

Benign retrorectal tumours: Contribution of laparoscopic approach

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ABSTRACT

Introduction: Presacral tumours are extremely rare entities as the asymptomatic retrorectal mass, although its clinical presentation includes infectious complications and signs of malignant degeneration. Magnetic resonance imaging is the most efficient imaging study for its diagnosis. The treatment of choice is complete surgical excision and traditional approaches are mainly through abdominal, posterior and perineal approach, depending on anatomical characteristics of the lesion. Laparoscopic excision of these retrorectal lesions has been reported in a few cases. **Patients and methods:** We report two cases of 38 and 24-year-old women who complained of anorectal symptoms and were diagnosed as retrorectal tumour by imaging studies. One of them was infected. Both cases were resected by means of laparoscopic techniques. There was no surgical complication and they were discharged on the 3rd and 4th postoperative day, respectively. Histopathologic findings revealed benign cystic teratoma in both cases. A follow-up after 36 months showed no recurrence. Our surgical endoscopic technique and a brief review of perioperative cares are presented and discussed. **Discussion:** Laparoscopic excision could be indicated in selected retrorectal tumours and a great surgeon's resolve is always required. A meticulous dissection must be performed in order to identify and preserve vital structures. It's only absolute contraindications seemed to be the suspicion of malignancy and operative inexperience. **Conclusions:** The complete laparoscopic removal of presacral lesions

is a responsible surgical procedure which offers advantages from the sanitary and aesthetic point of view. This new endoscopic indication could be considered probably as a better technique than open approach in selected patients.

Keywords: Retrorectal; Tumour; Laparoscopy; Surgical Technique

1. INTRODUCTION

Retrorectal tumours are rare entities with a low incidence and usually have a congenital origin. They can be a cystic or solid mass and are divided into benign, mostly, and malignant masses [1].

The possibility of malignity is increased in younger patients although a solid mass is a higher associated risk factor.

Most cases are asymptomatic but its semeiology is related to presacral location, size and infection. Pain is the most common symptom in adult patients [2] but digestive and urinary disturbances and fistulas are possible.

The first diagnostic study should be focused on identifying the extraluminal nature of the lesion by an endo-anal exploration. Magnetic resonance imaging is the radiological study of choice, currently, because it offers more information than CT scan about tumoral characters and neighbouring anatomical structures [3,4]. Imaging diagnosis is one of the main bases to elaborate a right surgical planning.

The definitive diagnosis leads to a complete resection of the lesion even though it was asymptomatic and suspicion of benignity. Preoperative biopsy is not recommended [5] due to the risk of septic complications and tumoral seeding.

We present our experience in two presacral masses

managed by laparoscopic approach successfully. Additionally, we report our indications, criteria of selection and details of the surgical technique.

2. PATIENTS AND METHODS

Case report 1: A 38-year-old female was attended as an outpatient complaining of rectal tenesmus of one month's duration and pruritus on external genital organs with right-sided perineal swelling.

On examination, she had tenderness in hypogastrium with no guarding. A combined rectal-vaginal exploration revealed an extraneous compression by a well-delimited soft tumour of large size on presacral space and reached the promontory.

An abdominal ultrasonograph showed a pelvic homo-

geneous lesion measuring 6 centimetres on its maximum diameter and independent of genital structures. A computed tomography scan of the pelvis (**Figure 1**) was informed of an encapsulated cystic tumour with fatty density and a partial calcification in its outer wall which was located on right pararectal space and displaced uterus and rectum into the left side without infiltrating them.

A laparoscopic approach was planned and she underwent a removal of a subperitoneal cystic mass on Douglas pouch. Peritoneum was sectioned and presacral space dissected in a careful and meticulous way in order not to damage nearing anatomical structures.

There was not any post-operative complication and histopathological finding (**Figure 2**) was informed of benign cystic teratoma. She left the hospital on the third

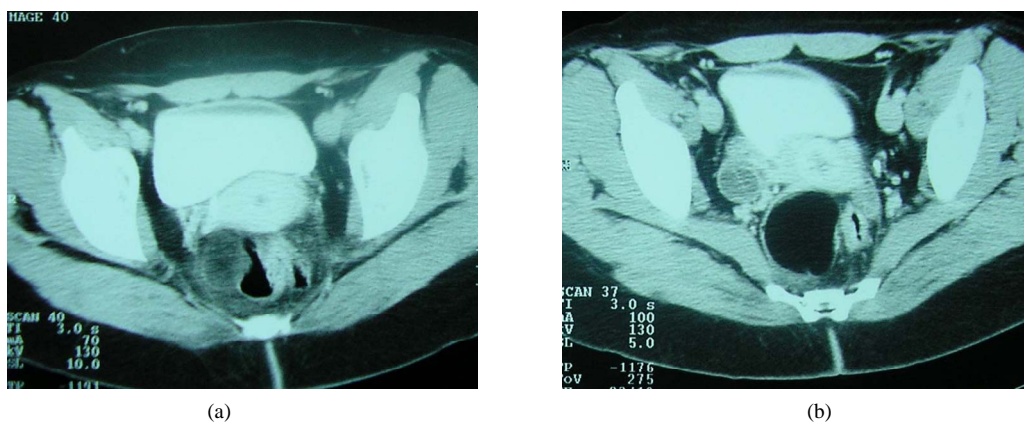


Figure 1. Computed tomography scan of the pelvis showing a presacral tumour with its anatomical relationships (a) on a right pararectal location and an important encapsulated cystic component (b) displacing but not infiltrating rectum.

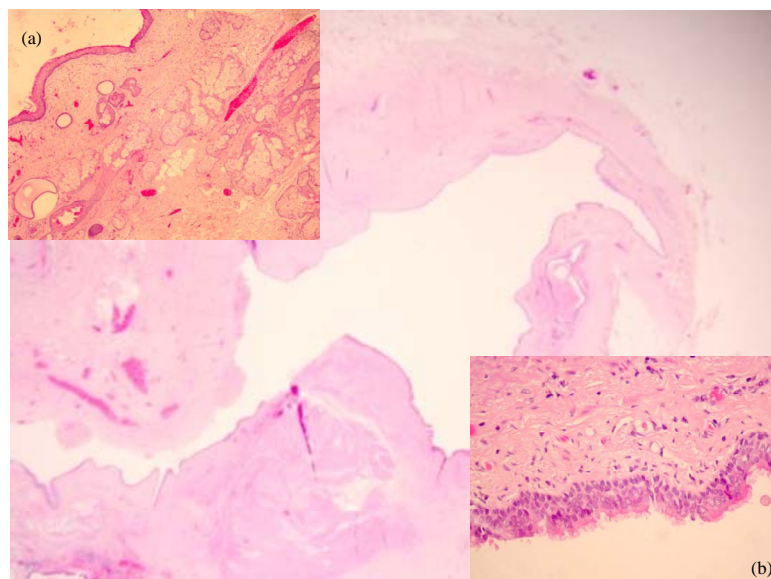


Figure 2. Histological sample revealed a cystic structure with a keratinous squamous epithelium and plenty of pilosebaceous complexes (a). Several smooth muscular cells can be seen on subepithelium (b).

day after surgical operation. Nowadays, she feels asymptomatic and without evidence of recurrent lesion.

Case report 2: A 24-year-old female without a past medical history was referred to our hospital suffering from anal pain and fever of one week's duration.

She suffered from a very painful spasmus in internal sphincter during rectal examination. A fistulous orifice was seen on posterior anal commissure.

She underwent proctological exploration under anesthetic effects and a great deal of pilous pus was drained through fistulous tract. An extraluminal mass was palpable on posterior wall of the rectum.

We suspected a presacral abscess and the diagnosis was completed by a magnetic resonance imaging of the pelvis which showed a large presacral dermoid cyst without infiltrating any pelvic structure.

A laparoscopic complete excision of the retrorectal mass was performed although a combined perineal approach was necessary due to the fistulous connection between the tumour and the perineum.

Histologically, the suspected dermoid cyst was confirmed. The patient was discharged on 4th post-operative day without any complications. There are no signs of recurrence currently.

The patients were initially placed in the supine position with both arms tucked against the sides. Pneumoperitoneum was achieved by Hasson's trocar in both patients and the peritoneal cavity was insufflated to a maintained pressure of 12 mmHg. The access to the pelvis was facilitated by placing our patients in the Trendelenburg position in order that the viscera fell away from there. Additionally, her legs were separated for an eventual perineal approach.

The television monitor was placed at the patient's legs, near her feet, the operating surgeon on the left or right upper limb according to the anatomical conditions of the tumour. We prefer both upper limbs stay stretched to avoid iatrogenic nerve lesions on brachial plexus. The instrumental nurse stood by the operating surgeon and the assistant surgeon at the contralateral upper limb of the patient.

The abdominal access was performed through four trocar sites: A Hasson's 10 mm-port was placed either in the umbilicus or immediately above it to achieve pneumoperitoneum and insert a 0°-laparoscope, although it was useful a 30°-optic in the second patient too. Another 10 mm-port for dissection, cutting, electrocautery or ultrasonic instruments; located at the midclavicular line on the same operating surgeon's flank. Two 5 mm-trocars, one of them alined with the port before for tissue-grasping forceps and the other one at the contralateral flank for assistant surgeon, who will be responsible for another tissue-grasping forceps (**Figure 3**).

The surgical technique consisted of an overall explo-

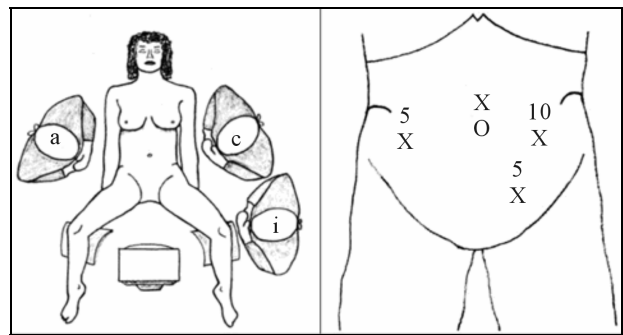


Figure 3. Drawing shows one of the possible laparoscopic setups and the trocar placement for removal of presacral mass: The operating surgeon (c) usually stands on the side contralateral to the lesion, depending on his preference, with a nurse (i) on the ipsilateral side. The assistant surgeon (a) stands opposite the first surgeon. The laparoscope is inserted through the umbilical port. Two additional trocars, 10 and 5 mm, are placed in the midclavicular line on the operating surgeon's side and a third trocar, 5 mm, should be located in the contralateral side to the first surgeon.

ration of the abdominal cavity. It was used to find the presacral lesion displacing the rectum anteriorly. We consider that it is not essential to descompress the mass although it could improve the technical performance. We started the dissection by incising peritoneal surface near the lesion using scissors. The ultrasonic shears were very useful for controlling haemostasia. The laparoscopic pelvic dissection could carry on anal elevator muscle easily when there is a perineal extension of the tumour, completing its excision by perineal approach.

The excised tumour will be placed in an endobag and delivered out through a short McBurney's incision on left iliac fossa profiting by 5 mm-port.

A sucking drain tube, anchored in the right abdominal flank, was placed in the pelvis for two or three days according to the characteristics of the drainage.

Total operating times were 115 and 165 minutes, respectively. The second patient was transfused one unit of whole blood in the early post-operative. Oral diet was allowed on the first postoperative day with no incidences. They were discharged asymptomatic and their bowel motions recovered. The healing of the wounds were watched by their general practitioner and the first follow-up was one month after discharge but a magnetic resonance imaging isn't requested until six months after surgical resection.

3. DISCUSSION

Presacral space consists of soft connective tissue and is limited by sacral anterior surface, rectal posterior wall, anal elevator muscle, iliac vessels and ureters.

Retrorectal tumours could be divided into inflammatory, congenital cysts, osseous and neurogenic lesions [6].

Miscellanea with leiomyoma, fibroma, lipoma, lymphoma and metastatic and carcinoid tumours are also included in this location.

They can be asymptomatic for a long time but could cause semeiology due to the pressure effect such as the perineal swelling or infectious complications as perineal and rectal fistula, some of them shown in our reported cases. Another possibility is its malignant degeneration [7] which would modify the operating attitude.

There is not any standard guidelines in the management of these tumours due to its low incidence and there has been described several surgical procedures depending on both complications and anatomical conditions [8].

The traditional surgical approaches are via the perineal, posterior, abdominal and combined via, depending on location and size lesion [9]. The surgical outcome is good in benign tumours. There has been reported a complete resection in all cases of benign tumours and most of malignant cases with a little rate of postoperative complications [10].

The transanal approach or through intersphincterial resection [11] could be indicated in patients with benign tumours of small size and distal presacral location. One of the less injurious posterior accesses is via the parasacrococcygeal because it provides with an excellent anorectal exposure and preservation of the sphincter mechanism. Its indication would be preserved to the rest of low tumours.

Abdominal approach is the access of choice in large size tumours which exceed the promontory and in suspicion of malignancy, a lot of them improving with a combined approach because of their size and anatomical disposal. Besides, it allows a better vascular and ureteral check.

The development of laparoscopic technique has promoted an increased usefulness in this kind of pathology recently [9,12]. Some of the advantages of this approach are the exact identification of anatomical situation of the mass and its relationship to other adjoining structures, and the possibility of extending rectal dissection to anal elevator musculature with a small assumed morbidity with respect to an open procedure. The pathological characteristics of the lesion or its perineal implication could force a combined access as in the second case.

The performance of this kind of minimal aggressive procedure could be difficult because of technical complexity and local conditions of the tumours which demand a surgical team with a huge experience in laparoscopic technique. A conversion to laparotomy is an option to be taken into account.

This inconvenience is explained by a plane of tumoral dissection difficult to identify and the thickness of wall which determines a meticulous resection in a highly susceptible bleeding area. We advise the practice of ultra-

sonic instruments [13] because these masses are used to feed by a rich diffuse network of vessels. On the other hand, the surgical management consists of complete resection with included wall to avoid a recurrence even though a cystic mass of large size could be a candidate to decompress without spillage piercing abdominal wall, with a sucking tube placed into the lesion until it collapses.

This strategy makes its manipulation easy and reduces the risk of septic widespread in the pelvic cavity in case of rupture.

These local difficulties in identifying neighbouring anatomical structures can cause the removal to become complicated. We consider the vital importance of identifying and preserving urinary bladder and ureters, pelvic vessels and hypogastric nerves.

In our own opinion, the current only absolute contraindication in the laparoscopic approach would be a clinical suspicion of malignancy. An infested mass should be considered as a relative contraindication in this therapeutic attitude.

In conclusion, the laparoscopic approach in retrorectal tumours could be a safe and feasible surgical access from the technical point of view and with the same criteria of removal and curing as traditional open resection [14]. Furthermore, its main advantages are an earlier oral tolerance, a short hospital stay, a low incidence of postoperative complications, less pain and excellent cosmesis.

Before confirming the indication of this operating approach, it is required putting the test patience and resolve to the surgical team who must hold a high experience in minimally aggressive techniques.

REFERENCES

- [1] Ghosh, J., Eglinton, T., Frizelle, F.A. and Watson, A.J. (2007) Presacral tumours in adults. *Surgeon*, **5**, 31-38. [http://dx.doi.org/10.1016/S1479-666X\(07\)80109-0](http://dx.doi.org/10.1016/S1479-666X(07)80109-0)
- [2] Messick, C.A., Londono, J.M. and Hull, T. (2013) Presacral tumors: How do they compare in pediatric and adult patients? *Pol Przegl Chir*, **85**, 253-261.
- [3] Pappalardo, G., Frattaroli, F.M., Casciani, E., Moles, N., Mascagni, D., Spoletini, D., *et al.* (2009) Retrorectal tumors: The choice of surgical approach based on a new classification. *The American Surgeon*, **75**, 240-248.
- [4] Coco, C., Manno, A., Mattana, C., Verbo, A., Sermoneta, D., Franceschini, G., *et al.* (2008) Congenital tumors of the retrorectal space in the adult: Report of two cases and review of the literature. *Tumori*, **94**, 602-607.
- [5] Vega-Menéndez, D., Quintans-Rodríguez, A., Hernández-Granados, P., Nevado-Santos, M., García-Sabrido, J.L. and Rueda-Organ, J.A. (2008) Hamartomas quísticos retrorectales. *Cirugía Española*, **83**, 53-60. [http://dx.doi.org/10.1016/S0009-739X\(08\)70506-2](http://dx.doi.org/10.1016/S0009-739X(08)70506-2)
- [6] Hobson, K.G., Ghaemmghami, V., Roe, J.P., Goodnight,

- J.E. and Khatri, V.P. (2005) Tumors of the retrorectal space. *Diseases of the Colon & Rectum*, **48**, 1964-1974. <http://dx.doi.org/10.1007/s10350-005-0122-9>
- [7] Maruyama, A., Murabayashi, K., Hayashi, M., *et al.* (1998) Adenocarcinoma arising in a tailgut cyst: Report of a case. *Surgery Today*, **28**, 1319-1322. <http://dx.doi.org/10.1007/BF02482826>
- [8] Szylo, K. and Lesnik, N. (2013) Sacrococcygeal teratoma—Case report and review of the literature. *American Journal of Case Reports*, **14**, 1-5.
- [9] Köhler, C., Kühne-Heid, R., Klemm, P., Tozzi, R. and Schneider, A. (2003) Resection of presacral ganglioneurofibroma by laparoscopy. *Surgical Endoscopy and Other Interventional Techniques*, **17**, 1499.
- [10] Lev-Chelouche, D., Gutman, M., Goldman, G., Even-Sapir, E., Meller, I., Issakov, J., *et al.* (2003) Presacral tumors: A practical classification and treatment of a unique and heterogeneous group of diseases. *Surgery*, **133**, 473-478. <http://dx.doi.org/10.1067/msy.2003.118>
- [11] Pescatori, M., Bruscianno, L., Binda, G.A. and Serventi, A. (2005) A novel approach for perirrectal tumours: The perianal intersphincteric escisión. *International Journal of Colorectal Disease*, **20**, 72-75. <http://dx.doi.org/10.1007/s00384-004-0623-3>
- [12] Chen, Y., Xu, H., Li, Y., Li, J., Wang, D., Yuan, J. and Liang, Z. (2008) Laparoscopic resection of presacral teratomas. *Journal of Minimally Invasive Gynecology*, **15**, 649-651. <http://dx.doi.org/10.1016/j.jmig.2008.06.011>
- [13] Palanivelu, C., Rangarajan, M., Senthilkumar, R., Mandankumar, M.V. and Annapoorni, S. (2008) Laparoscopic and perineal escisión of an infected “dumb-bell” shaped retrorectal epidermoid cyst. *Journal of Laparoendoscopic & Advanced Surgical Techniques*, **18**, 88-92. <http://dx.doi.org/10.1089/lap.2007.0010>
- [14] Paul, P.G., Pravinkumar, T. and Sheetal, B. (2012) Sacrococcygeal neurofibroma: Rare cause for chronic pelvic pain. *Journal of Minimally Invasive Gynecology*, **19**, 517-520.