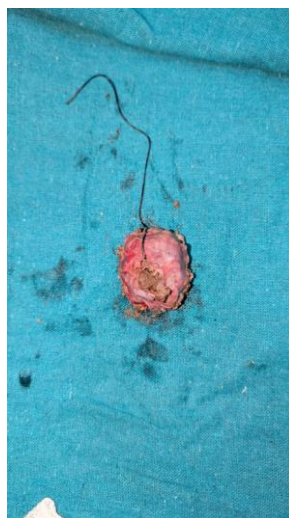
swelling in the inferior perianal region. Physical examination revealed fullness in the region inferior to the coccyx. Digital rectal examination was done and an approximately 5\*5 cm. non-tender, well-defined swelling with regular margins was felt abutting the posterior wall of the rectum obliterating the sacral hollow and extending upward towards the inferior part of the sacrum. The posterior rectal wall was freely mobile over the swelling which was cystic in consistency and no ulceration or skin changes were noted on proctoscopy. A bulge was seen on the posterior rectal wall. Ultrasonography and MRI revealed a 5.5\*5 cm hyperintense lesion on T2 weighted imaging with internal echoes in the presacral region from S3 to below the coccyx, edging towards the left side. The walls were well-defined and the anterior wall of the cyst was adhered to the posterior rectal wall. No major neurovascular involvement was seen. The patient was planned for surgical excision by the Kraske's technique. After general anaesthesia, in prone position, a 5 cm. longitudinal incision was given 1 cm. away from the natal cleft on the left side and dissection done. The anococcygeal ligament was transected and levator ani muscles were retracted laterally to expose the presacral space. The coccyx was partially excised using a bone nibbler and careful dissection was performed to separate the cyst from the rectum. After ensuring complete haemostasis, adequate muscle apposition was done and the wound was closed with suction drains in-situ. The postoperative stay was uneventful and the drain was removed on day 7. The sutures were removed on day 15. The final histopathological report revealed a benign epidermoid cyst with a squamous epithelial lining with intact granular layer and keratin filled centre.



**Figure 1:** MRI in sagittal, coronal and transverse views, showing the hyperintense lesion with internal echoes in the presacral region from S3 to below the coccyx, edging towards the left side. Rectal wall is not infiltrated.



**Figure 2:** Delineation of the cyst after excision of the tip of the coccyx (Kraske Procedure)



**Figure 3:** Excised specimen showing the Retrorectal Cyst with keratinous debris lined by a thin smooth wall

### 3. Discussion

Retrorectal cysts are an uncommon entity most often found incidentally in women. These tumors can arise from any of the one or more cell lines present in the presacral space during embryogenesis.<sup>3</sup> Tailgut cysts are the most prevalent retrorectal benign tumors, with an occurrence rate of 8% to 62%. Dermoid and epidermoid cysts are the second most common, accounting for 3%–22% of cases.<sup>7</sup>

The intricate anatomical architecture of this space is defined by the mesorectum anteriorly, the presacral fascia posteriorly, and the lateral boundaries of the iliac vessels and ureters.<sup>8</sup> These cysts are characterized histologically by a thin wall lined with stratified squamous epithelium. MRI findings include heterogeneous signal intensity on T1 and T2-weighted images due to keratinous materials. Differential diagnosis includes dermoid cysts, tailgut cysts, and rectal duplication cysts.<sup>8</sup> The classification of different retrorectal tumors is based on their etiology, that is, congenital, neurogenic, osseous, and miscellaneous, as classified by Ulhig and Johnson.<sup>9</sup>

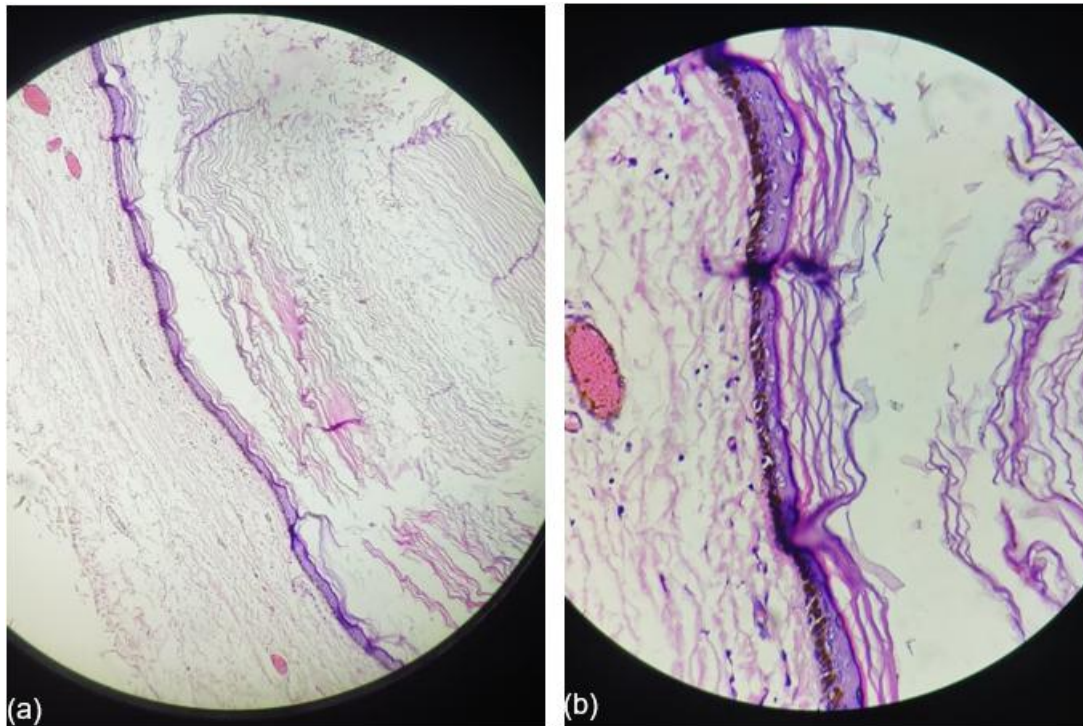
Surgery is the definite treatment to make a correct diagnosis of the nature of the lesion and to remove the mass. Untreated,

infective complications may occur and the increasing volume of the cyst can worsen clinical symptoms. For excision, posterior approach is indicated for low or mid presacral space tumors and is the most commonly followed route. The abdominal approach may be adequate for large developmental cysts.<sup>10</sup>

Depending on the location and size of the cyst, some serious complications can be observed in the posterior approach, like perforation of a neoplastic lesion, rectal perforation, and vascular and nerve damage. However, this approach has acceptable complication rates, short hospital stays, and quick recovery. The main and common complications are rectocutaneous fistulas, urinary dysfunction, and neurological issues.<sup>6</sup> None of these complications were observed in our patient. The anterior abdominal approach is preferred for tumors located above the midline of the S3 vertebra and can be performed via laparoscopy or laparotomy.<sup>8</sup> The combined abdominal–sacral approach is reserved for large tumors involving the sacrum above S3, offering wide exposure and ligation of the iliac and sacral vessels. However, this pathway combines disadvantages of both abdominal and posterior approaches, including the risk of pelvic girdle instability, urinary and anorectal sphincter disorders or lower limb sensory motor deficits.<sup>10</sup>

**Table 1:** Ulhig and Johnson’s classification of retrorectal tumors

Benign	Malignant
CONGENITAL	
Developmental cysts: Epidermoid, Dermoid, Mucus secreting	Chordoma
Teratoma	Teratocarcinoma
Duplication of rectum	
Anterior sacral meningocele	
Adrenal rest tumor	
NEUROGENIC	
Neurofibroma	Neuroblastoma
Ganglioneuroma	Ganglioneuroblastoma
Neurilemmoma/ Schwannoma	Malignant peripheral sheath tumors
Ependymoma	
OSSEUS	
Giant cell tumor	Osteosarcoma
Osteoma	Osteoblastoma
Aneurysmal bone cyst	Ewing Sarcoma
	Myeloma
	Chondrosarcoma
	Chondromyosarcoma
MISCELLANEOUS	
Lipoma, myelolipoma	Liposarcoma
Fibroma	Fibrosarcoma/ Malignant Fibrous Histiocytoma
Leiomyoma	Leiomyosarcoma
Hemangioma	Hemangiopericytoma
Endothelial a	Metastatic Carcinoma
Desmoid	



**Figure 4:** Histopathological images showing the cyst in 10x (a) and 40x (b) magnification, with the squamous epithelial lining of the cyst with intact granular layer and keratinous material inside. The diagnosis of Epidermoid Cyst was made.

#### 4. Conclusion

Retrorectal swellings are a rare entity with diverse presentation and surgical excision is challenging due to the complex regional anatomy in this area. We presented a case of retrorectal epidermoid cyst removed by an uncommonly used approach called Kraske's approach. A well-coordinated multidisciplinary team is important to decide the surgical approach and to establish the correct diagnosis pre- and post-operatively so that a clear distinction between benign and malignant lesions can be made.

Early diagnosis with complete (*en bloc*) surgical resection with tumor-free margins in cases of malignancy is essential for best local control and prevention of recurrence. The patient must be explained and informed consent obtained regarding the various complications during and after surgery. The various operative approaches must be considered and discussed and surgical excision performed with precision. If sacrectomy is necessary, at least one side of S2 must be preserved in order to avoid urinary and bowel disturbance.

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