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Pandora's box and retrorectal tumors in laparoscopy: A case report and review of the literature

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ABSTRACT

INTRODUCTION: Retrorectal tumors are uncommon and the etiology diverse. Literature to define the preoperative diagnosis and plan the intraoperative management are uncommon.
PRESENTATION OF CASE: We describe a case of a 44 year old patient with a laparoscopic approach for the removal of a retrorectal tumor and emphasize on the preoperative diagnostics and the intraoperative, minimal invasive approach.
DISCUSSION: Especially because these tumors are rare and often an incidental finding in gynecologic surgery, it is important to know the various differential diagnoses and its consequences with the laparoscopic approach.
CONCLUSION: We suggest the laparoscopic approach in cases of retroperitoneal cysts of unknown origin is ideal also because anatomic structures, mostly nerves, can be easily spared.

1. Introduction

Retrorectal tumors are uncommon with an incidence of about 1 in 40,000 patients [1,2]. This small group of tumors may present with various histological findings. The etiology of retrorectal tumors can be divided into five groups: congenital, inflammatory, osseous, neurogenic and others [3,4]. 60% of retrorectal tumors arise from embryologic tissues [5,6]. Depending on the cell layer of origin, these cysts can be divided into the following types: epidermoid cysts, dermoid cysts, enterogenous cysts, tailgut cysts, and teratomas [7]. Histological findings of these cysts commonly confirm inflammatory signs or abscess formation potentially due to microtrauma [8]. A malignant transformation is very rare but has been described in the literature [2,9]. 81% of patients with a retrorectal tumor are middle-aged women and often these cysts are falsely identified preoperatively as adnexal masses resulting in gynecologists treating these patients. Preoperative diagnostics of these tumors are of great importance because of the wide variety of origin. We present a case of a laparoscopic approach for the removal of a retrorectal cyst and review the literature emphasizing the laparoscopic approach and preoperative diagnostics.

2. Case report

Due to the feeling of pelvic pressure and dyschezia, a 44 year old patient was diagnosed with a 6 cm × 5 cm adnexal mass, which was detected by vaginal examination and confirmed by ultrasonography. After a three-month treatment with oral gestagens, the mass grew to a size of 6 cm × 7 cm and laparoscopic removal was suggested. Intraoperatively, both ovaries were surprisingly normal. A retroperitoneal cystic mass was seen on the left side of the pelvis and the surgeon decided to admit the patient to the university clinic for further treatment.

Preoperative MRI (magnet resonance imaging) (Fig. 1) showed a mostly retrorectal tumor measuring 6 cm × 7 cm. Tumor markers (CA-125, CEA, alpha-fetoprotein, HCG) were normal. Because a Tarlov cyst could not be excluded, a myelography was performed, this was normal. We decided to approach this retrorectal tumor by laparoscopic surgery.

After identifying the ureter, the peritoneum was opened longitudinally (Fig. 2). The cystic mass was identified lying retrorectally (Fig. 3). Whilst sparing the splanchnic nerves (Fig. 4), the cyst could be dissected and removed without rupturing the capsule. Operating time was 90 min. Blood loss of less than 100 ml was measured. No intraoperative complications occurred. Histology showed an

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Table 1
Retrorectal tumors published in the surgical literature.

Authors	Cases	Sex	Diagnosis	Approach	Size (cm)	Preoperative diagnostics	Complications intraOP comments	Removal of tumor
Sharpe 1995	1	F	Dermoid cyst	Laparoscopy	5 × 3 × 2		None	Exzision in toto
Melvin 1996	1	F	Schwannoma	Laparoscopy	2.2 × 2.5	MRI, CT	None	Exzision in toto
Salameh 2002	1	F	Rectal duplication cyst	Laparoscopy	5 × 5.3 × 6	MRI, CT	None	Exzision in toto function intraoperative with suction of the fluid
Köhler 2003	1	F	Ganglioneurofibroma	Laparoscopy	10 × 8.5 × 7	US, MRI	None	Exzision in toto
Bax 2003	5	F	Sacrococcygeal teratomas	Laparoscopy and post sacral	NA	–	One was only ligation of artery and one had to be converted because of size of tumor (all children)	All Exzision in toto removed all also over posterior path, The main goal was mobilization of the cystic structures and lig. of the sacral artery
Lukish 2004	2	F	Sacrococcygeal teratomas	Laparoscopy and post sacral	10 × 5 × 4:15 × 15 × 10	MRI	None	Both Exzision in toto via sacral incision, LSC ligation of the spinal artery
Konstandtidinis 2005	2	F	Schwannomas	Laparoscopy	2.5 × 4:3 × 6	CT, MRI	None	Exzision in toto
Gunkova 2008	1	F	Tuboendometrial metaplasia	Laparoscopy	10 × 8 × 6	CT	None	Exzision in toto
	1	F	cyst Epidermoid cyst	Laparoscopy	10 × 5.5 × 5	CT		
Chen 2008	1	F	Teratoma	Laparoscopy	10 × 8.5 × 8	CT	None	Exzision in toto
Palanivelu 2008	1	F	Epidermoid cyst	Laparoscopy and perineal incision	16 cm × 10 cm	US, CT	None	Cyst first functioned in LSC, then Exzision in toto perineal
Bon 2011	15	13F, 2M	4 teratoma, 4 neurilemomma 1 chondrosarcoma	4 LSC, one combined with post. approach	Mean 6.2 cm	CT, MRI	None	All LSC Exzision in toto without capsule rupture
Lim 2011	1	F	Tailgut cyst	Laparoscopy	3.9 mm × 3.3 mm	CT, MRI	None	Exzision in toto
Rao 2010	1	F	Schwannoma	Laparoscopy	90 mm	MRI	None	Exzision in toto
Lu 2010	1	F	Tailgut cyst	Laparoscopy	12 cm × 10 cm	US, CT	None	Tumor ruptured intraoperative, Exzision in toto
Nishi 2000	1	F	Neurogenic tumor	Laparoscopy	–	–	None	Exzision in toto
Asuquo 2011	1	F	Myelolipoma	Laparoscopy	3.5 × 1.7	PET CT	None	Subtotal excision because histology in frozen section benign
Marinello 2011	4	F	Teratoma	Laparoscopy	11 × 5.5 × 3.5	CT	None	Exzision in toto
		F	Solitary fibrous tumor	Laparoscopy	7.5 × 4.4 × 4.4	US, MRI	None	
		M	Schwannoma	Laparoscopy and post sacral	10 × 6 × 1.5	MRI	Wound infection	
		M	Schwannoma	Laparoscopy	6.5 × 6 × 4	MRI	Residual collection	
Nedelcu 2013	9		4 schwannoma 1 para ganglioma 2 tailgut cyst 1 meningocele Ganglioneuroma	Laparoscopy	Mean size of the tumor 6.8 cm (range 3–11.5)	All MRI	1 conversion	Exzision in toto