STRATEGY OF SURGICAL TREATMENT OF GIANT PRESACRAL TUMOR - A CASE REPORT

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STRATEGY OF SURGICAL TREATMENT OF GIANT PRESACRAL TUMOR - A CASE REPORT (Abstract): Presacral tumors are uncommon lesions that can be difficult to diagnose because of their nonspecific presenting signs and symptoms. Surgery is the mainstay of treatment as it establishes the diagnosis and prevents the adverse consequences associated with malignant degeneration and secondary bacterial infection. Large, highly vascularised pelvic tumors may pose intraoperative difficulties as bleeding and intraoperative tumor perforation. Cross-sectional imaging is essential in evaluating these lesions to determine the optimal surgical approach and the extent of resection. We emphasize a multidisciplinary expert individualized approach. We report a case of a presacral giant gastrointestinal tumor initially considered as unresectable but further on successfully managed by preoperative vascular embolization followed by resection via abdomino-perineal approach. Keywords: PRESACRAL TUMOR, ANGIOEMBOLIZATION, RESECTION, PRESACRAL SPACE.

Presacral or retrorectal tumors represent a spectrum of heterogeneous lesions ranging from simple benign cysts to complex malignant masses invading surrounding pelvic structures. The incidence of presacral tumors in the general population is not known, as the majority of reports on these lesions are from tertiary referral centers and thus do not represent the true incidence of these tumors (1).

Despite their infrequent occurrence, a basic comprehension of the etiology, presentation, diagnostic evaluation and management of these lesions is important as incorrect diagnosis or inappropriate management can result in significant morbidity and adverse outcome (1). The only large series not from a referral center was published almost 30 years ago by Uhlig and Johnson and found an average incidence of two presacral tumors per year in the metropolitan Portland area (2).

The benefit of percutaneous or laparoscopic biopsies in the presacral region has not been presented thoroughly in the literature since this region known to have unique anatomic and oncologic properties (3). The standard treatment for the most giant presacral tumors remains the complete surgical resection, with the aim to obtain negative microscopic margins over the organ origin. However, because of the anatomic site and
tumor size, complete resection is either not feasible or possible only through extensive aggressive procedures with expected major functional morbidity (4).

Angioembolization can be used for many types of malignant tumors to achieve good surgical results. It may be employed either preoperative or palliative to alleviate symptoms and reduce further dissemination as well as increasing the response to other treatment modalities by occlusion of the feeding vessels in order to cut off the growing of the tumor using different substances (5).

**CASE REPORT**

A 38 years old man, with no previous medical history, was admitted for a palpable right abdomino-pelvic mass, lower abdominal pain with difficulty in voiding and passing motion for two weeks associated with history of chronic constipation on laxatives and poor appetite. There was no history of fever, vomiting, hematemesis, melena and hematuria. No neurological symptoms were recorded. A weight loss of 5 kg was recorded in 6 months. The patient was initially diagnosed in his country two years ago when only an excision biopsy was performed via laparotomy because of the large volume and high vascularisation of tumor. The pathological examination showed a perihistiocytoma. Thus, chemotherapy was advised but not done. Abdominal examination revealed a soft, firm palpable well defined tender mass at the right lower quadrant extending to the pelvis. Hernia orifices and genitalia were free as well as renal angles. A digital rectal examination revealed a retro rectal mass invading the posterior wall of the rectum and normal mucosa. Colonoscopy was normal.

Computed tomography (CT) showed large well defined mass in the pelvis located at the presacral area, measuring 15 x 10 x 20 cm in size, with calcification and much dilated tortuous venous drainage channels; erosion and osteolytic destruction of coccyx and S5 were present. The tumor extended to the left ischiorectal fossa pushing the rectum right antero-laterally and the urinary bladder superiorly (fig. 1). CT scan of the thorax was normal.

![Fig. 1. CT finding of a huge mass filling the whole pelvis with infiltration of sacral bone](image-url)
Strategy of surgical treatment of giant presacral tumor. A case report

Laparoscopic incision biopsy was performed. Histopathology revealed hypercellular spindle cell tumor and no mitotic activity. The case was discussed in multidisciplinary meeting and the consensus was for angioembolization followed by surgical resection. Angiographic evaluation and super selective embolization for right internal iliac feeding branches was performed (fig. 2).

Fig. 2. Angio-CT showing complex vascular network of the tumor

Three weeks post-embolization the patient underwent complete surgical excision of the mass through abdomino-perineal approach, the tumor was resected en bloc including rectum, sigmoid and oscocygum and a permanent colostomy was performed. The mass weighted 1.5 kg and measured 18 x 11 x 9.5 cm (fig. 3).

Fig. 3. Specimen of resected mass with intact mesorectal surrounding fascia
Intraoperatively, the hypervascular tumor was dissected successfully and carefully from all adjacent structures - urinary bladder, both ureters, as well as iliac vessels and sigmoid colon. Metastatic nodules were noted only on cecum and one ileal loop and were wedge resected as frozen sections turned positive. The postoperative recovery was, except stress incontinence grade II, uneventful and he was discharged in good general condition. Glivec (Imatinib) therapy has been started because of the metastasis to the cecum and small bowel as well as the giant size of the tumor.

Histopathology revealed extra-gastro-intestinal stromal tumor (EGIST), mixed type, predominant spindle cells type with 20% necrosis of the tumor. The tumor was highly cellular with high grade histological; margins were positive for the tumor, mitotic rate 11/50 HPF and lymphovascular invasion. The pathology TNM staging – pTNM was recorded as T4 N0 M1.

DISCUSSION
Extensive pelvic surgery in oncologic patients is highly demanding because of the irregular and complex shape of the bony pelvis, numerous muscles attachments and the proximity of major blood vessels, nerves and visceral organs. Surgeon's ability with the extent and involvement of vital structures determine the resectability, keeping in mind that inadequate clearance results in local recurrence. Retrosacral space is a virtual space also called retrorectal space and retrorectal tumors are rarely encountered in surgical practice. Irrespective of their origin they cause similar symptoms and due to their location in presacral space. Although in 26-50% of cases are asymptomatic, the majority of patients present with vague symptoms reflecting the compression, displacement or invasion of pelvic structures, viscera and nerves (4), and occasionally with perirectal pain, mass sensation, constipation, painless rectal bleeding, change in caliber of stool, or urinary frequency (6).

Generally, malignant or inflammatory tumors present with pain (7). Differential diagnosis of retro-rectal tumors can be narrowed using a combination of diagnostic tools. Thorough history and comprehensive clinical assessment including per rectal examination are essential as retro rectal tumors are palpable as extrinsic masses, and they are usually soft and compressible (7). These features may lead to misdiagnosis unless the examiner is careful and suspicious in his examination (2). In case of rectal bleeding, colonoscopy can rule out any mucosal pathology, on the other hand, barium enema can detect extrinsic mass but it will not add additional information (7). CT or MRI scan are the optimal imaging modality to delineate the margin, location and the extent of the tumor as well as possible invasion and displacement of adjacent structures, which is vital for decision making regarding surgical approach, also will add more information regarding the metastases as well, when dealing with malignant tumors (8, 9). Radiological evidence of sacral erosion is the only reliable indicator of malignant pathology as in reported case (10).

Angiography is advisable for highly vascularized tumor to evaluate the relation of the major blood vessels to and around the tumor to define the road map for the resection, in the same time it will illustrate the vascularisation of the tumor which can be tackled by selective embolization in order to decrease the tumor size by blocking the feeding branches. This multidisciplinary approach markedly decreased blood
loss and improved visualization to help in achieve complete surgical resection and resolution of clinical symptoms (11, 12).

Complete surgical resection is the main-line of treatment for all presacral tumors even if they are thought to be benign (4). The approach is dictated by the size, site, and the extent of the tumor also the tissue planes between neighboring structures, which mandate a more aggressive approach if it's malignant tumor. The surgeons need to think three dimensionally in approaching such a huge tumor and in many patients both abdominal and pelvic dissection are required. Moreover, positioning of the patient plays an essential role for total excision. The presacral space may be approached anteriorly (abdominal), posteriorly (transsacral / transcoccygeal), combined anterior-posterior, an anterior approach is performed in a tumor with lowest extension above the fourth level of the sacral element, while the posterior approach preferred for small tumors which doesn't extend above the level of the fourth sacral elements (13). Third approach is the combination between two methods for large tumor beginning under the fourth level of the sacral element and extending above it and it is selected for high grade malignant disease involving adjacent organs (13). These different kinds of approaches should offer a wide abdominal and pelvic exposure in order to achieve good hemostasis as the surgeon may encounter considerable difficulties in controlling presacral bleeding. Overall, 45%-50% of presacral tumors are malignant or have areas of malignant changes in them (7). The consistency may vary and solid tumors are more prone to be malignant than cystic lesions (60% vs. 10%) (14).

Successful surgical dissection demands optimal exposure, skill in dealing with intestinal adhesions, meticulous hemostasis that is maintained throughout the procedure, a thorough the knowledge of anatomy, a plan of attack the tumors at difficult anatomic sites and experience in reconstruction is needed. Undoubtedly, the best results will be obtained by high volume centers with special interest in this form of surgery.

CONCLUSIONS
Surgical approach with different technique of dissection following the path of the least resistance is a wise policy in working round large tumors. Tumor angioembolization may precede surgery for selected patients with large, highly vascularized tumors.

It is certainly a team work involving a panel of expert colorectal surgeons, interventional radiologists and medical oncologist with significant clinical experience.

REFERENCES

NEW ANTIBIOTIC IN TREATING EXTENSIVELY DRUG-RESISTANT TUBERCULOSIS

Extensively drug-resistant tuberculosis (XDR-TB) is a form of tuberculosis that is resistant to at least rifampicin and isoniazid as well as to any member of the quinolone family and at least one of the following second-line anti-TB injectable drugs: kanamycin, capreomycin, or amikacin. Treatment requires extensive chemotherapy for up to two years and can cause serious side-effects. A significant number of patients with XDR-TB develop resistance to treatment. A group of Korean researchers conducted a clinical trial on the use of linezolid in the treatment of pulmonary XDR-TB (sputum-culture–positive after six months of treatment). The researchers found that 87% of patients enrolled in the study had no positive cultures after 6 months of treatment with linezolid. In the study, 82% of patients experienced clinically significant adverse reactions, resolved quickly after briefly stopping the drug or using the lower dose. The study concluded that linezolid is a therapeutic option in XDR-TB but dose adjustment is necessary to reduce adverse effects in long-term treatment (Myungsun Lee, Jongseok Lee, Matthew W. Carroll et al. Linezolid for Treatment of Chronic Extensively Drug-Resistant Tuberculosis. N Engl J Med, 2012; 367:1508-1518).

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