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A multicenter experience with peri-rectal tumors: The risk of local recurrence

N.C. Buchs [a,b,*], M.P. Gosselink [c], C.R. Scarpa [b], F. Ris [b], E. Saiji [d], A.L.A. Bloemendaal [a], R.S. van Onkelen [c], R.J. Guy [a], W.R. Schouten [c], B. Roche [b], B.D. George [a]

[a] Department of Colorectal Surgery, Churchill Hospital, Oxford University Hospitals, Oxford, UK
[b] Clinic for Visceral and Transplantation Surgery, Department of Surgery, University Hospitals of Geneva, Geneva, Switzerland
[c] Department of Surgery, Erasmus MC, Rotterdam, The Netherlands
[d] Department of Pathology, University Hospitals of Geneva, Geneva, Switzerland

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Abstract

Background: Peri-rectal tumors are rare and their management is challenging, especially when presenting with local recurrence. The aim of the current study was to report a multicenter series of peri-rectal tumors, focusing on the risk of recurrence.
Material and methods: From 1994 to 2014, patients with peri-rectal tumors from three different centers were retrospectively analyzed. Sixty-two patients were identified and divided into two groups; Group 1: patients who presented with local recurrence at follow-up ($n = 9$, recurrence rate: 14.5%), and Group 2: patients without recurrence ($n = 53$).
Results: In Group 1, there were initially more patients with symptoms of a perineal mass (44.4% vs. 12.2%; $p = 0.04$), more malignant tumors (55.6% vs. 15.1%; $p = 0.02$), and larger lesions (+2.6 cm; $p = 0.004$). Incomplete resection was also more frequent in Group 1 (44.4% vs. 3.8%; $p = 0.003$). Eight patients with recurrence had further surgery, whilst one patient had radiological recurrence and was treated medically. Among the eight re-resections, five patients remain disease-free; two have had further recurrences and have had palliative treatment, whilst another has had a further resection and remains disease-free.
Conclusions: Peri-rectal tumors are uncommon and there is no consensus on best management. Based on this large multicenter series, several risk factors seem to be associated with local recurrence, namely patient- (discovery of a perineal mass), tumor- (malignant and large lesion), and surgery-related (incomplete resection). Clinical follow-up should be adapted according to these factors.

Keywords: Retrorectal; Tumors; Presacral; Surgery; Recurrence; Outcomes; Ischiorectal

Introduction

Peri-rectal tumors are considered rare and reported to constitute 1 in 40,000 hospital admissions.[1] Most general surgeons should expect to encounter at least one patient with a peri-rectal tumor during the course of their careers.[2]

Peri-rectal tumors may arise in different anatomical locations, including the presacral space and the ischiorectal fossa. The anatomy of the presacral (or retrorectal) space has been defined anteriorly by the mesorectal fascia, posteriorly by the presacral fascia overlying the sacrum, and laterally by the lateral stalks of the rectum, the ureters, and the iliac vessels. The retrorectal space extends superiorly to the peritoneal reflection of the rectum, and inferiorly to Waldeyer's fascia.[2–4] Just inferior to the presacral space, the ischiorectal fossa is defined medially by the external sphincter muscles, laterally by the obturator internus muscle and the obturator fascia, anteriorly by the superficial and deep transverse perinei muscle, and inferiorly by the skin of the perineum.[5]

* Corresponding author. Department of Colorectal Surgery, Churchill Hospital, Oxford University Hospitals, Old Road, OX3 7LE, Oxford, UK.
E-mail address: Nicolas.c.buchs@hcuge.ch (N.C. Buchs).

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These areas are the location for the development of multiple embryologic structures, explaining the often heterogeneous nature of these lesions.[2,6]

Peri-rectal tumors remain a diagnostic and surgical challenge. The highly variable clinical presentation of patients with these tumors[7] can lead to their misdiagnosis and therefore their mistreatment. Owing of their rarity, the current literature is mainly based on small series[8–11] and case reports,[12,13] although some large series have been published though,[1,3,7,14–19] reflecting the overall surgical interest. However, the risk of relapse and the risk factors associated with local recurrence are poorly reported and there is a lack of substantial evidences to guide management of these difficult cases.

The aim of this study was to review a multicenter series of peri-rectal tumors, focusing on the risk of recurrence.

Materials and methods

From 1994 to 2014, the peri-rectal tumors from three centers were retrospectively analyzed. Sixty-two adult patients were identified: 27 (43.5%) from the Department of Colorectal Surgery (Oxford University Hospital), 18 (29%) from the Department of Surgery (University Hospitals of Geneva), and 17 (27.4%) from the Department of Surgery (Erasmus MC, Rotterdam). Patients' records were reviewed for patient demographics, preoperative presentation, imaging, biopsy, surgical procedure, pathology, recurrence and further management.

Osteogenic tumors were excluded from the analysis, as were recurrent anal or rectal cancer. Patients younger than 18-years old were also excluded.

The study and the database met the criteria of the local research ethics committee as an audit of practice.[20]

Follow-up involved clinical examination and selective radiological imaging study.

Local recurrence was defined radiologically and histopathologically where possible.

Statistical analysis

The results of parametric and nonparametric data were expressed as mean ± standard deviation (SD) and median (range), respectively. GraphPad Software (GraphPad, La Jolla CA) was used for all statistical analyses. Confidence intervals were set at 95%. A 2-sided p value of ≤ 0.05 was considered statistically significant. Comparisons between both groups were determined using Fisher's exact test for discrete variables and Student's t-test for continuous variables.

Results

Patients' characteristics

Patients' demographics are summarized in Table 1. Most of the patients were female, with a mean age of 44.2 years old. The majority of patients were symptomatic (79.3%); with pain or tenesmus and the discovery of a peri-rectal/perineal mass by the patient itself being the most frequent symptoms. Overall, around one fifth of the patients were asymptomatic and the diagnosis was incidental.

On physical examination, a mass was palpable on digital rectal examination (DRE) in 77.1% of patients.

All the patients had preoperative imaging studies (Table 2), predominantly pelvic MRI. However, 15% required multiple imaging modalities. The mean size of the lesion was 6.2 ± 2.6 cm (range: 1.5–12).

Table 1
Characteristics of the patients with peri-rectal tumors; differences between patients who will present or not a recurrent tumor.

	Entire series (n = 62)	Group without recurrence (n = 53)	Group with recurrence (n = 9)	p Value
Gender				0.19
Female	50 (80.6%)	41 (77.4%)	9 (100%)	
Male	12 (19.4%)	12 (22.6%)	0	
Age, mean ± SD (range)	44.2 ± 14.7 (20–76)	44.7 ± 15.3 (20–76)	40.9 ± 10.4 (23–58)	0.48
Clinical presentation				
Symptomatic	79.3%	75.5%	100%	0.18
Pain/tenesmus	43.1%	44.9%	33.3%	0.72
Mass	17.2%	12.2%	44.4%	*0.04*
Constipation	6.9%	6.1%	11.1%	0.5
Non healing fistula	6.9%	6.1%	11.1%	0.5
Incontinence	1.7%	2%	0	1
Inflammatory syndrome	1.7%	2%	0	1
Abscess	1.7%	2%	0	1
Asymptomatic	20.7%	24.5%	0	0.18
Mass on examination	77.1%	76.9%	88.9%	1

SD: standard deviation.

Table 2
Preoperative management and differences between patients who will present or not a local recurrence.

	Entire series (n = 62)	Group without recurrence (n = 53)	Group with recurrence (n = 9)	p Value
Radiological investigations				
MRI	73.3%	70.6%	88.9%	0.42
CT	31.7%	33.3%	22.2%	0.7
ERUS	13.3%	13.7%	0	0.58
Multiple investigations	15%	17.6%	11.1%	1
Maximum size of the lesion in cm, mean ± SD (range)	6.2 ± 2.6 (1.5–12)	5.8 ± 2.4 (1.5–12)	8.4 ± 2.6 (3.5–12)	*0.004*
Preoperative biopsy	25.8%	22.6%	44.4%	0.22
Diagnostic biopsy	75%	66.7%	100%	0.52

MRI: magnetic resonance imaging; CT: computed tomography; ERUS: endorectal ultrasound; SD: standard deviation.
Statistically significant p values are in italic.