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A Rare Presacral Tumor – Case Report

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Abstract
Background
Anatomically, the presacral space is a virtual cavity confined superiorly by the peritoneal reflection and inferiorly by the retrosacral fascia, close to the anorectal junction; the anterior aspect is formed by the mesorectum and the posterior side by the anterior sacral face; the lateral border is comprised of the ureters, iliac vessels, alae recti and sacral nerve roots. Embryologically, this space is the fusion of the neuroectoderm and hindgut, thus has a potential for developing tumors of various histologic type. About 50-70% of presacral tumors are congenital and originate from embryologic remnants. Surgical treatment is the mainstay treatment of choice, as it estabilishes a definitive diagnosis, prevents further tumor development or infection. The surgical approach, however, is entirely at the discretion of the surgeon via anterior abdominal route or posterior trans-sacrococcygeal route.
Case presentation
A 36 years old female patient was diagnosed with a presacral tumor of 6cm in size during a gynaecological consult for the complain of lower abdominal pain. It had grown to 7cm in the last 8 months. Imaging studies show no involvement of the pelvic vessels and clear margins form the vagina and presacral muscles. A surgical intervention is proposed and patient consent obtained. Via an anterior, transabdominal approach the complete extirpation of the presacral mass is performed. The patient made a full recovery and was referred for an oncological consult. Histopathology report confirms a liposarcoma.
Discussion
Imaging studies such as CT and MRI play an important role in determining the nature and extent of the lesion. They ought to be used in a complementary fashion rather than exclusive. MRI is superior in detailing soft tissues and determining the planes of resection, whereas CT can help with the nature of the lesion, the involvement of bone or other surrounding tisues. However, these should be aided with fibro-colonoscopy, fistulograms or transrectal ultrasound where applicable. With regards to the operative strategy, it is at the discretion of the surgeon to choose the best strategy for excision, whether it is anterior transabdominal or posterior trans-sacrococcygeal. The involvement of other specialists in the operating team may be necessary due to possible unexpected tumor type organ involvement.
Conclusion
In conclusion, presacral tumors have a relatively high potential for malignancy or complications, thus surgical resection is recommended, especially in symptomatic patients. Surgeons should take all the information available from different imaging studies such as CT and MRI to device the correct surgical strategy.
Keywords: General Surgery, Presacral Tumor, Liposarcoma, Liposarcoma Extirpation.
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1. Introduction

Anatomically, the presacral space is a virtual cavity confined superiorly by the peritoneal reflection and inferiorly by the retrosacral fascia, close to the anorectal junction; the anterior aspect is formed by the mesorectum and the posterior side by the anterior sacral face; the lateral border is comprised of the ureters, iliac vessels, alae recti and sacral nerve roots.

Embryologically, this space is the fusion of the neuroectoderm and hindgut, thus has a potential for developing tumors of various histologic type. About 50-70% of presacral tumors are congenital and originate from embryologic remnants. Some types of tumors are developmental cysts, chordomas, anterior meningoceles, lipomas, sarcomas, hemangiomas, etc.

Most of the patients have no clinical signs and are diagnosed incidentally, with the exception of the cases with persistent perianal drainage and multiple unsuccessful procedures. Other signs include lower abdominal or

back pain, sexual dysfunction, incontinence. On clinical examination a palpable mass may be noted in DRE or a firmness and tumefaction in the precoccygeal region.

The most common modalities for the diagnosis of presacral tumors are the abdominal ultrasound, endorectal ultrasound, computed tomography and MRI, with the latter two being the examinations of choice.

Surgical treatment is the mainstay treatment of choice, as it estabilishes a definitive diagnosis, prevents further tumor development or infection. The surgical approach, however, is entirely at the discretion of the surgeon via anterior abdominal route or posterior trans-sacrococcygeal route.

2. Case presentation

2.1 History of present illness

Our patient is a 36 years old woman. She had been followed by the gynaecologist for the past 8 months for her complaint of hypogastric pain, with the suspicion of ovarian origin. She had performed an abdominal CT and trans-vaginal ultrasound, where a 6cm retroperitoneal formation was noted, laterally to the vagina and cervix. The dimensions in the last examination were 7cm (a difference of 1cm for 8 months). It had clear separating planes form the retroperitoneal vascular elements, presacral muscles and vagina. Thus, we propose a surgical intervention. Consent was obtained and the patient was prepared for surgery.

2.2 Details of the surgical procedure

The procedure starts with an inferior median incision and access to the peritoneal cavity. Abdominal organs have a normal macroscopic aspect. We notice a retroperitoneal tumefaction, in the left presacral region.

The rectum and sigmoid colon are liberated and Toldt's fascia dissected. The peritoneum is opened at the level of the pelvic floor on the left side. The left ureter and iliac artery and vein are separated via rubber loops.

We start to prepare the mass according to the cleavage plane. The tumor was located along the mesorectum, vagina, presacral muscles and the pelvic vessels, without invading them. Step by step, we achieve the complete extirpation of the mass without damaging its capsule.

The procedure ends with hemostasis control and positioning of an abdominal drain and wound closure.

2.3 Post-operative period

The patient made a full recovery and was discharged in good health in the 4th postoperative day.

Histopathology report confirms liposarcoma and the patient was referred for an oncological consult.

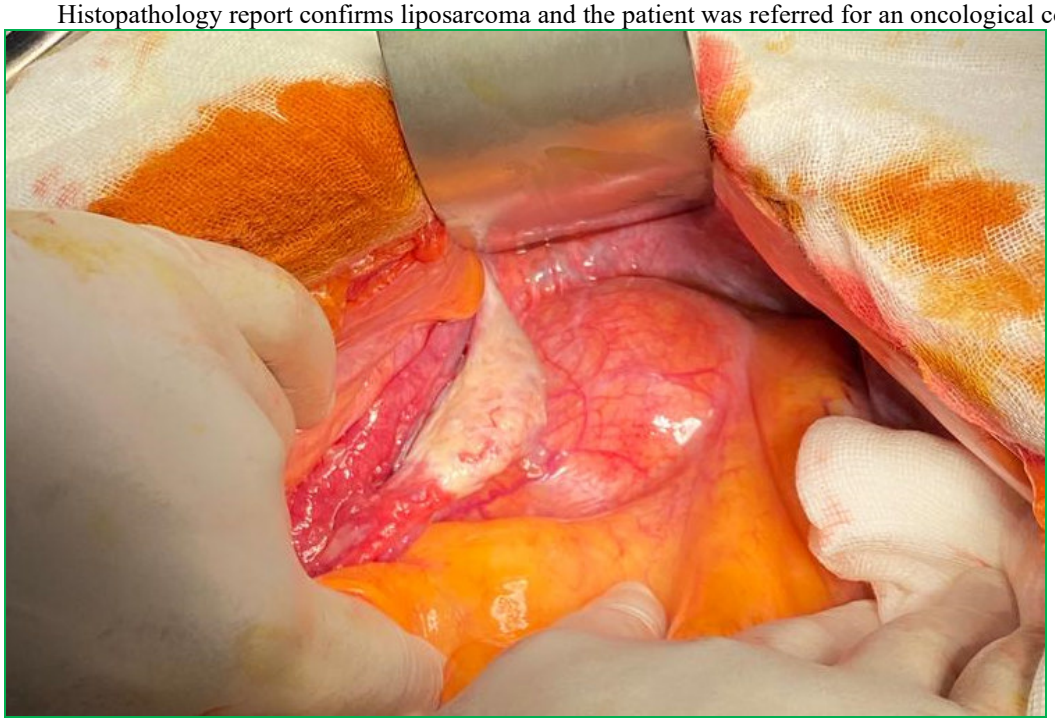

Figure 1. A left presacral tumefaction, bulging from the sigmoid mesocolon. Ovary on the left.

Figure 2. Starting the dissection.

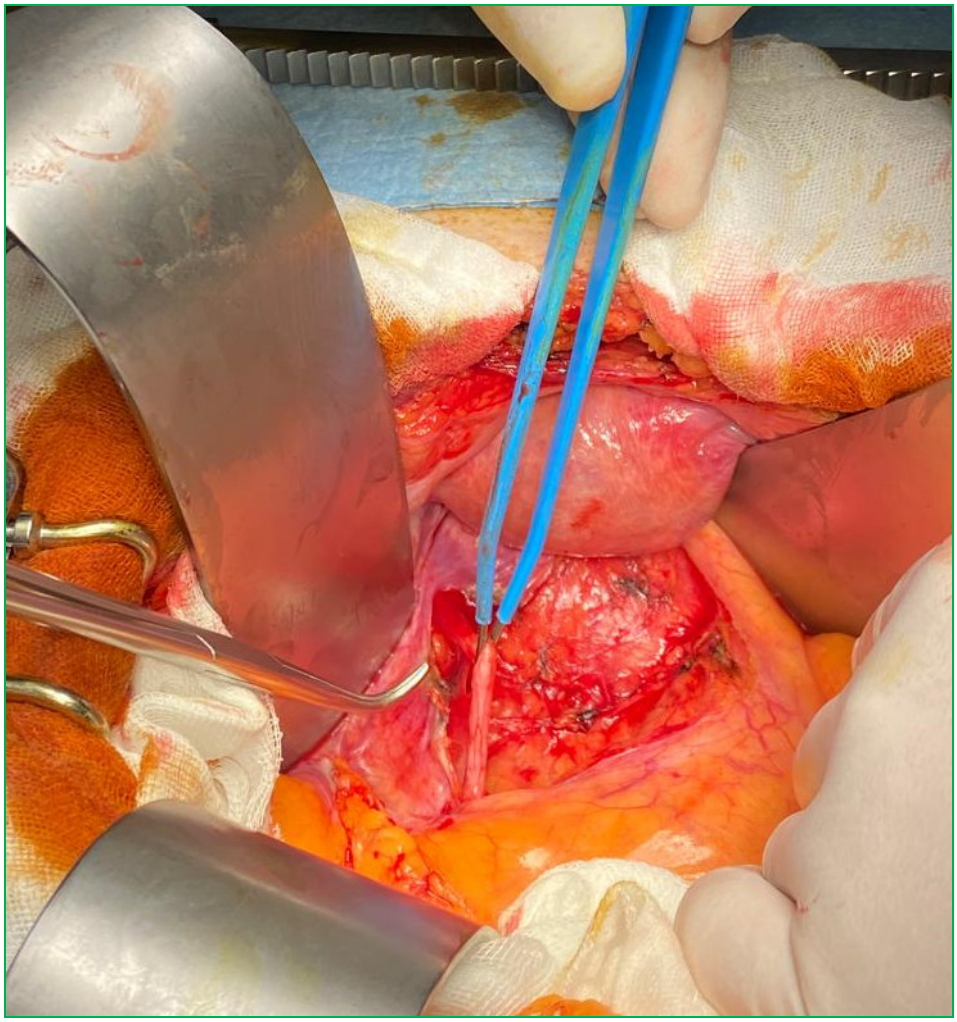

Figure 3. Left ureter is identified.

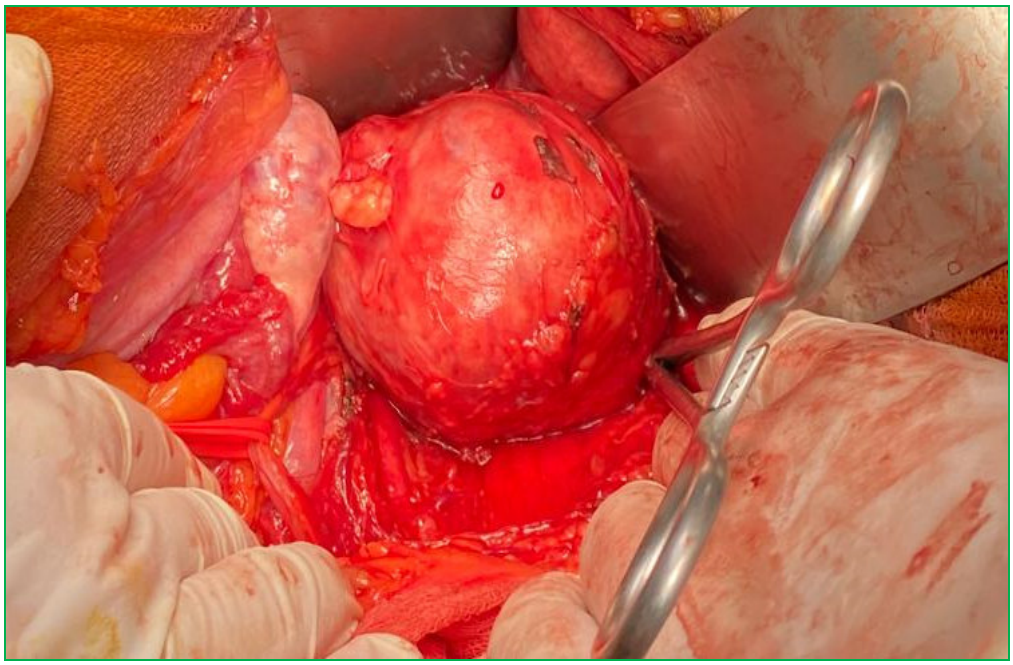

Figure 4. Step by step extirpation and hemostasis control.

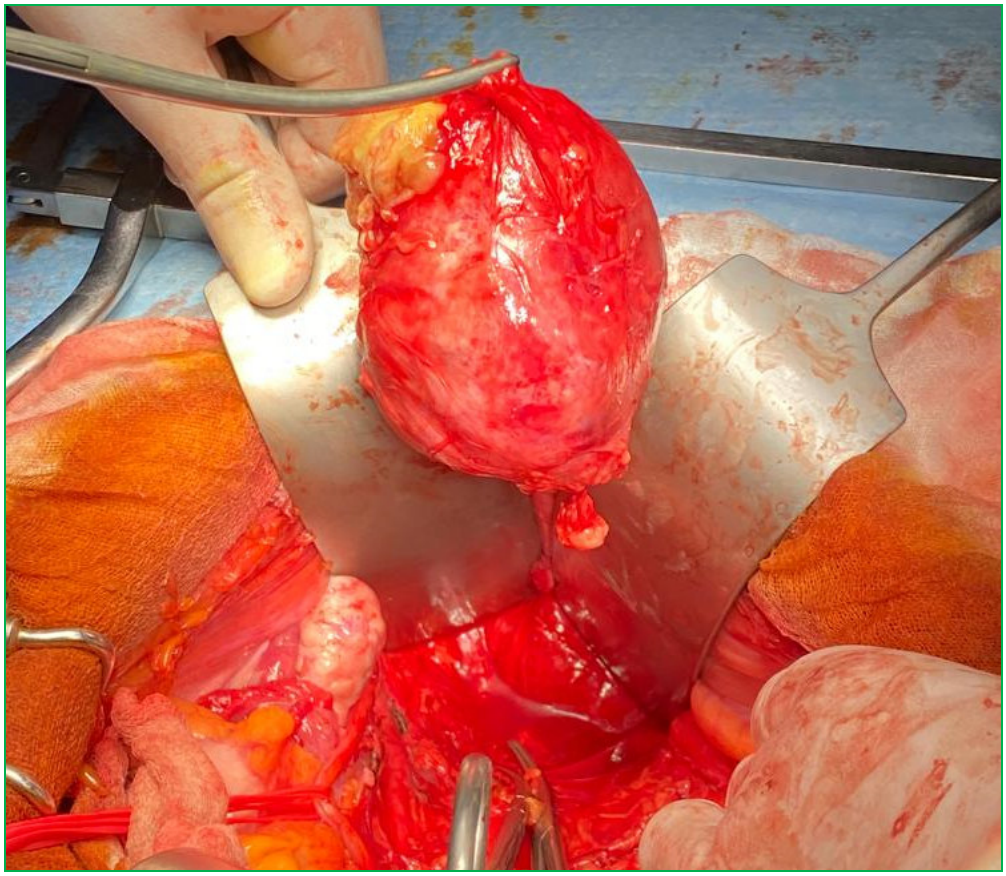

Figure 5. Complete extirpation of the presacral tumor.

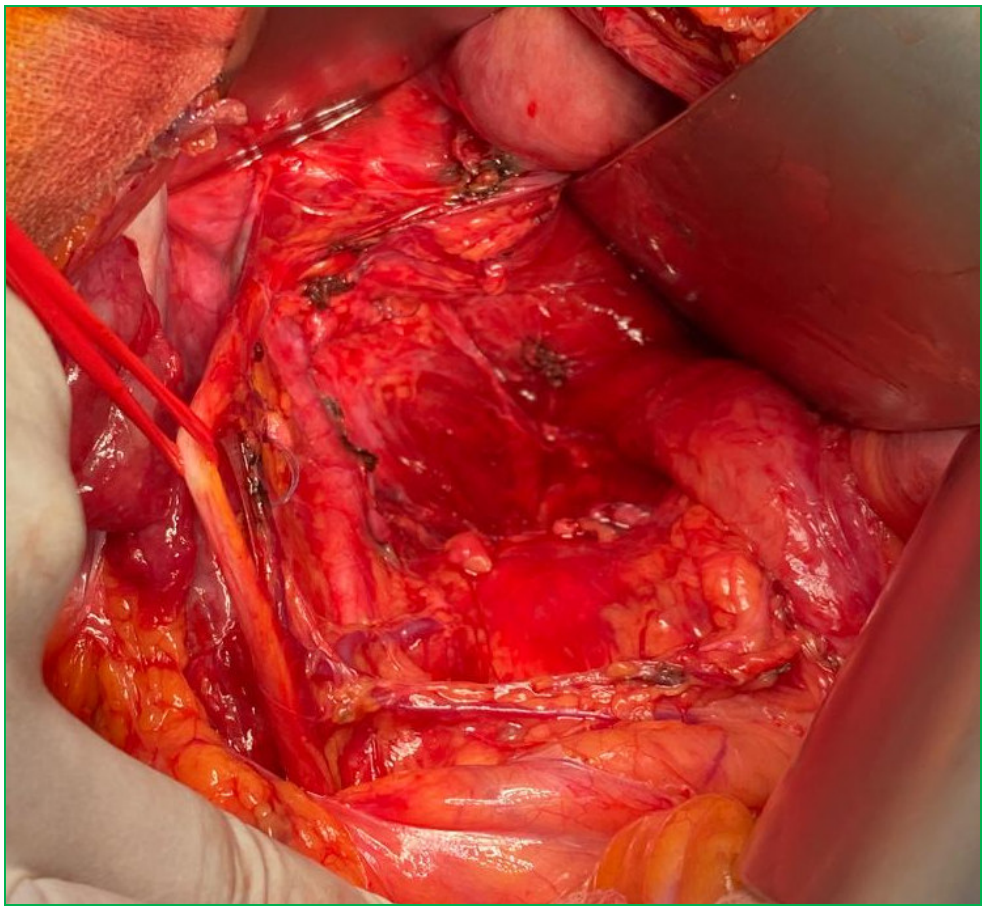

Figure 6. End result of the procedure. Note the left ureter and iliac vessels.

Figure 7. The resected specimen.

3. Discussion

Imaging studies such as CT and MRI play an important role in determining the nature and extent of the lesion. They ought to be used in a complementary fashion rather than exclusive. MRI is superior in detailing soft tissues and determining the planes of resection, whereas CT can help with the nature of the lesion, the involvement of

bone or other surrounding tisues. However, these should be aided with fibro-colonoscopy, fistulograms or transrectal ultrasound where applicable.

Preoperative biopsy is a controversial topic. Many authors do not recommend routine biopsy due to the risk of the spread of metastatic disease or infection in different anatomical layers. Since it would likely not change the course of treatment, biopsy is discouraged. Some rare tumors however, may benefit from neoadjuvant chemotherapy, such as neurofibrosarcomas. The recommended route for obtaining the biopsy is transperineal or presacral, as any other route would mandate the surgical removal of the biopsy tract in case of malignancy.

With regards to the operative strategy, it is at the discretion of the surgeon to choose the best strategy for excision, whether it is anterior transabdominal or posterior trans-sacrococcygeal. The involvement of other specialists in the operating team may be necessary due to possible unexpected tumor type organ involvement.

4. Conclusion

In conclusion, presacral tumors have a relatively high potential for malignancy or complications, thus surgical resection is recommended, especially in symptomatic patients. Surgeons should take all the information available from different imaging studies such as CT and MRI to device the correct surgical strategy.

In this case, the coordinated efforts of a multidisciplinary team resulted in the adequate diagnosis and treatment for the patient.

Conflict of interest

The author(s) declare(s) that there is no conflict of interest. The authors alone are responsible for the content and writing of the paper.

Financial disclosure

There is no financial support to this study.

Ethical aspect

Informed consent was obtained from all participants in the study and all procedures were conducted in accordance with the Declaration of Helsinki.

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