

Successful resection of a presacral epidermoid cyst via a modified Kraske approach: a case report

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Introduction

Presacral, or retrorectal, tumours are rare, with a reported incidence of about 1 in 40,000 hospital admissions [4]. These lesions arise from residual embryonic, mesenchymal, or neurogenic tissue trapped within the retrorectal space, and most are benign. They are often discovered late because the bony pelvis hides them from clinical examination, and presentation is frequently vague or non-specific [4]. The choice of surgical approach depends mainly on the size and nature of the lesion and its position relative to the third sacral vertebra (S3).

The Kraske procedure was first described in 1885 by Paul Kraske as a posterior trans-sacral route to remove high rectal cancers [1]. Although it has largely been replaced for cancer surgery by anterior resection techniques, the same posterior corridor remains a reliable way of reaching benign or low-grade lesions that lie below S3 [2]. A modified version of the operation, limited to coccygectomy without formal sacral bone resection, preserves pelvic stability while still giving the surgeon a direct, well-lit view of the retrorectal space [2,3]. We report the use of this modified approach, with a transverse rather than the traditionally described vertical incision, for a presacral epidermoid cyst, and discuss the rationale for this modification.

Case report

A 41-year-old man presented with peri-anal discomfort and symptoms of obstructed defecation. He gave no history of rectal bleeding. Digital rectal examination revealed a firm, extra-luminal bulge in the lower rectum, about 4 cm from the anal verge, with the overlying mucosa appearing entirely normal. Flexible sigmoidoscopy confirmed the extrinsic bulge without any mucosal lesions.

Contrast-enhanced computed tomography (CT) of the abdomen and pelvis showed a well-defined, non-calcified, non-enhancing, oval hypodense lesion in the right ischio-rectal fossa/right pararectal space, measuring 49 × 42 × 39 mm. The lesion compressed the right lateral wall of the lower rectum and was in contact with the posterior surface of the right seminal vesicle, the right obturator internus muscle, and the tip of the coccyx, although the intervening fat planes remained intact and there was no fat stranding or lymphadenopathy. The radiological appearance favoured a benign lesion, with an epidermal cyst containing thick material and a neuroma considered as differential diagnosis.

Following multidisciplinary team discussion, excision via a posterior trans-sacral (Kraske) approach was planned. The patient was placed in the prone jack-knife position under spinal anaesthesia. A transverse incision was made approximately two finger-breadths above the tip of the coccyx, rather than the vertical or paramedian incision classically described. The coccyx was exposed, and the tip was excised (coccygectomy) after careful muscle separation. The cyst sac was identified and its lower margin delineated by simultaneous digital rectal examination. (Figure 1). Complete excision of the cyst together with its wall was performed, with thick, muddy cyst contents encountered intraoperatively (Figure 2). The rectal wall, to which the lesion was closely applied, was carefully preserved throughout dissection, and no inadvertent rectal injury occurred.



Figure 1: Left: well demarcated lesion (L) is exposed after coccygectomy. Right: Closed transverse incision over the coccygeal region with suction drain in situ.

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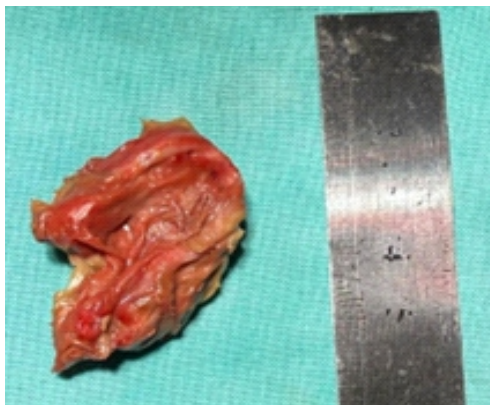


Figure 2: Excised cyst with the wall.

The cavity was closed in layers with 2-0 polyglactin sutures, a suction drain was left in situ, and the skin was closed with 3-0 polypropylene. The patient's postoperative course was uneventful; the drain was removed and he was discharged on the second postoperative day. Histopathology confirmed an epidermoid cyst lined by benign stratified squamous epithelium with luminal lamellated keratin and a foreign-body giant cell reaction, with no evidence of malignancy. At follow-up, the patient's presenting symptoms had completely resolved.

Discussion

Surgery in the presacral space carries a real risk of major haemorrhage from the presacral venous plexus, rectal injury, and pelvic nerve damage [4]. For lesions confined below S3, as in this patient, the posterior approach avoids the added morbidity of a laparotomy while still giving a direct, well-illuminated view that allows the rectal wall to be dissected off the lesion under vision [2]. Our modification, limiting bony resection to the coccyx alone rather than including the lower sacral segments, follows the principle that the smallest bony resection needed for safe exposure should be preferred, reducing the chance of postoperative pelvic instability and pain while still affording adequate access [2,3].

We chose a transverse skin incision over the coccyx rather than the vertical or paramedian incision originally described by Kraske. This was a deliberate departure, and the literature supports it. Aubert and Mege note that the standard vertical incision can also be made transversely, which facilitates exposure for coccygeal excision [2]. More directly, Zhao et al. specifically evaluated a transsacrococcygeal transverse incision in 105 patients with presacral tumours and found it feasible and safe, with acceptable oncological outcomes and low postoperative morbidity, concluding that the approach is worth wider adoption [3]. A transverse incision runs parallel

to the natural skin tension lines over the sacrococcygeal region, which is thought to reduce wound tension compared with a vertical scar crossing the intergluteal cleft, a high-tension area prone to friction and moisture; this is consistent with our patient's uncomplicated wound healing and short hospital stay.

Epidermoid cysts, together with tailgut cysts and developmental remnants, account for a substantial share of benign retrorectal masses [4], and a near-identical case, a retrorectal epidermoid cyst managed by modified Kraske procedure, has been reported with a similarly uncomplicated outcome [5]. Complete excision remains the standard of care, both to confirm the diagnosis histologically and to prevent infection, fistulation, or, rarely, malignant change within the cyst lining [4]. A limitation of the posterior approach, including our modification, is that it is unsuitable for lesions extending above S3, which require a transabdominal or combined approach [4]; thorough preoperative cross-sectional imaging is therefore essential for planning. To our knowledge, this is among the first reported uses of a transverse-incision modified Kraske approach for a presacral lesion in Sri Lanka.

Conclusion

The modified Kraske approach, using a transverse coccygeal incision and limited coccygectomy, allowed safe and complete excision of a presacral epidermoid cyst below S3, with an uncomplicated recovery. This experience adds to growing evidence that a transverse incision is a safe and possibly favourable modification of the classical Kraske approach for selected presacral lesions.

Conflicts of interest

The authors declare no conflicts of interest.

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None.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying clinical image.

Authors' Contributions

[To be completed by the authors using the CRediT taxonomy, e.g. conceptualisation, data curation, writing – original draft, writing – review and editing, supervision.]

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Learning Points:

- Presacral lesions below S3 can be safely and completely excised through a posterior modified Kraske approach, avoiding the morbidity of a laparotomy.
- A transverse coccygeal incision, rather than the classical vertical incision, is a safe modification supported by recent literature and may reduce wound tension.
- Digital rectal examination during surgery is a simple and useful adjunct for delineating the lower margin of a presacral cyst.
- Complete excision remains essential for both histological diagnosis and prevention of complications such as infection or malignant change.