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Original Article

Retrorectal Tumor Surgery: Single Center Study

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ABSTRACT

Objective: Retrorectal or presacral tumors are rare, diagnostically challenging, and pathologically heterogeneous tumors. The exact incidence of these tumors is unknown, but it is estimated that tertiary care centers see 1-6 cases per year. The aim of this study is to evaluate the clinical and surgical outcomes of patients diagnosed with retrorectal tumors and treated surgically at our hospital.

Methods: A retrospective analysis was conducted on 23 patients diagnosed with retrorectal tumors and treated surgically at the General Surgery Clinic of our hospital between 2012 and 2022. Ethical approval was obtained for the study, and demographic data, presenting symptoms, radiological imaging methods, surgical details, and postoperative outcomes were recorded. All patients underwent preoperative radiological evaluation, and the surgical approach was determined based on the tumor's location.

Results: Between 2012 and 2022, 23 patients underwent RRT surgery. Of these patients, 20 (87.0%) were female, with a mean age of 45.2±12.2 (24-65) years. Twelve patients (52.2%) presented with coccygeal pain. On physical examination, a mass was palpated in the rectal examination of three patients (13.1%) and in the vaginal examination of three patients (13.1%). Preoperative radiological examination was performed on all patients; one patient underwent only CT, 12 patients underwent only MRI, and 10 patients underwent both CT and MRI. RRTs were reported as solid in nine patients (39.1%), cystic in ten patients (43.5%), and heterogeneous in four patients (17.4%). Fifteen patients underwent colonoscopy. Colonoscopy revealed external compression findings in two patients, and polyps were detected in three patients and histopathologically benign after polypectomy.

Conclusion: Retrorectal tumors are rare lesions requiring surgical treatment. Surgical interventions performed in experienced centers have shown successful outcomes and low recurrence rates. The management and surgical treatment of these tumors involve evaluating the tumor's imaging findings and location, leading to successful outcomes. This study provides a comprehensive approach to the surgical treatment of retrorectal tumors, emphasizing the importance of appropriate surgical strategies and complication management.

INTRODUCTION

Retrorectal tumors (RRT) are rare tumors that are difficult to diagnose and exhibit pathological heterogeneity. Although the actual prevalence in the general population is not well known, tertiary care centers report diagnosing approximately 1 to 6 cases annually, with an estimated incidence of 1 per 40,000 hospital admissions.[1] Benign RRTs are usually cystic, and malignant tumors are typically solid with necrotic areas and invasive potential. Although the majority of tumors are benign, 21-50% are malignant in natüre.[2]

Retrorectal tumors can originate from various embryological remnants, resulting in different histopathological types like congenital, neurogenic, osseous, inflammatory, or miscellaneous based on their origin. Histopathologically, they are further categorized as benign or malignant congenital and benign or malignant acquired.[3] Most retrorectal tumors are asymptomatic (26-50% of cases) and are often incidentally discovered during routine digital rectal examinations. Although patients exhibit a variety of symptoms, the most common symptom is chronic pain.[4] Also, symptoms like sacral pain, constipation, urinary incontinence, and pencil-thin stools may suggest that the tumor has invaded nearby structures. Patients might also suffer from lower back pain that intensifies when sitting

but gets better with walking or standing.[5] Retrorectal tumors should be considered in patients presenting with recurrent perianal fistulas and abscesses, prompting further imaging studies.[6] Digital rectal examination is crucial and can aid in diagnosing 90% of cases, but these soft and compressible lesions may be easily missed unless the clinician is vigilant.[5] Preoperative imaging is nearly universal in the diagnostic process, with computed tomography (CT) and magnetic resonance imaging (MRI) being particularly valuable for surgical planning (Figure 1).[7] CT is useful for determining the tumor's nature (cystic or solid) and its relationship with bone structures, while MRI excels in assessing soft tissue involvement and the extent of adjacent structure invasion (Figure 2).[8] Other imaging techniques, such as flexible sigmoidoscopy, transrectal ultrasonography (TRUS), and fistulograms, are also applicable.[9] While biopsy was once avoided because of potential complications and diagnostic inaccuracies, recent studies indicate that it can be safe and helpful for treatment planning.[10] Effective factors in the approach to RRTs include the location, size, and presence of malignancy of the tumor. Asymptomatic tumors with benign histopathology can be monitored with regular follow-ups; however, benign-appearing tumors can harbor malignant components or transform into malignancy.[10] Moreover, benign tumors can lead to infections in the urinary tract and meninges.[11] Surgery is the main treatment option for RRTs since they do not respond well to chemotherapy and radiation therapy, which are only used for palliative care.[12] Complications and recurrence can occur following surgeries not performed with free surgical margins and proper technique. For benign tumors, complete resection is advised, whereas malignant tumors require radical resection or en bloc resection of surrounding organs. Surgical methods include anterior (transabdominal), posterior (perineal), and combined approaches. Tumors located above the S3 level are typically treated with anterior or combined techniques, while those below the S3 level are treated with posterior techniques.[13] In this study, we provide an in-depth review of the diagnosis and surgical treatment of RRTs and share our clinical experiences.

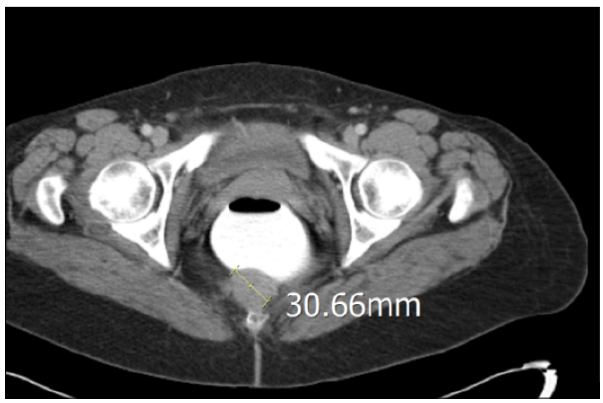

Figure 1. CT is useful for determining the tumor's nature (cystic or solid) and its relationship with bone structures.

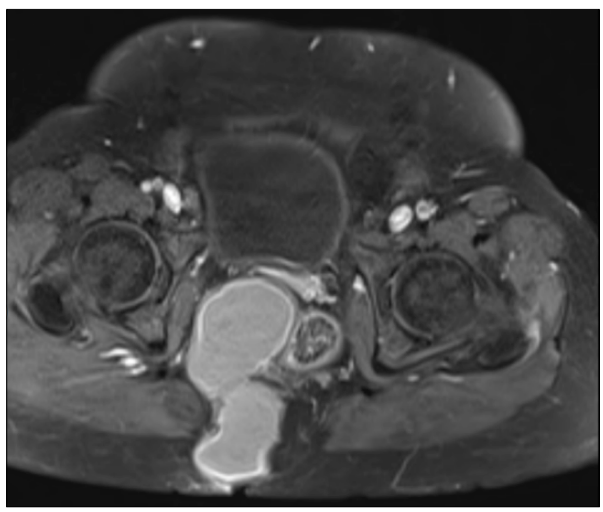

Figure 2. MRI excels in assessing soft tissue involvement and the extent of adjacent structure invasion.

MATERIALS AND METHODS

Between 2012 and 2022, patients treated surgically for RRT at Kartal Dr. Lütfi Kırdar State Hospital were retrospectively analyzed from a prospectively followed data pool. The study was approved by Kartal Dr. Lütfi Kırdar State Hospital ethics committee on 22.02.2022 with the number 2022/514/220/14. Medical data of the patients were obtained through the hospital information system, outpatient clinic visits, and consultations. Patients under 18 years of age, those with rectal cancer, gynecological malignancies, urological malignancies, or any retrorectal abscess diagnosis or history were excluded from the study. Demographic characteristics, American Society of Anesthesiologists (ASA) physical status classification, presenting symptoms, radiological imaging methods aiding diagnosis, whether histopathological sampling was performed, details related to the operation, intraoperative and postoperative complications (Clavien-Dindo classification),[12] postoperative hospital stay duration, 30-day postoperative mortality, mean follow-up duration, recurrence, and histopathological findings of the patients were recorded. As a clinical approach, preoperative biopsy was not planned to minimize the risk of tumor seeding and surgical site infection and to avoid other complications. All patients underwent preoperative radiological examination; imaging findings were reported by radiology specialists. Imaging report elements, including tumor size, localization, relationship with adjacent structures, and tumor morphology, were collected. Three main surgical approaches were used to remove RRTs depending on the tumor characteristics in the imaging. The anterior approach was generally preferred for tumors located above the S3 level, the posterior approach for tumors located below the S3 level, and the combined approach for large tumors or tumors located both above and below the S3 level. All patients received preoperative information and provided written consent for surgery. Bowel preparation was completed

Table 1. Characteristics of the patient group

Characteristics	n	%
Colonoscopy		
Polypectomy (Benign)	3	13.0
External compression on rectum	2	8.7
No colonoscopy	8	34.8
Normal colonoscopy	10	43.5
Symptoms		
Leg pain	1	4.3
Incidental	1	4.3
Constipation	3	13.0
Constipation and coccydynia	1	4.3
Abdominal pain	3	13.0
Abdominal pain and constipation	1	4.3
Abdominal pain and coccydynia	1	4.3
Coccydynia	12	52.2
ASA Score		
ASA1	4	17.4
ASA2	17	73.9
ASA3	2	8.6
Type of operation		
Kraske	17	73.9
Conversion from laparoscopy to laparotomy	1	4.3
Laparotomy	4	17.4
Conversion from laparotomy to Kraske	1	4.3
Preop Complication		
Rectum perforation - primary repair	2	8.6
Ureter injury - repair + double J catheter	1	4.3
None	20	87.0
Characteristics	**n**	**%**
Postop complication		
None	20	87.0
Yes (recurrence after 4 years)	3	13.0
Length of hospital stay		
1 day	1	4.3
2 days	6	26.1
3 days	7	30.4
4 days	5	21.7
5 days	4	17.4
Cyst perforated		
Yes	8	34.8
No	15	65.2
Preop biopsy		
Yes	1	4.3
No	22	95.7
Operation Duration (minutes)	35 (20-60)	
Follow up		
None	5	21.7
Yes	18	78.3
Follow-up Duration (months)	6 (2-12)	
S3 Involvement		
None	20	87.0
Yes	3	13.0

for all cases. Patients undergoing pelvic surgery received venous thromboembolism prophylaxis with low molecular weight heparin starting the night before surgery and continuing for up to 4 weeks after discharge. Antibiotic prophylaxis, consisting of 500 mg metronidazole and 1 g cefazolin, was administered 30 minutes before surgery. All procedures were conducted under general anesthesia, and ureteral stents were inserted in cases where ureteral invasion or suspicion was present. The data were analyzed using IBM SPSS Statistics Standard Concurrent User V 29 (IBM Corp., Armonk, New York, USA). Descriptive statistics included counts (n), percentages (%), mean±standard deviation, and median (minimum-maximum) values.

RESULTS

From 2012 to 2022, 23 patients underwent surgery for retrorectal tumors, with 20 (87.0%) being female and a mean age of 45.2±12.2 (24-65) years. Twelve patients (52.2%) presented with coccygeal pain. Other presenting symptoms are summarized in (Table 1). On physical examination, a mass was palpated in the rectal examination of three patients (13.1%) and in the vaginal examination of three patients (13.1%). Preoperative radiological examinations were performed on all patients; one patient underwent only CT, 12 underwent only MRI, and 10 underwent both CT and MRI. Retrorectal tumors were reported as solid in nine patients (39.1%), cystic in ten patients (43.5%), and heterogeneous in four patients (17.4%). Fifteen patients underwent colonoscopy, revealing external compression in two patients and benign polyps in three patients post-polypectomy. Resected RRTs' histopathologic findings are presented in (Table 2).

DISCUSSION

The literature indicates that retrorectal masses are generally seen in young to middle-aged adults, consistent with the demographic and clinical characteristics of our patients.[1] Postoperative pathology typically reveals benign findings, although malignant pathologies are also possible, emphasizing the importance of surgery. Wolpert et al.[2] indicated that the surgical treatment of retrorectal tumors usually yields successful results despite the risk of complications. Similarly, a study by Hopper et al.[3] emphasized that surgical excision is generally sufficient for benign retrorectal tumors and that radical surgical approaches are necessary for malignant tumors. Considering this, the importance and necessity of surgically resecting the tumor en bloc and achieving negative surgical margins are emphasized. In our study, we determined our surgical approach based on the location and characteristics of the tumor. Although intraoperatively rectal perforation and ureteral injury complications were encountered, these complications were managed with appropriate approaches. It has been shown that the rarity of retrorectal tumors and the potential complications and patient management in surgical treatment are quite successful in experienced centers.[13] In our study, surgical outcomes were generally satisfactory, with most patients not experiencing complications or recurrence. However, some patients experienced recurrence after surgery. The potential malignancy and recurrence rates of the cases were consistent with findings from other studies in the literature.[1,13]

Table 2. Histopathological findings

Pathology	n	%
Non-specific inflammation	2	8.7
Angiomyxoma	1	4.3
Epidermoid cyst	3	13.0
Keratinous cyst	4	17.4
Cystic hamartoma	1	4.3
Dystrophic calcification	1	4.3
Micropapillary ependymoma	3	13.0
Schwannoma	1	4.3
Benign cystic lesion	2	8.7
Tailgut cyst (benign cystic findings	4	17.4
No pathology sent (no cyst found)	1	4.3

Conclusion

The rarity of retrorectal tumors presents challenges in surgical treatment and patient management for physicians. However, it is observed that successful outcomes are achieved in experienced centers by evaluating the tumor imaging findings and localization and managing potential complications with appropriate surgical approaches.

Ethics Committee Approval

The study was approved by the Kartal Dr. Lütfi Kırdar State Hospital Ethics Committee (Date: 22.02.2022, Decision No: 2022/514/220/14).

Informed Consent

Retrospective study.

Peer-review

Externally peer-reviewed.

Authorship Contributions

Concept: M.K., C.H.; Design: G.O.; Supervision: H.F.K.; Fundings: Ö.A., S.K.; Materials: O.A.; Data: C.H.; Analysis: M.K.; Literature search: C.H.; Writing: M.K., G.O.; Critical revision: H.F.K.

Conflict of Interest

None declared.

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Retrorektal Tümör Cerrahisi: Tek Merkez Çalışması

Amaç: Retrorektal veya presakral tümörler, teşhisi zor ve patolojik olarak heterojenite gösteren nadir tümörlerdir. Bu tümörlerin kesin insidansı bilinmemekle birlikte, üçüncü basamak sağlık merkezlerinde yıllık olarak 1-6 vaka görüldüğü tahmin edilmektedir. Bu çalışmanın amacı, 2012 ve 2022 yılları arasında hastanemiz genel cerrahi kliniğinde retrorektal tümör tanısı alarak cerrahi tedavi gören hastaların klinik ve cerrahi sonuçlarını değerlendirmektir.

Gereç ve Yöntem: 2012 ve 2022 yılları arasında hastanemiz genel cerrahi kliniğinde retrorektal tümör tanısı alarak cerrahi tedavi gören 23 hasta üzerinde retrospektif bir analiz yapıldı. Çalışma için etik kurul onayı alınmış olup, hastaların demografik verileri, başvuru semptomları, radyolojik görüntüleme yöntemleri, cerrahi detaylar ve postoperatif sonuçlar kaydedilmiştir. Tüm hastalar ameliyat öncesi radyolojik olarak değerlendirilmiş ve cerrahi yaklaşım tümörün lokalizasyonuna göre belirlendi.

Bulgular: Retrorektal tümörler genellikle genç-orta yaş erişkin grubunda görülmekte olup, çalışmamızdaki hastaların demografik ve klinik özellikleri literatürdeki diğer çalışmalarla uyumludur. Çoğu vakada benign tümörler saptanırken, bazı malign vakalar da gözlenmiştir. Bu durum retrorektal tümörlerin cerrahi tedavisinin önemini vurgulamaktadır. Literatürde, retrorektal tümörlerin cerrahi tedavisinin genellikle başarılı sonuçlar verdiği, benign tümörlerde cerrahi eksizyonun yeterli olduğu, malign tümörlerde ise radikal cerrahi yaklaşımların gerektiği belirtilmektedir. Çalışmamızda cerrahi yaklaşım tümörün lokalizasyonuna ve özelliklerine göre belirlenmiş, komplikasyonlar uygun yöntemlerle yönetilmiştir.

Sonuç: Retrorektal tümörler nadir görülen ve cerrahi tedavi gerektiren lezyonlardır. Deneyimli merkezlerde yapılan cerrahi müdahaleler başarılı sonuçlar vermekte ve düşük nüks oranlarına sahiptir. Bu tümörlerin yönetimi ve cerrahi tedavisi, tümörün görüntüleme bulgularının ve lokalizasyonunun değerlendirilmesi ile başarılı bir şekilde gerçekleştirilmektedir. Bu çalışma, retrorektal tümörlerin cerrahi tedavisinde kapsamlı bir yaklaşım sunarak, uygun cerrahi stratejilerin belirlenmesi ve komplikasyonların yönetimi açısından önemli bir katkı sağlamaktadır.

Anahtar Sözcükler: Cerrahi; retrorektal; tümör.