Diagnostic, Therapeutic and Evolutionary Problems of
Retro-Rectal Tumors (About 3 Cases)

Hajri Amal, Ahmed Elmi Abdirahim, Rachid Boufettal,
Erguibi Driss, Saad Rifki El Jai, and Farid Chehab

ABSTRACT

Retro-rectal tumors are asymptomatic in most cases. Rarely they manifest as a rectal syndrome as in the case of our patients, or as a result of superinfection or malignant degeneration. Positive diagnosis is based on digital rectal examination, rectoscopy, echo-endoscopy and especially pelvic MRI and CT scan. Once the diagnosis has been made, surgical removal is required as soon as possible. Several surgical approaches have been proposed: perineal or transacral approach (adopted in our first case); abdominal approach or combined approach. The decision of the approach depends on the size of the tumor, its location and its histological nature. In case of malignant degeneration, the prognosis is poor.

We report 3 cases of retro-rectal tumors operated on in the department of digestive cancer surgery and liver transplantation of the CHU Ibn Rochd of Casablanca with the support of data from the literature.

Keywords: Malignant degeneration, rectal syndrome, retro-rectal tumors, superinfection, surgical approaches.

I. INTRODUCTION

Retro rectal tumors are a rare entity, often benign, asymptomatic, with a female predilection. Cysts and tumors of vestigial origin are the most frequent. Positive diagnosis is currently based on modern imaging techniques. Treatment is essentially surgical, although the prognosis is uncertain [1].

We report a series of 3 cases operated in the department of digestive cancer surgery and liver transplantation of the CHU Ibn Rochd of Casablanca and we discuss through a review of
the literature, the diagnostic modalities, the therapeutic attitude and the evolution of retro-rectal tumors.

The aim of this work was to discuss the difficulties encountered in the diagnosis and treatment of retrorectal tumors and their evolution in the postoperative period.

II. METHODS

We report a series of 3 cases operated for retrorectal tumor in the department of digestive cancer surgery and liver transplantation of the CHU Ibn Rochd of Casablanca during a period of 7 years, from 2012 to 2019. We discuss through a review of the literature the diagnostic modalities, the therapeutic attitude and the evolution of retro-rectal tumors.

The aim of the study is to evaluate and analyse the functional results as well as the complications after surgical treatment.

III. RESULTS

A. Case 1

This case concern a 55 year old female patient on Levothyroxine. Who was admitted for a retro-rectal mass evolving for 9 months, revealed by a painful perianal swelling progressively increasing in volume. On general examination, Performance status was 0 with a Body mass index of 25 kg/m².

The abdominal was flexible on examination and the rectal examination showed a retro-anorectal swelling of 4 cm long, soft and without continuity with the anal canal. On endoscopic examination the anal and rectal mucosa were healthy. Pelvic MRI (Fig. 1) showed a tissue formation with T1 hyper signal and T2 hyper signal enhanced in the periphery, located in the lower intergluteal region and in the retro anal region.

This mass measured 5x4x3 cm and was in intimate contact with the anal canal with no individualizable endoluminal bud. The patient underwent surgical resection of the tumor via a trans anal approach with drainage of the retro-rectal space using a Delbet blade.

The exploration revealed a cystic mass (Fig. 2) of 4 cm long axis, soft, retro and perianal, adherent to the external sphincter and the coccyx. The postoperative course was simple, with removal of the delbet blade on day 4 and declared as outgoing on day 5. Histological examination showed a thick cystic wall with a squamous lining containing a granular layer and covered with an orthokeratotic hyperkeratosis suggesting a cystic tumor (epidermoid cyst) with no sign of malignancy. The follow-up was 2 years without incident, notably no sphincter disorders.

B. Case 2

A 62-year-old patient, cannabis user and alcoholic for whom the disease history dates of 2 months ago by the installation of a rectal syndrome with chronic constipation and pain of the right iliac fossa without other signs.

On general examination, status of performance was 0 with a Body mass index of 23 kg/m². The abdominal examination showed hypogastric and right iliac fossa tenderness and on rectal examination: a poly-lobed mass on the posterior wall of the rectum filling the sacral cavity which was mobile in relation to the posterior plane. Its lower pole was located 4 cm from the anal margin.

Recto-sigmoidoscopy was unremarkable. Abdominal CT scan showed a solid cystic formation measuring 83x72x62 mm in the retro-rectal and pre-sacral region. It pushed back the rectum in front of it with a fatty separation line; behind it came into contact with the sacrum without bone lysis. It also noted a swollen appendix measuring 14mm and multiple cystic formations in the liver. Pelvic MRI (Fig. 3) showed a solid cystic formation in the retro-rectal and pre-sacral space measuring 70x81x87 mm which may be related to an enteric cyst. The patient underwent a closed-wall resection of the solid-cystic mass with retrograde appendectomy, epiploic and anterior parietal biopsy.

Surgical exploration revealed a bilobed solid-cystic retro-rectal mass (Fig. 4) measuring 10 cm in long axis with a clean wall adjoining the posterior aspect of the mesorectum with the presence of a separation line and resting on the pelvic floor. In addition, the appendix was swollen, and a millimeter-sized biliary cyst was present on the diaphragmatic surface of the liver. The opening of the specimen (Fig. 5) showed a thick, beige, pasty appearance. The post-operative course was simple, and the patient was declared discharged at D4 post-op. The anatomo-pathological examination showed a morphological aspect suggesting a cystic hamartoma without any sign of malignancy. After 2 years of clinic and radiological monitoring, there was no tumor recurrence or sphincter disorders.

C. Case 3

The patient was 56 years old and had undergone surgery for renal lithiasis and had been on hemodialysis for 2 years for chronic renal failure. She was admitted with pelvic pain associated with constipation. On general examination, postural status was 2 with a body mass index of 23 kg/m². Abdominal examination showed a left lumbotomy scar and a painless umbilical hernia. On rectal examination, a renal cystic mass was found compressing the posterior wall of the rectum located 6 cm from the anal margin. Colonoscopy had shown a rounded extrinsic, non-stenotic tumor 8-20 cm from the anal margin compressing the rectum. The biopsy concluded that the tumor was a non-specific inflammatory colitis with no signs of malignancy. Abdominal-pelvic CT scan showed a cystic presacral formation associated with a cystic lesion centered on the first 2 sacral vertebrae. Abdominal-pelvic MRI (Fig. 6) showed a presacral formation that could be related to a cystic digestive duplication of the rectum measuring 13x11 cm in size and 13 cm in height, responsible for the forward displacement of the pelvic elements and in intimate contact with the rectum. The patient underwent resection of the right anterior and lateral wall of a cystic formation at the expense of the posterior rectal wall with evacuation of its gelatinous contents, followed by a cure by Paleto technic of an umbilical hernia. The exploration showed an umbilical hernia with a 2 cm neck with viable epiploic content and the presence of a cystic formation at the posterior rectal wall. Extemporaneous examination revealed a fibrous wall without signs of malignancy.

The post-operative course was simple and the patient was
discharged on postoperative day 4. Cytopathological examination of the cystic fluid revealed an essentially hematic fluid without signs of malignancy. And the anatomo-pathological examination showed a vestigial cyst of the retro-rectal space of cystic hamartoma type. The clinical evolution was without recurrence or superinfection over a period of 14 months.

![Fig. 1. Magnetic resonance imaging in axial section: tissue mass with hypo signal in T1 sequence.](image)

![Fig. 2. Intraoperative view: the lower pole of the tumor.](image)

![Figure 3. Pelvic MRI showing the retro rectal tissue mass in T1 hypo signal.](image)

![Fig. 4. Intraoperative view of the bilobed solid-cystic mass.](image)

![Fig. 5. The opening of the coin shows a thick, beige, pasty appearance.](image)

![Fig. 6. Pelvic MRI cross-sectional image showing a cystic mass of fluid signal, occupying the mid-rectum, well limited, T2 hyper signal.](image)

IV. DISCUSSION

The development of retro rectal tumors is rare in adults, as their incidence has been estimated at 1/40,000 [2]. Together with other retro rectal cystic lesions, epidermoid cysts account for 55% to 65% of all retro rectal lesions (Table I) [3]. Retrorectal tumors tend to affect women (mostly Caucasian in 75% of cases) with a sex ratio of 1.2 to 3.1 [2]. Retrorectal tumors can affect all age groups, with an average age of onset between 30 and 40 years. Only [4] studied ethnic criteria and found that 99% of the cases were white. Retrorectal tumors are asymptomatic in 50% of cases [2].
and are discovered incidentally [3].

However, due to their location, they can manifest themselves by very different clinical signs. More rarely, these tumors can be revealed by:

- A pelvic tumor syndrome which may include pelvic pain [5], compressive disorders [3], urinary signs in 10% of cases [6] and neurological signs in 10% of cases [7, 8] such as uni or bilateral lumbosacralgia;
- Superinfection occurs in 20-30% of cases [3], [9];
- Malignant transformation [3] and
- Other clinical signs may be associated [3] including anal or gluteal pruritus that is resistant to antihistamine, corticosteroids and antiparasitic drugs.

The diagnosis is made clinically by digital rectal examination [5], [7], [10]. It reveals a posterior, bulging, extrinsic mass pushing anteriorly against the rectum with or without invasion of its posterior wall [9].

Imaging not only confirms the location and solid or cystic nature, but also characterizes it according to invasion of surrounding structures or extension beyond the pelvic cavity [11].

Endo rectal ultrasound is better than pelvic CT to assess infiltration of the rectal wall and to detect the presence of satellite adenopathy [12]-[14].

Abdominal and pelvic CT scans makes the diagnosis in 100% of cases [15], even in the case of very small tumors that are not palpable on rectal examination [16]. In the case of cystic lesions such as epidermoid cysts, the CT scan shows a well-marginated, thin-walled, single, hypodense lesion in the retro-rectal space [3].

Pelvic MRI, in addition to pelvic CT, provides great topographical accuracy, particularly for delineating all soft tissue structures and neuronal relationships [11].

Echo-endoscopy is of interest especially for small lesions [16]. Reference [14] show that echo endoscopy is preferable to CT to reveal any connection to the rectal wall. According to [17], rectoscopy in combination with echo endoscopy has a sensitivity of 100% in predicting the diagnosis of a retro rectal tumor.

Cytopuncture examination may lead to diffusion of tumor cells when the retro rectal cyst is neoplastic in nature [17]. It should therefore be contraindicated. Finally, it is of poor value for diagnosing the cytological nature of the cyst [14].

Tumor markers are not very useful in the diagnosis of retro rectal tumors. However, an isolated increase in carcinoembryonic antigen (CEA) would indicate a squamous cyst [3].

In the absence of major contraindications, retro rectal tumours are always treated surgically [3], [5], even if the cyst is benign and asymptomatic.

This attitude is explained by:

- The significant frequency of malignant lesions: nearly 10% [12].
- The increased infectious risk of retro rectal epidermoid cysts: 30% at diagnosis [5], [7]. The tumor may be the cause of life-threatening dystocia in young women, both maternal and fetal.

The approach is discussed according to the size, the height of the tumor in relation to the sacral parts, the degree of infiltration of adjacent tissues and the degree of vascularization [17].

According to a study done in [17] concluded that currently several methods of surgical approach to the pre-sacral region are known and used. They include [18]:

- Anterior approach (Abdominal)
- Posterior approach (Perineal)
- Combined approach

Post-operative complications include post-operative hemorrhage [4], neurological disorders [3], sphincter damage, etc.

The post-therapeutic evolution can be marked by:

- Superinfection on a cystic fragment left in place. Reference [3] and [7] report the appearance of a postoperative fistula in 3% of cases.
- The risk of recurrence is mainly due to incomplete resection of the cyst. According to [5], the risk of recurrence is higher if the cyst is already infected. This implies the need for complete removal of the tumor as soon as the diagnosis is made.
- Malignant degeneration

The prognosis is generally good except for degenerated cysts [17].

For post-operative follow-up, [19] suggest that patients with benign lesions with complete resection should have an MRI scan after one year of surgery and every five years thereafter.

| Table 1: Cases reported in the literature series |
|-----------------------------------------------|
| **Serie** | **Numbers of retro rectal solid tumors** | **Numbers of squamous and vestigial cysts** |
| Reference [4] | 49 | 15 |
| Reference [5] | 29 | 5 |
| Reference [6] | 10 | 6 |
| Reference [5] | 24 | 5 |

V. Conclusion

Retro rectal cystic and solid tumors are rare and of very varied natures with multiple possible histology. They are more common in women.

These tumors are often asymptomatic, sometimes revealed by pain or neurological disorders.

MRI is the key examination, sometimes supplemented by CT or echo-endoscopy.

The aim of treatment is the complete surgical removal of the tumor to avoid recurrence and malignant degeneration. The prognosis is often good but uncertain.

State of knowledge on the subject:

- In rare cases, these tumors manifest as a pelvic tumor syndrome or mechanical dystocia during delivery.
- Positive diagnosis is based on digital rectal examination, echo-endoscopy, rectoscopy, CT and pelvic MRI.
- The aim of treatment is to surgically remove the tumor completely of the tumor in order to avoid recurrence.
- The prognosis is generally good except for degenerated cysts

Contribution of our study to the knowledge:

- The clinician must do a thorough clinical examination to avoid missing a malignant lesion. The rectal examination
is essential.

- The retro rectal mass must be handled with great care so as not to hide the tumour cells.
- The evolution of the patient postoperatively is very complex, but the patient must be followed throughout the course of the operation.

ACKNOWLEDGMENT

thank my lord first of all. I also thank my teachers and my patients who gave me confidence. All authors contributed to the conduct of this work. All authors also declare that they have read and approved the final version of the manuscript. Many thanks to all of you.

CONFLICT OF INTEREST

Authors declare that they do not have any conflict of interest.

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DOI: http://dx.doi.org/10.24018/ejmed.2022.4.5.1467