Case Report

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# Novel Surgical Approach to Tailgut Cyst in an Adult

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**Abstract**

*Presacral mass is a rare condition arising in the potential space between the rectum and sacrum called Presacral space. The location, rarity, delayed presentation, and specific symptoms make presacral mass tough to diagnose for surgeons. Because of its location, presacral mass needs cross-section imaging like computed tomography and MRI to diagnose and plan for surgical resection. We present here a case of a 48-year-old female incidentally diagnosed with a presacral mass. Underwent surgery in our hospital.*

**Keywords:** Presacral mass, Tailgut cyst, Presacral hamartoma.

## Introduction

Presacral mass refers to a rare heterogenous lesion, including various benign and malignant lesions in the space between the sacrum and rectum - the retrorectal space. Presacral mass occurs in both sexes with female: male preponderance of 5:1 respectively (Young-Fadok & Dozois, 2007; Krivokapic et al., 2005) with median age of 45 - 55 years. Presacral space or retro rectal space is bounded in front by rectum and mesorectum anteriorly, posteriorly by sacrum and fascial covering it, superiorly by the peritoneal reflection inferiorly by the levatorani muscle, laterally by ureters and iliac vessels (Krivokapic et al., 2005) (fig.1). The nonspecific symptoms like constipation, perianal pain, backpain, lower limb pain and difficult location makes diagnosis and treatment difficult. These heterogeneous tumors are difficult to classify because the tissues in and around the presacral are originated from the embryologic stem cells that differentiate into three germinal layers which further develop into connective, osseous, and neural tissues, thus contributing to the heterogenesity. The Uhlig and Johnson Oren et al. (1977) classification system is currently utilized by surgeons for classifying presacral mass and aids in the planning of surgery. As the embryo folds during the fourth week of gestation, the cloacal membrane progresses ventrally and encloses a portion of the future gut that is distal to the eventual hindgut - a region known as the "tailgut" (Haydar & Griepentrog, 2015). Typically, the tailgut involutes around the sixth week of gestation; however, when this process fails, a tailgut cyst remains (Haydar & Griepentrog, 2015).

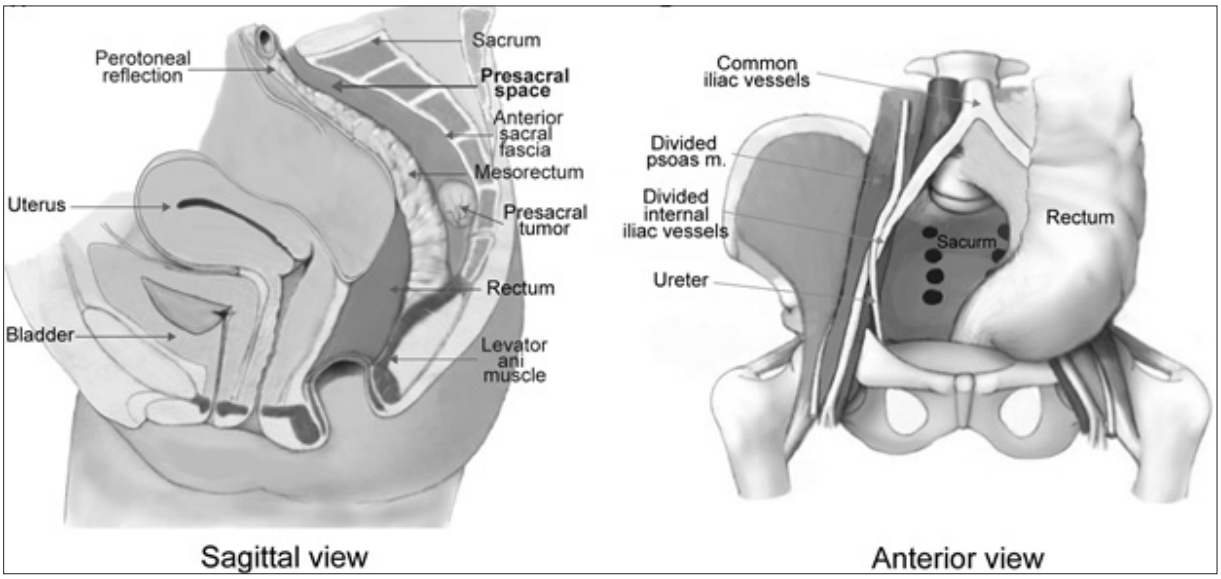


**Figure 1:** Pictorial depiction of anatomy of Pre sacrl Space Both sagittal and Anterior view

## Case Report

A 48-year-old female with complaints of irregular periods, when evaluated for irregular periods, was incidentally found to have a presacral mass. The patient doesn't even have nonspecific symptoms of a presacral mass, as mentioned above. Abdomen examination soft no palpable mass. Per rectal examination, the bulge can be felt in the posterior wall of the rectum with firm consistency. Lower border felt 3cms from anal verge upper border not felt. The patient then underwent an MRI pelvis, showing a well-defined heterogeneously enhancing mass in T2 weighted image measuring 7.2x6.3x7cm in the presacral region (Fig 2). There is no evidence of bony involvement or erosions in the sacrum and no soft tissue involvement (Fig 3).

**Figure 2:** Sagittal section Magnetic Resonance Image showing heterogenous pre-sacral mass extending above the level of S2.

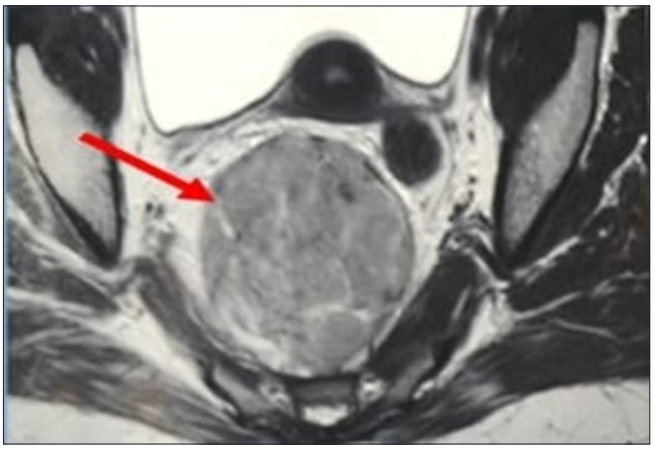

**Figure 3:** Axial section showing presacral mass causing external compression of rectum showing no rectal or bony involvement

Patient was evaluated with colonoscopy to know the mucosal pattern of rectum and to see the upper border of the lesion for prior planning (Fig 4). Though colonoscopy is non diagnostic it gives valuable information hence should be done before surgery.

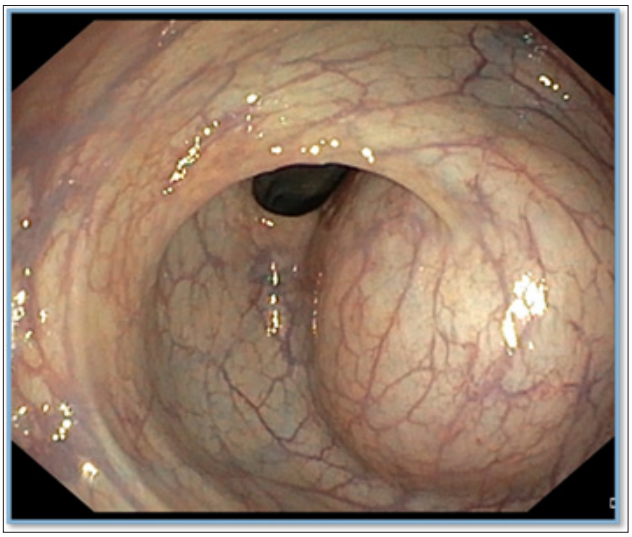

**Figure 4:** Colonoscopy image showing external compression with normal mucosa.

Patient planned for excision of mass through posterior approach. Patient in jack knife position (Fig 5) via. Right parasacral incision lateral to midline and deepened. Anococcygeal ligament divided and coccyx removed. Dissection done around the mass not injuring the surrounding neurovascular structures and ureters. Mass separated from the rectal wall and removed in toto.

**Figure 5:** Patient placed in Jackknife position.

Posterior rectal wall integrity was ensured via the air insufflation test. A suction drain was placed after hemostasis and closed. An 8x8 cm firm lump was removed and sent to histopathology. The post-operative period was uneventful, and the patient was discharged on day 4.

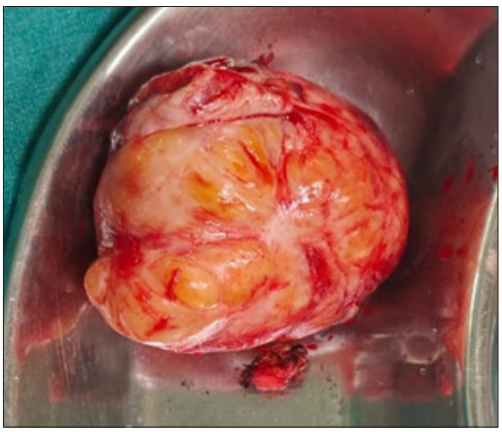

**Figure 6:** Resected specimen of pre sacral mass.

## Discussion

Pre-sacral mass is a rare condition presenting with vague symptoms due to the potential space in front of the sacrum, making it tough to diagnose. The presence of the sacral plexus, rectum, and ureters makes dissection tough for surgeons. The embryological origin contributes to the heterogeneity of the tumor with various benign and malignant causes.

Cross-sectional imaging like computed tomography and MRI is the diagnostic modality of choice. Though CT can tell about the dimensions and bony involvement, solid or cystic lesion; MRI because of its multiplanar ability and superior soft tissue resolution, aids in determining the planes of resection, spatial relationship to surrounding structures, and associated cord abnormalities, as well as the extent of bone marrow involvement (Woodfield et al., 2008). The newer advancement in the Diagnostic tool is Endoscopy and Endorectal Ultrasound (EUS). Colonoscopy aids in the evaluation of mucosal involvement and the extent of tumour. Endo ultrasound has been used to determine the nature, whether solid or cystic and their relationship to the layers of the rectum (Buchs et al., 2007) and mesorectum. This information is useful in determining the extent of dissection and assessing the need for rectal resection.

The role of preoperative biopsy in the management of presacral tumours has been controversial since the mainstay of treatment remains surgery. Only a few conditions like Ewing sarcoma, osteogenic sarcomas, neurofibrosarcomas, and desmoids need 'neoadjuvant therapy. Preoperative biopsy of a presacral lesion should, therefore, only be performed if it is likely to change the management and surgical approach (Jao et al., 1985).

Surgery is the mainstay of management of presacral mass as it prevents malignant progression, establishes diagnosis and avoids bacterial infection in case of a cystic lesion. Complete resection is mandatory to avoid any recurrence, especially in malignant mass. There are various surgical approaches available determined by various factors like size of tumour, nature, the involvement of adjacent viscera, and nodal status. The three most common approaches are,

- Anterior approach or) Abdominal approach
- Posterior approach (or) Perineal approach
- Combined approach (or) Abdominoperineal approach

The extent of resection depends on the nature and character of the tumour. A benign tumour requires only a dissection and removal while not injuring the surrounding viscera. Whereas in case of a malignant tumor, based on the extent of infiltration, a radical resection of involved structure may be required. However the morbidity associated with extended resections (Jao et al., 1985; Cody et al., 1981; Johnson & Gokaslan, 2000) should be weighted with the benefits of resection before proceeding. As the newer advancement in neoadjuvent chemo and radiotherapy, the need for extended resection is rare and should be considered.

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