ROYAUME DU MAROC
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Faculté de Médecine et de Pharmacie
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Memory

For Obtaining Medical Specialty Diploma

MEDICAL IMAGING

RetRoRectal and pResacRal tumoRs in adults: MultiModality iMaging for Multidisciplinary space

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THANKS

TO

To my Master and supervisor of memory Madam

Rachida SAOUAB

Professor of Radiology in the Radiology Department of the Military Hospital Rabat

You have done me a great honor by agreeing to guide me in carrying out this work.

During my training I had the privilege of benefiting from your knowledge, and of immersing myself in your human qualities worthy of consideration.

Thank you for your patience, availability and above all for your judicious advice, which has helped fuel my reflection.

Please, dear master, find in this work the expression of my gratitude, esteem and deep respect.

A special thanks to **Pr El Kaoui Hakim** for the help and the time that he dedicated to me.

SUMMARY

PLAN

INTRODUCTION

Retrorectal tumors in adults are scarce disease, with an **incidence of about 1 in every 40.000 patients [**1]. They develop **in the presacral space** which is bounded by the sacrum and the coccyx in the posterior, the mesorectum in the anterior, the peritoneal reflection above, the Waldeyer's fascia below. Inside this anatomical space might develop a **large variety of benign and malignant lesions**, which most frequently present as masses [2, 3]. The primary tumors can be categorized, based on the principal cell line type as congenital, inflammatory, neurogenic, miscellaneous, or osseous [4].

The first observation of retrorectal tumor was made by a French obstetrician in the 17th century. Middeldorpf in 1885, made the first resection of what should be a sacrococcygian teratoma in a 1-year-old girl [1, 5]. Subsequently, all sacrococcygian tumors were called Middeldorpf tumors, without histological distinction [6, 7].

Retrorectal tumors can be benign or malignant. Malignant lesions have an equal partition between the genders, although benign lesions are more frequent in females [8].

Because they usually remain **asymptomatic or present without specific symptoms,** the diagnosis of the majority of retrorectalmassesis often made incidentally, which delayed their proper management [9].When symptoms are present, they usually depend on the dimensions of the tumor and their position. Pain is the most usual presenting symptom for malignant tumors [10, 11].A careful rectal examination can help to confirm the diagnosis of retrorectal mass, and deducing its proximal extent.

Imaging studies, based essentially **on CT-scan and MRI** should be achieved in order to determine the nature and the relationships of these lesions for preoperative surgical planning. Magnetic resonance imaginghas challenged the role of CT in the evaluation of pelvic disorders, because of its multiplanar imaging performancein delineating soft-tissue planes. [12, 13, 14]

To prevent tumor seeding, meningitis, fecal fistula, and abscess formation, **biopsies** of retrorectalmasses must be accomplished **only if thelesion appears to be unresectable** and a tissue diagnosis is necessary for adjuvant therapy [15, 16].

The treatment of choice for retrorectal tumors, even for asymptomatic forms, is to ensure **complete resection** with healthy margins, which present difficulties despite the use of improved techniques in perioperative care [17, 18].

In this **retrospective study**, we aimed through five cases collected in the **radiology department of the military hospital**, to:

- ✓ **Recall the anatomy of the retrorectal space**
- ✓ **Illustrate the imaging aspect of retrorectal tumors in our series and compare it with the literature data**

MATERIELS AND METHODS

This is a **retrospective study**, accomplished in the medical imaging service, at the military hospital Mohamed V in Rabat, **between January 2007 and Jun 2021**.**five cases of retrorectal tumors** were diagnosed and operated in our hospital during this period.

A. Search of the records

Patient files and hospital information system records were found on the register of the surgery department at the military hospital in Rabat. Subsequently, the files were consulted from the PACS data of our radiology department.

1. Inclusion criteria

To be included in the study, **patients had to be at least 18 years old.**

Retrorectal masses had to have been characterized on the basis of imaging and clinical findings, and should be **resectable**.

2. Exclusion criteria

Unexploitable data.

Patients lost to follow-up.

Tumors of bone origin

B. Clinical study

The clinical data were collected retrospectively after recourse to the clinical files of patients. The data recorded are:

- Age / Sex
- Clinical presentation (constipation,pelvic pain or other)

- Radiological reports
- Pathological reports.

These data had been entered on data entry forms, to facilitate their integration into tables and their subsequent use in statistical analysis.

C. Imaging:

1. Imaging techniques:

All our 5 patients underwent preoperative **pelvic MR imaging** utilizing 1.5 T systems with multi-channel phased array torso coils, providing optimal image quality.

The MR examination was performed with the patient in a supine position. MRI protocol included:

- ✓ Axial, coronal, associated to sagittal T2-W images with and without fat saturation, obliquely oriented along the long axis of the sacrum to determinate the relationship of the mass to adjacent structures such as the rectum, sacrum, sacral foramina, and nerve roots.
- ✓ Axial T1-weighted images (T1-W) with and without fat saturation examine for macroscopic fat.
- ✓ Multiphasic contrast-enhanced with fat saturation acquisitions are habitually acquired for appropriate characterization.
- ✓ Diffusion Sequence

Four of our patients underwent an **abdomino-pelvic CT-scan**.

Pelvic **Ultrasound** was performed in one patient.

2. Image review

CT scan and magnetic resonance images were evaluated by experienced radiologists. retrorectal tumor feature's that were assessed are:

1. **The location and the extent of the tumor**

2. **The morphology** was assessed by the investigation of the tumor margin and the internal signal nature.

When the lesion shows over 80% cystic elements, it was diagnosed as a cystic tumor.

When the lesion displayed more than 80% solid elements, it was diagnosed as a solid tumor.

The tumors may be classified as heterogeneous if they do not meet criteria described above.

3. **The margin of the tumor** was defined as:

Well-circumscribed, when it presents smooth or lobular contour without surface projections

Irregular, when it shows surface projections, or;

Invasive, if the tumor cracked a neighbouring structure.

4. **The size of the tumor**, which is measured in the largest two dimensions in axial image.

RESULTS

A. Statistical analysis

During the period from January 2007 to Jun 2021, a total of 06 patients were diagnosed with retrorectal tumors and underwent imaging in the radiology department of Military hospital in Rabat.

1. Clinic

a. Age and gender:

- The patients included **2 men and 3 women**, with **mean age of 38, 5 years** (24 - 69years)

b. Reason for consultation.

The reasons for consultation in our patients were:

- Lower abdominal and/or back pain / discomfort: in 3 cases
- Defecation and urinary difficulty: in 1 case
- Dyspareunia: in 1 case
- Incidentally: in 1 case

c. Etiological diagnosis

After diagnosis, our five patients showed **epidermoid cyst**, **liposarcoma**, **hemangiosarcoma**, **ganglioneuroma** and **fibromatosis**, respectively, with a percentage of 16% of each case.

2. Imaging

Pelvic MRI was obtained in all patients, CT in 5 patients, and ultrasonography in one patient.

- ✓ The lesions were **well-circumscribed in 5 patients**, invasive in 1 patient, who had a sacral lysis.

- ✓ MRI demonstrated that **benign cystic lesion** was primarily located in the retrorectal space in **1 case**. The others 5 cases were solid.
- ✓ The cystic lesion was unilocular, of intermediate signal T1, slight hypersignal T2, circumscribed by a regular peripheral rim slightly enhanced after injection of gadolinium.
- ✓ Heterogeneous tumor was found in 3 cases (liposarcoma, fibromatosis and hemangiopericytoma) and one was slightly heterogeneous (leiomyosarcoma).
- ✓ **Fat containing solid mass was found in one case** (liposarcoma), associated to a small bud at the level of the right sacred hole without lysis or infiltration of adjacent structures.
- ✓ Solid masses with intact sacrum were found in 3 cases.
- ✓ Solid masses **with sacral destruction were found in 1 case.**
- ✓ The rectum appeared anterior and lateral in 3 patients, anterior in one patient but without evidence of invasion.
- ✓ Three solid tumors were malignant lesions confirmed by histopathology.
- ✓ **The mean largest diameter of the lesions was 60 mm** (**range 45-130 mm**).

B. Illustration of pathologies:

1. Epidermoid cyst :

- ✓ 24- year-old woman
- ✓ Defecation difficulty and discomfort
- ✓ The diagnosis has been established based on radiological appearance.
- ✓ **Abdominopelvic CT scan without contrast**

Well circumscribed presacral cystic mass, unilocular, homogeneous, with no calcifications, or infiltration of bone or adjacent structures. It is approximately of 38x 45 mm in size.

Bladder, uterus and bone without abnormality

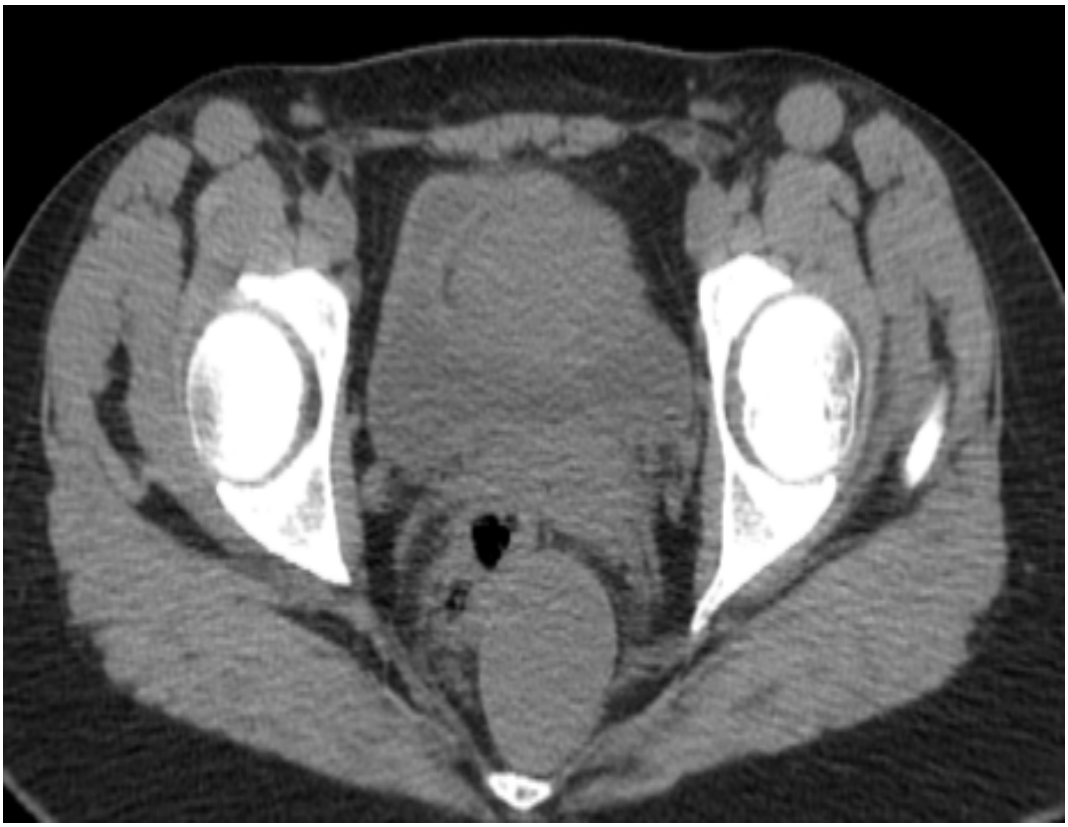

Figure 1 : axial CT scan imagewithout contrast showing a retrorectal cystic mass

✓Magnetic resonance imagery (MRI)

Well circumscribed presacral mass.It is of intermediate signal T1, slight hypersignal T2, hypersignal diffusion with moderate enhancement at the periphery after injection of gadolinium. It pushes the rectum forward and to the right with a persistent fatty border of separation. Behind, it comes into contact with the 5th sacral vertebra and the coccyx without scalloping or lysis.Bladder and uterus without abnormality.

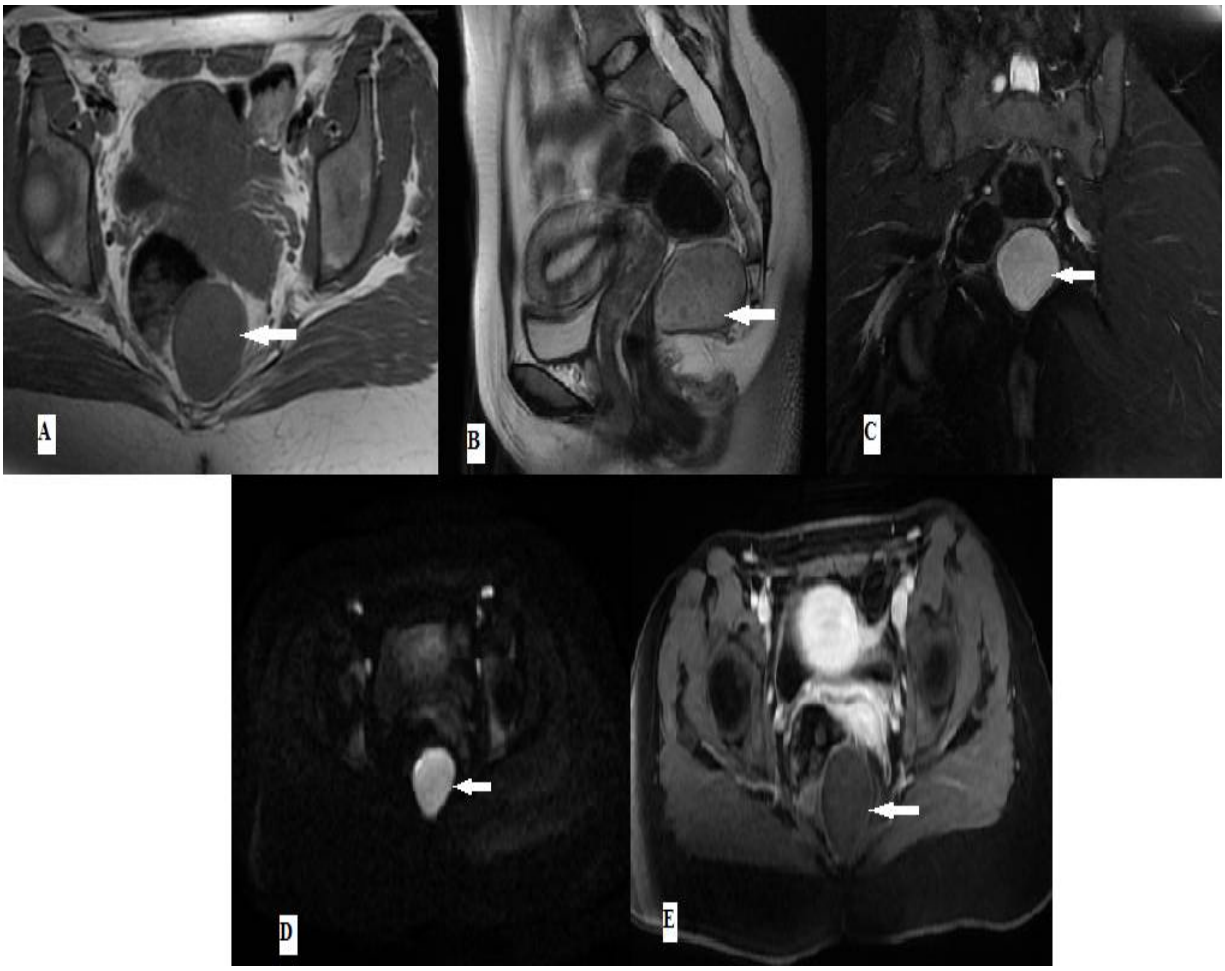

Figure 2 :Resonance magnetic images showing a retrorectal mass, of intermediate signal T1 (A), moderate hypersignal T2 (B) and T2 FAT-SAT (C), hypersignal diffusion (D) with moderate enhancement at the periphery after Gadolinium (E)

2. Ganglioneuroma

✓ 69- year-old man

✓ Bilateral inguinal mass that, after biopsy, was diagnosed as non-Hodgkin lymphoma.The initial thoraco-abdomino-pelvic CT revealed, in addition to mediastinal and abdominal lymphadenopathy related to LMNH, a well limited retrorectal mass.

✓ After six courses of CHOP the lymphadenopathy disappeared, but the pelvic mass persisted and did not change in size➔ The patient was referred to visceral surgery department for diagnostic and therapeutic management of this retrorectal mass.

✓ The patient was operated by abdominal approach with resection of the mass in a single piece. Pathological examination of the resected specimen suggests a ganglioneuroma, with no signs of malignancy

✓Abdominopelvic CT scan

Well circumscribed, solid and homogenous presacral mass, isodense to muscle, on the right side of the pelvis, measuring approximately 71x32 mm in size.

✓Magnetic resonance imagery (MRI)

•Ovoid right-sided pelvic mass (dimensions: 71x32 mm), hypointense T1, hyperintense inT2 with enhancement after injection of gadolinium. It presents an intimate contact with the sacrum without signs of invasion. There was no abnormality of the sacred nerve roots.

•The rectum, bladder, seminal vesicles and prostate with no abnormality.

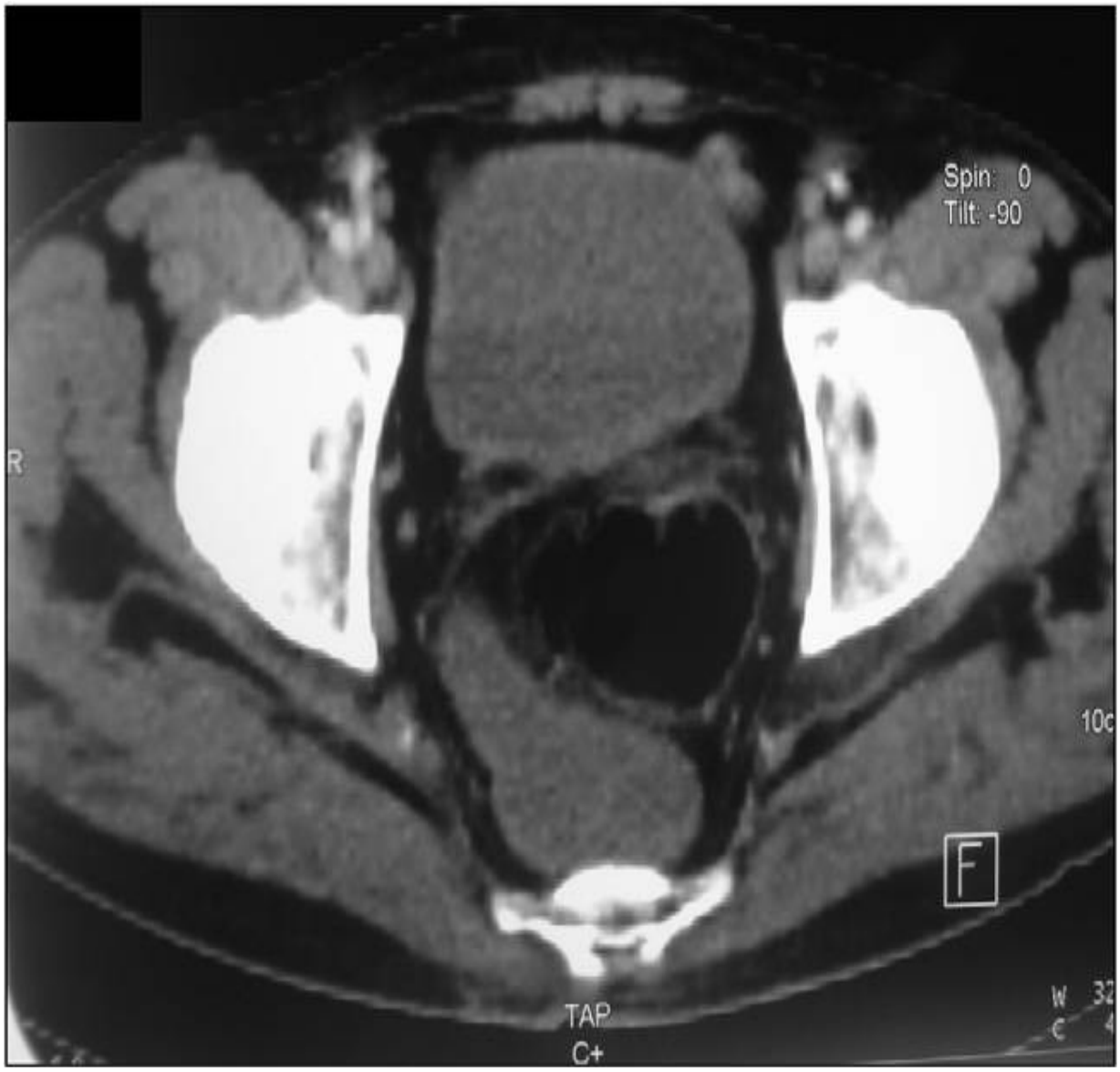

Figure 3 : Axial CT scan without injection pelvic image showing well-circumscribed, solid and homogeneous retrorectal mass

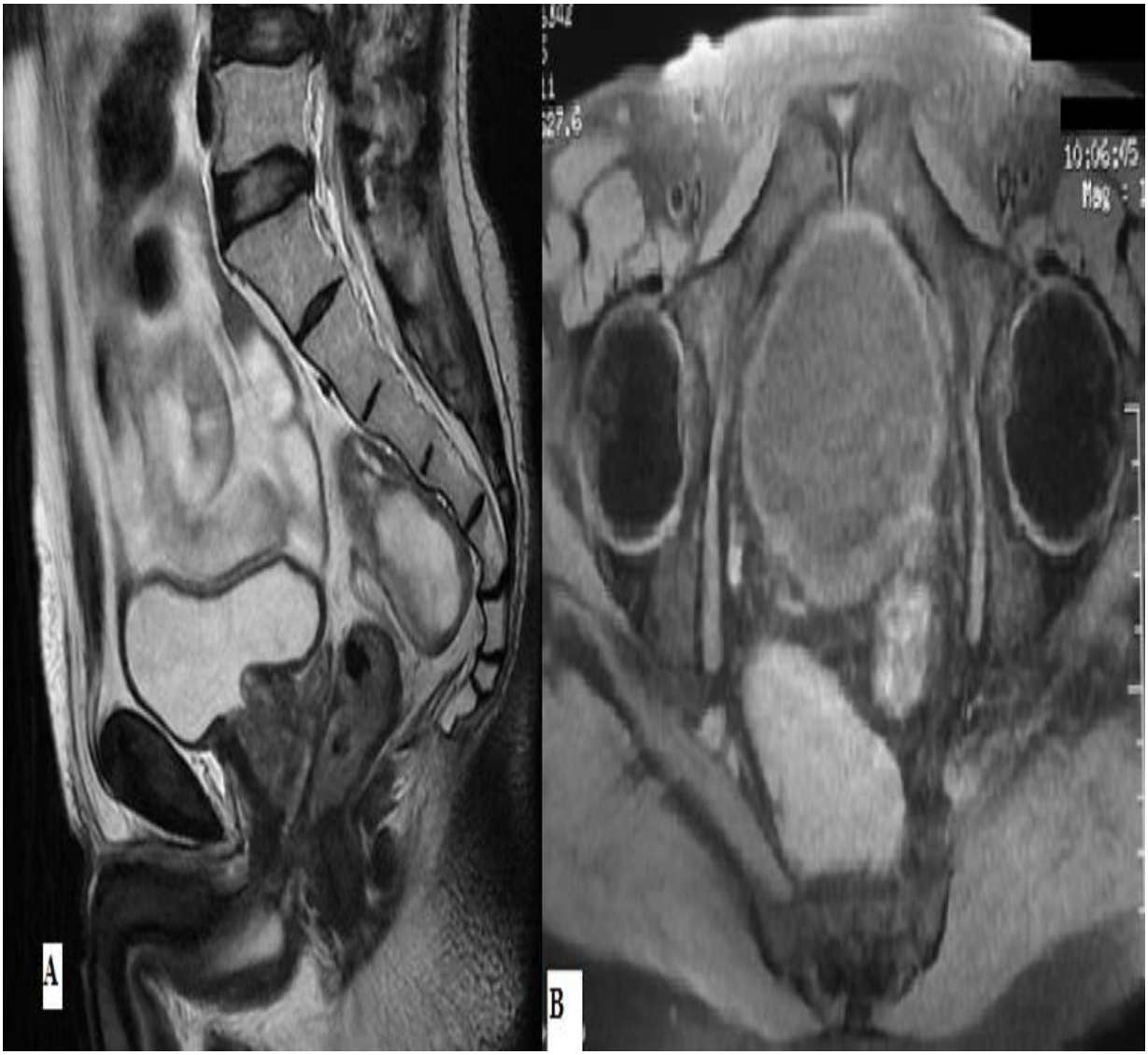

Figure 4: Magnetic resonance imaging showing an ovoid retrorectal mass, hyperintense on sagittal T2 weighted image (A) and vividly enhanced after Gadolinium (B) which is abutting the right sacrum and intimately associated with anterior sacral nerve roots, without bony invasion

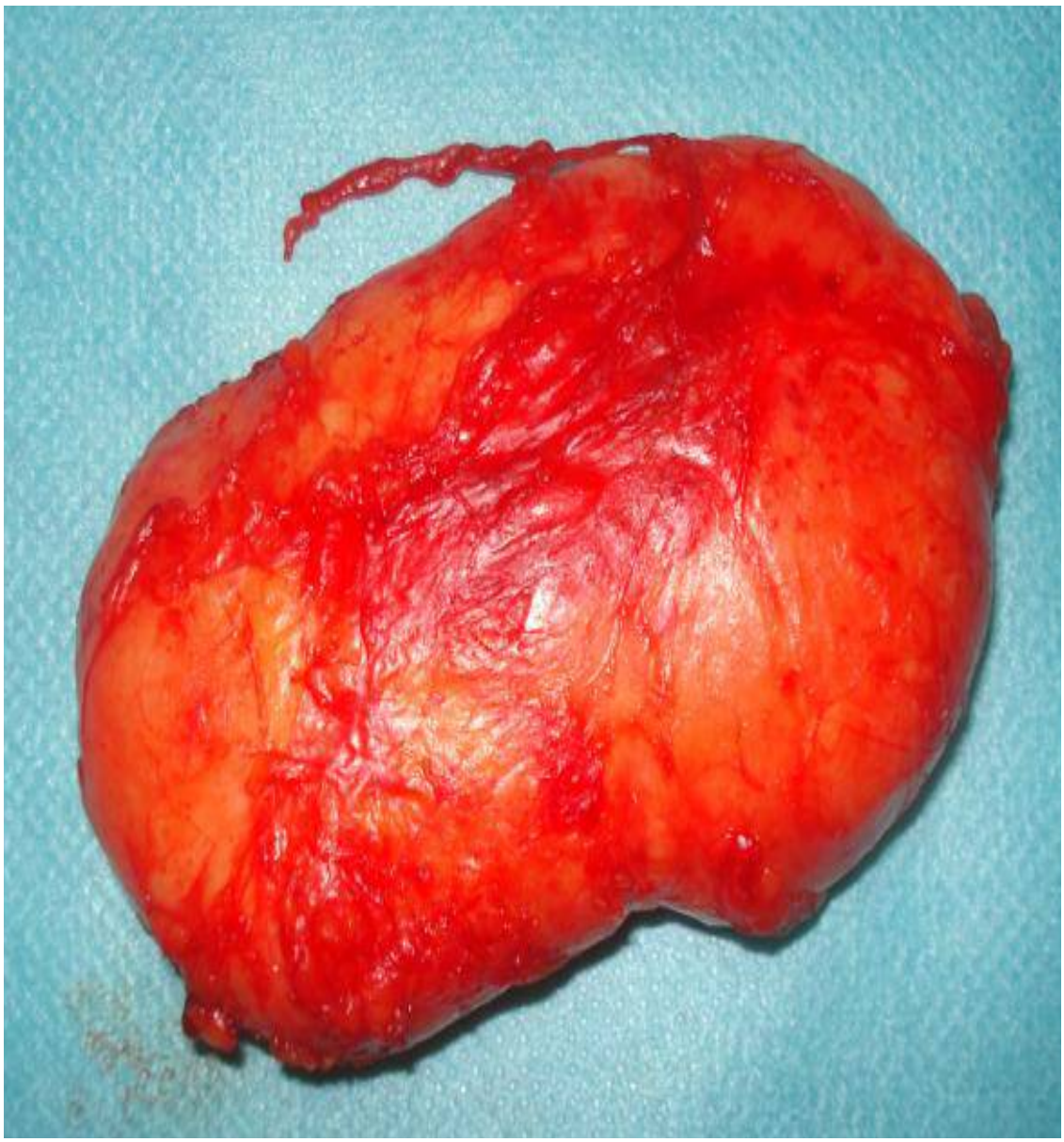

Figure 5 : Macroscopic aspect of the surgical specimen

3. Hemangiopericytoma :

- ✓ A 42-year-old woman
- ✓ Low back pain radiated to the right leg and foot for 2 years, with paresthesia over the right leg and difficulty walking.
- ✓ Physical examination: Abnormal S1–S2 dermatome sensation. Digital rectal examination revealed a retrorectal mass.

✓Plain radiography: No specific lesion in the right sacrum.

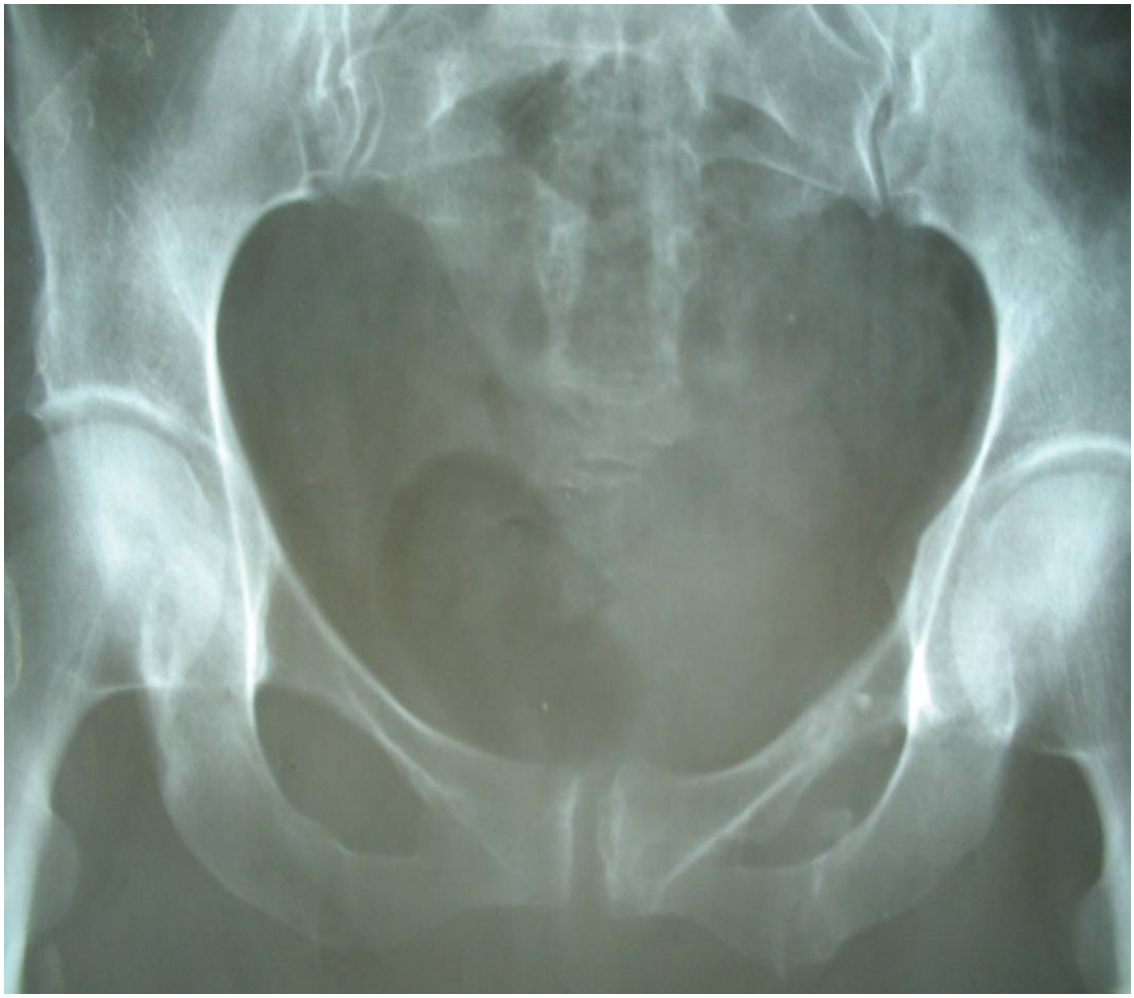

Figure 6 : X-ray of the pelvis without evident sacral lesion

✓ **Pelvic Computed tomography (CT):** Osteolytic lesion of the S1 and S2 right sacral bone, with cortical destruction and extension to the retrorectal space without invasion of neighbouring organs

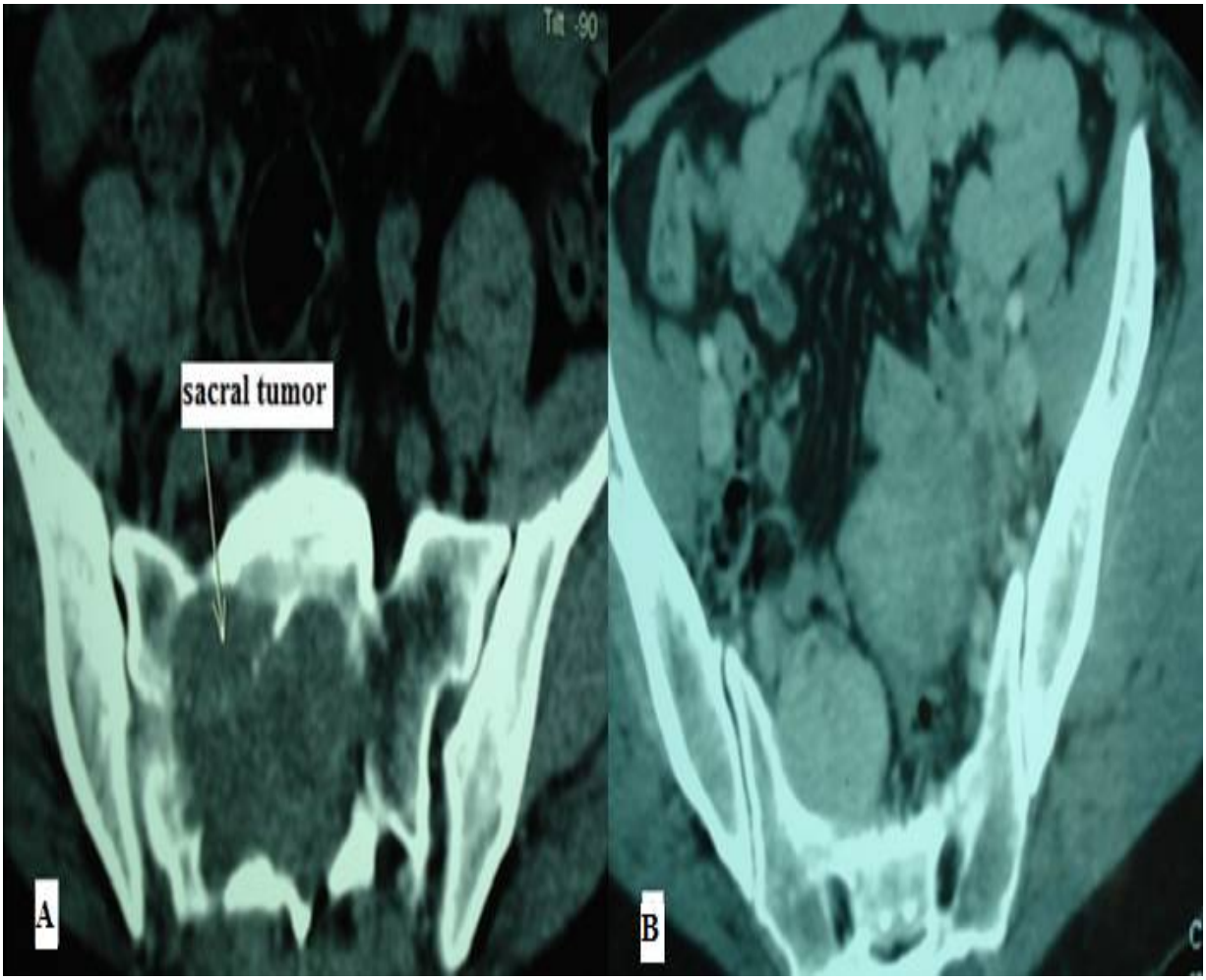

Figure 7 : Axial CT scan pelvic images showing invasive sacral tumor (A) with a prominent solid mass in the retrorectal space, enhanced after Gadolinium (B).

✓Pelvic Magnetic resonance imaging (MRI):

•Large sacral tumor involving the sacrum (S1–S2), associated to prominent extension into the retrorectal space without extension to the adjacent organs.This lesion is heterogeneous, with irregular margins, showing an intermediate signal on the T1 and T2-weighted sequences, early and intense enhancement after injection of gadolinium.

•A mesenchymal tumor, chordoma, or giant cell tumor was proposed before biopsy

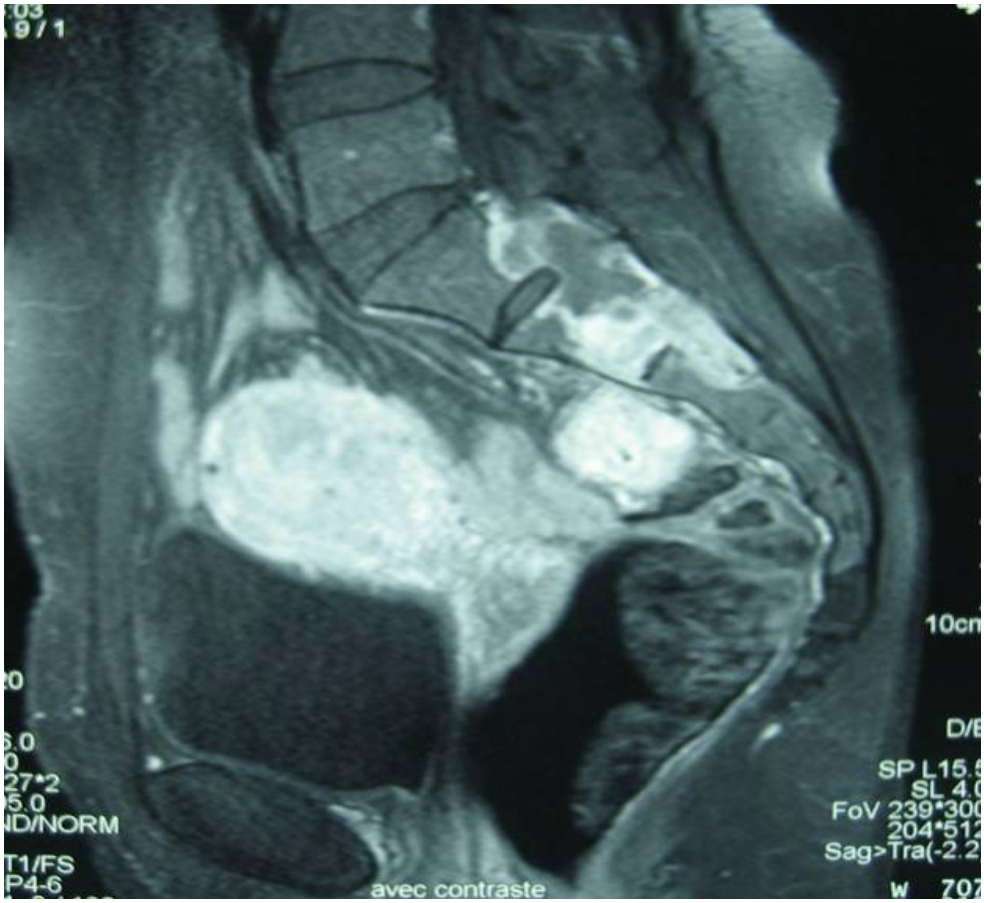

Figure 8 : Sagittal image of pelvic MRI after contrast showing a large tumor of S1 and S2 with prominent mass in retrorectal space, demonstrating an intense and heterogeneous enhancement after Gadolinium.

✓ A CT-guided biopsy was performed via the trans-sacral approach with no definitive histological diagnosis.

✓ An abdominal approach resection was performed. The sacral tumor and the bone around the tumor were largely excised➔The tumor was recognized as a hemangiopericytoma after histological examination.

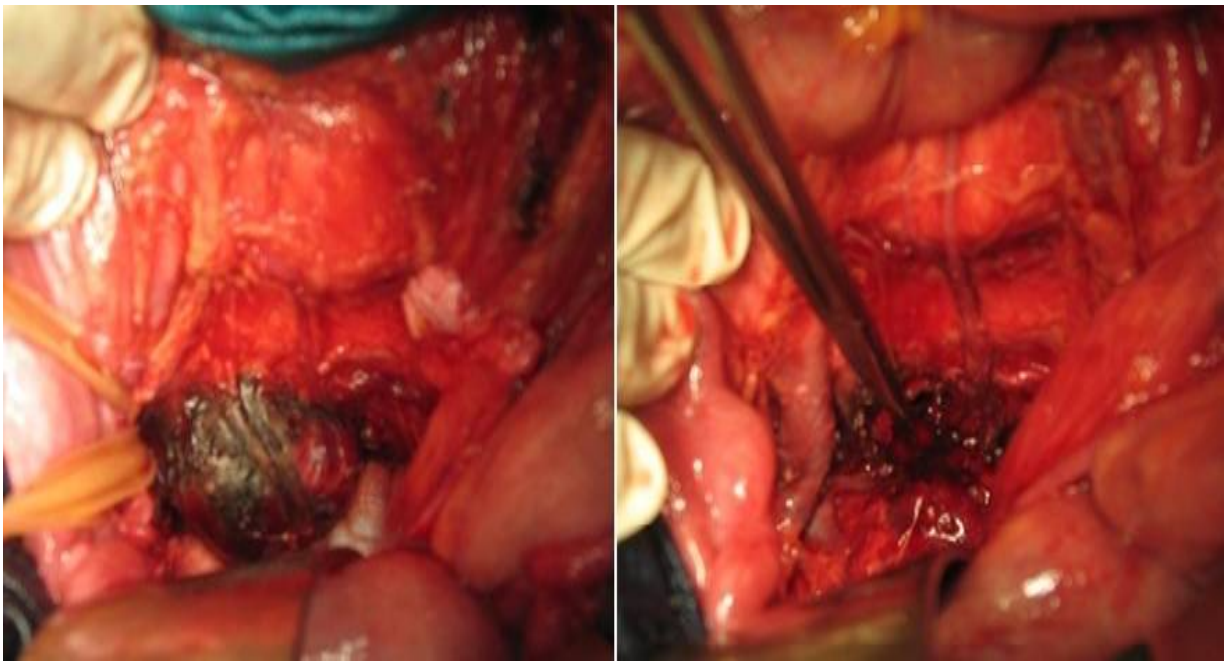

Figure 9 : Encapsulated tumor after retrorectal space dissection (A) Operative site after local tumor excision (B)

✓ A control pelvic MRI was performed after surgery, showing a residual sacral cavity of hemorrhagic content communicating with a presacral collection. This residual hematoma received simple monitoring.

✓ The patient received adjuvant radiotherapy of 45 Gy. Five months later, the patient presented with a small intestinal fistula, induced by radiation, treated by an upstream pocket stoma for 3 months, then restore of digestive continuity.

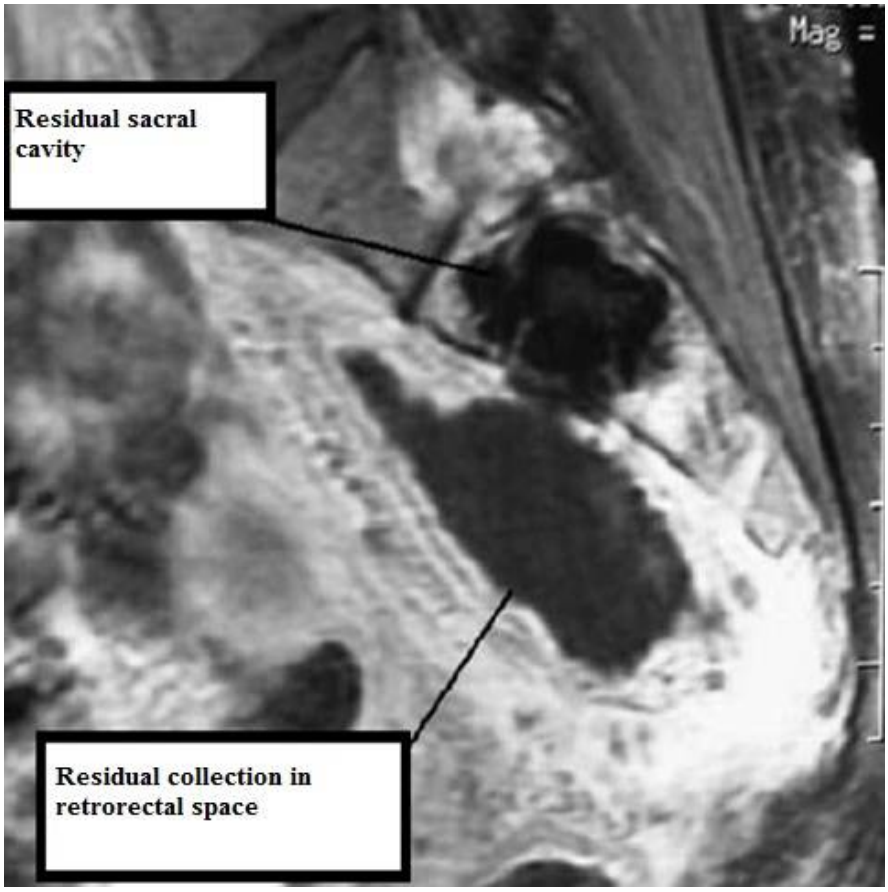

Figure 10 : Sagittal image of Magnetic resonance imaging T1 fat sat and gadolinium of control, showing a sacral cavity, communicating with a retrorectal collection, hypointense with peripheral enhancement.

4. Fibromatosis

- ✓ A 25-year-old lady
- ✓ Dyspareunia evolving for two months
- ✓ The speculum examination was very painful and showed extrinsic compression of the posterior wall of the vagina.
- ✓ **Pelvic ultrasound** Large and heterogeneous mass, with no clear origin.

- ✓ **Pelvic MRI**

- Left lateralized pelvic mass, heterogeneous, hypointense in T1, hyperintense in T2 and progressively enhanced after injection of gadolinium.
- This mass occupies the left ischio-rectal fossa pushing back the anus, the levator muscles and the lower rectum.
- It pushes the vagina and bladder forward, without parietal infiltration.
- The uterus, rectosigmoid hinge, soft perineal parts and neurovascular bundle are respected.
- There was no intraperitoneal effusion or deep lymphadenopathy.
- In conclusion, this left pelvic mass, respecting neighbouring organs, is of benign appearance.
- Surgical exploration has been indicated. The approach was an elective left lateralized perineal incision along the mass ➔ Histological study of the surgical specimen revealed a fibromatosis.

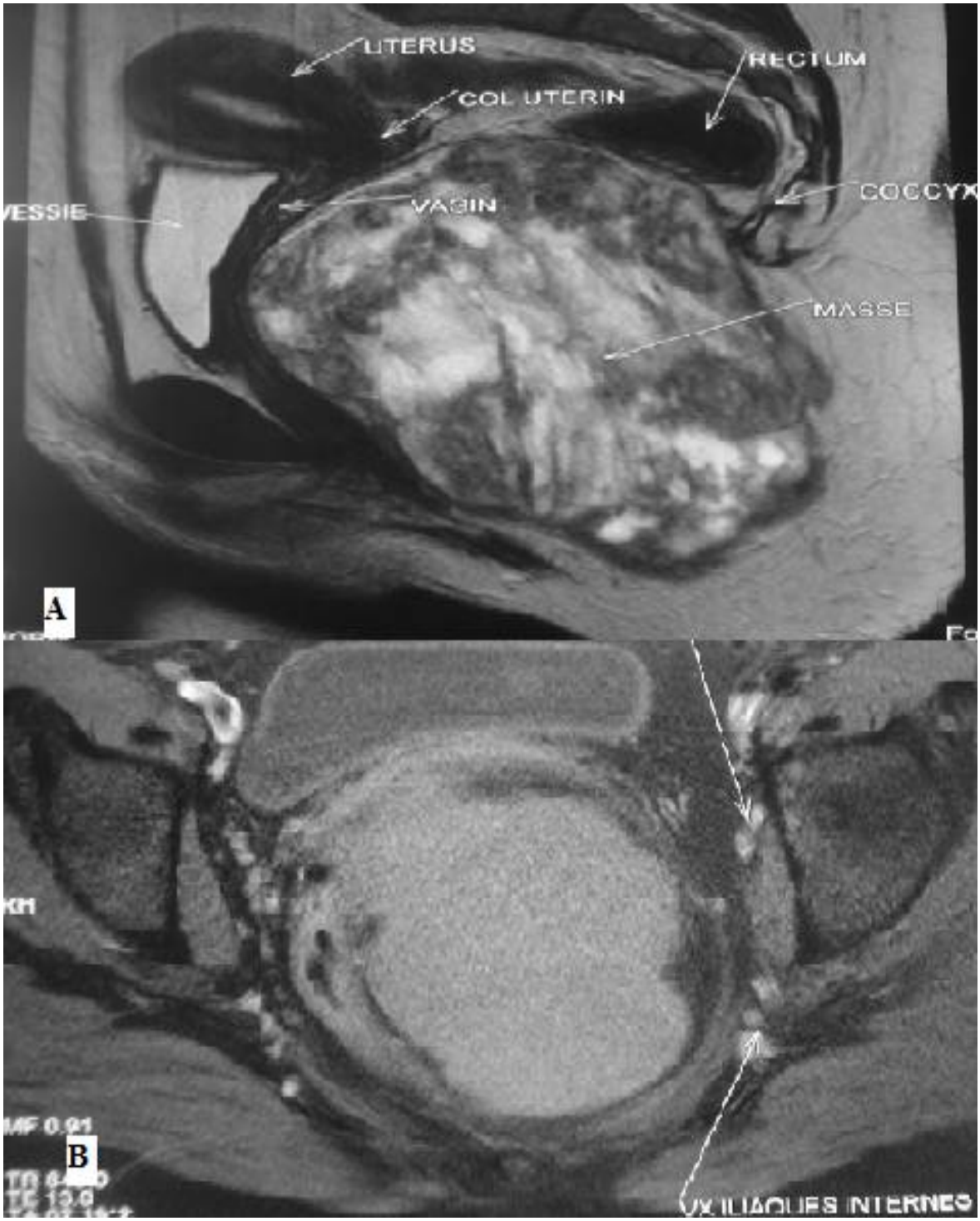

Figure 11 : Pelvic MRI showing retrorectal mass, heterogeneous, hyperintense in T2 sagittal image (A) and progressively enhanced after injection of gadolinium (B).

5. Liposarcoma

- ✓ 26- year-old man
- ✓ Defecation difficulty and discomfort
- ✓ Digital rectal examination revealed a retrorectal mass.

- ✓ **Pelvic CT scan :**
  - Well-circumscribed presacral mass, isodense to muscles (dimensions: 106x91 mm).
  - It pushes the rectum and bladder forward.
  - Absence of bone lysis or infiltration of adjacent structures.

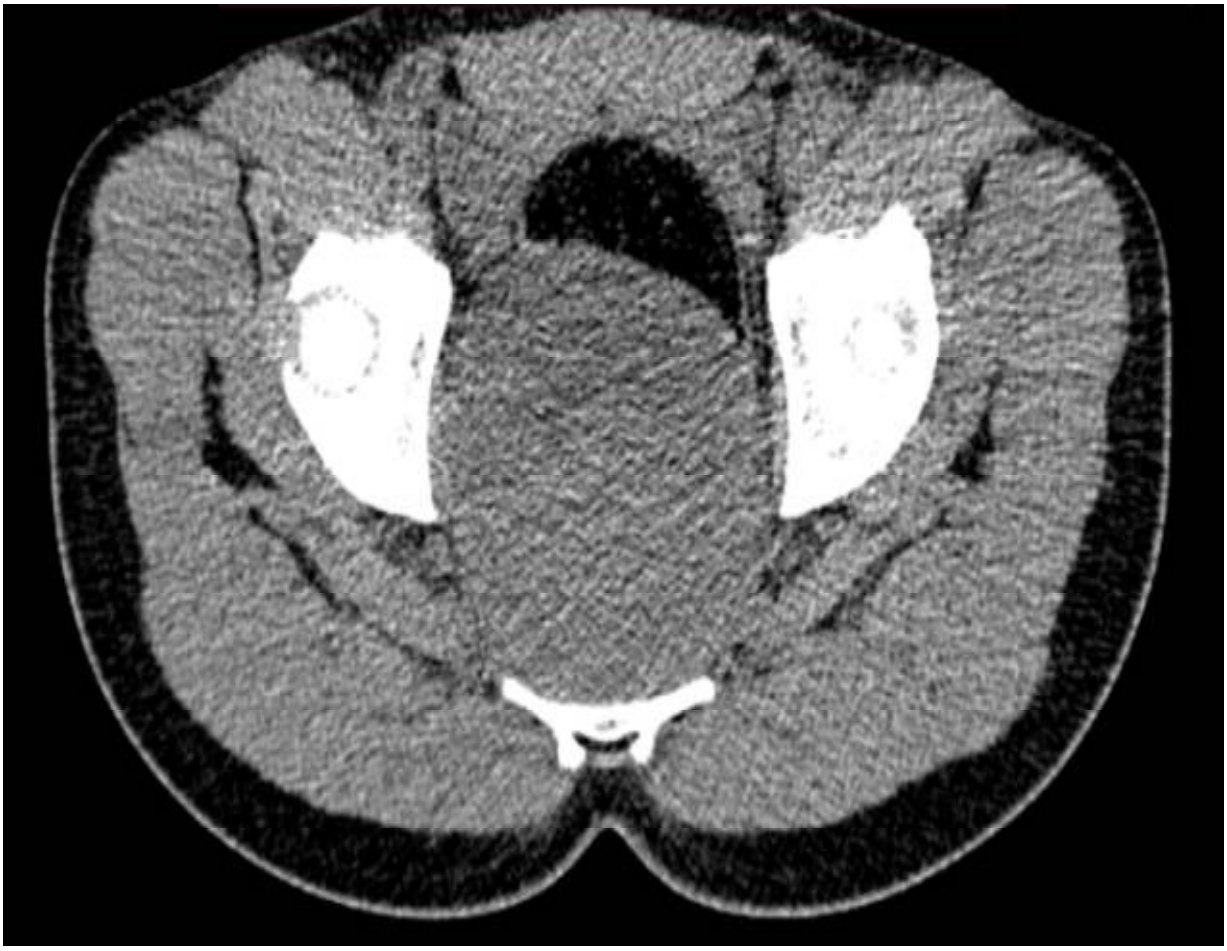

Figure 12 : Axial CT scan image without contrast showing a voluminous, well circumscribed retrorectal mass, isodense to muscles.

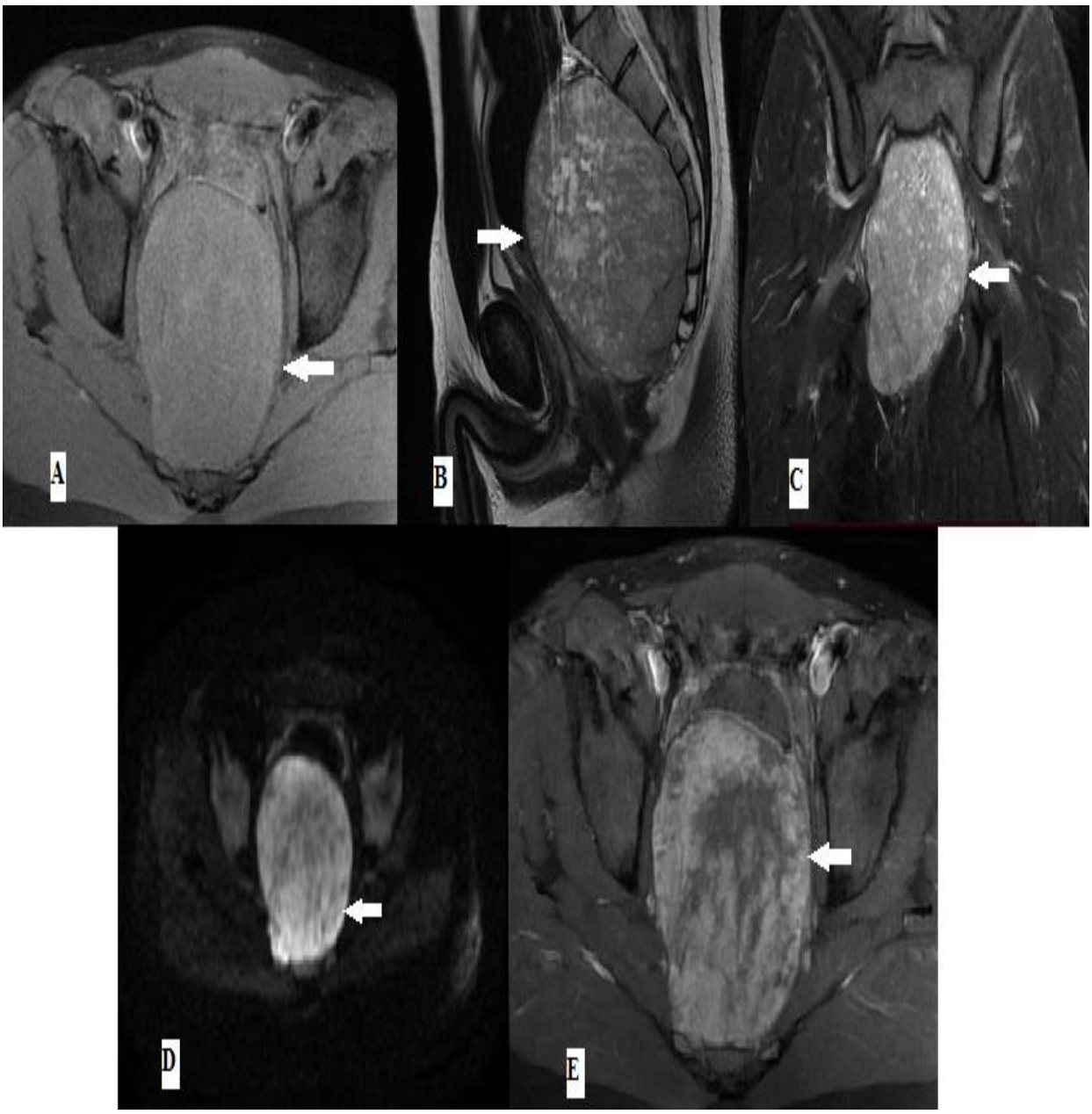

Figure 13 : Resonance Magnetic Images showing a retrorectal mass, T1 moderately hyperintense (A), with heterogeneous signal on both T2 (B) and T2 FAT-SAT (C), hypersignal Diffusion (D) and intensely enhanced after Gadolinium (E)

✓ **Magnetic resonance imagery (MRI)**

- Well-circumscribed presacral mass (dimensions: 106x91 mm).
- It is of slight hypersignal T1, heterogeneous signal T2, hypersignal diffusion with intense enhancement after injection of gadolinium.
- It pushes the rectum and bladder forward.
- Behind, it comes into contact with the sacrum, with a small bud at the level of the right sacred hole without lysis or infiltration of adjacent structures.

C. Evolution of cases :

o The long-term course was good in 5 patients, in which we did not have noted recurrence with a follow-up of 6 years in average.

o Only in one case (hemangiopericytoma), intestinal fistula due to enteritis caused by radiation was reported, but no recurrence have been noted in this patient, with a follow-up of 14years.

DISCUSSION

A. Reminder

I. Anatomic reminder

The retrorectal space corresponds to the continuation of the retroperitoneum into the pelvis. This potential space is situated between two anatomical structures, the parietal peritoneum of the posterior abdominal wall, and the presacral fascia of the sacrum (Waldeyer's fascia). It is bounded by:

- ✓ The mesorectum anteriorly.
- ✓ The anterior aspect of the sacrum posteriorly.
- ✓ The peritoneal reflection superiorly
- ✓ The coccygeus muscles and levator ani inferiorly
- ✓ The ureters, the internal iliac vessels, the lateral sacral artery, the sympathetic trunk, the hypogastric nerves, and the inferior hypogastric plexus constitute its lateral margins.

Embryologically, the retrorectal space is the region where develops the fusion of the hindgut and the neuroectoderm of the spinal cord. In adults, this area incorporates retrorectal fat, lymph nodes, loose connective tissue, the median sacral vessels, the superior rectal vessels, as well as sympathetic and parasympathetic branches [19, 20].

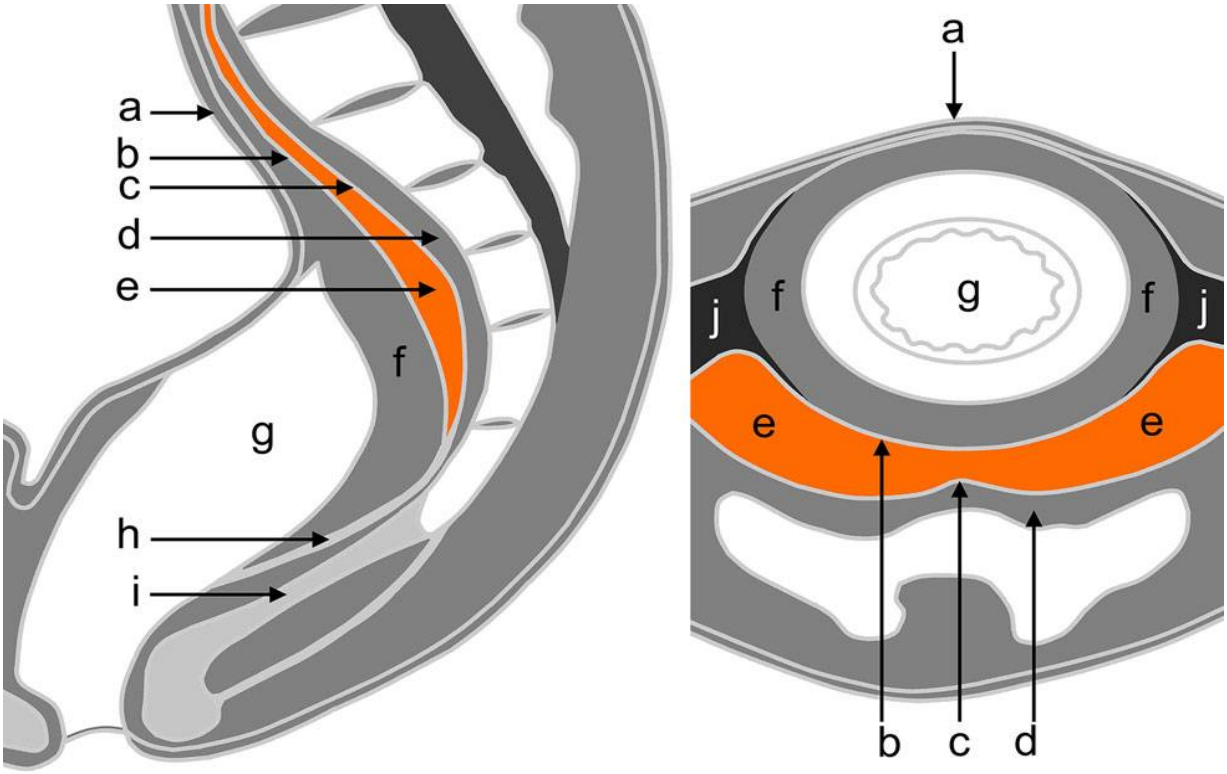

Figure 14 :Mid-sagittal and axial section schematics of pelvic cavity. a Peritoneum, b mesorectal fascia, c presacral fascia,d presacral space, e retrorectal space, f mesorectal space, g rectum, h rectosacral fascia, ilevator ani, and j lateral ligament. [12].

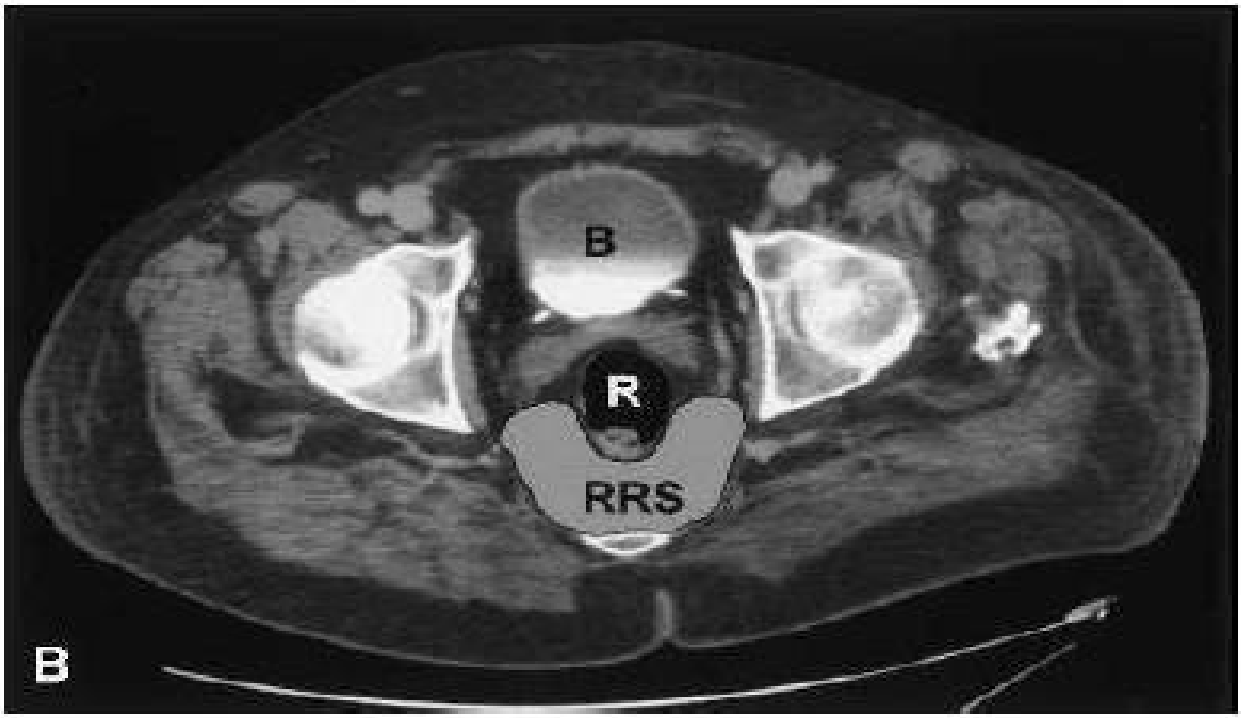

Figure 15 : CT image showing the limits of the retrorectal space RRS, R: Rectum B: Bladder [10].

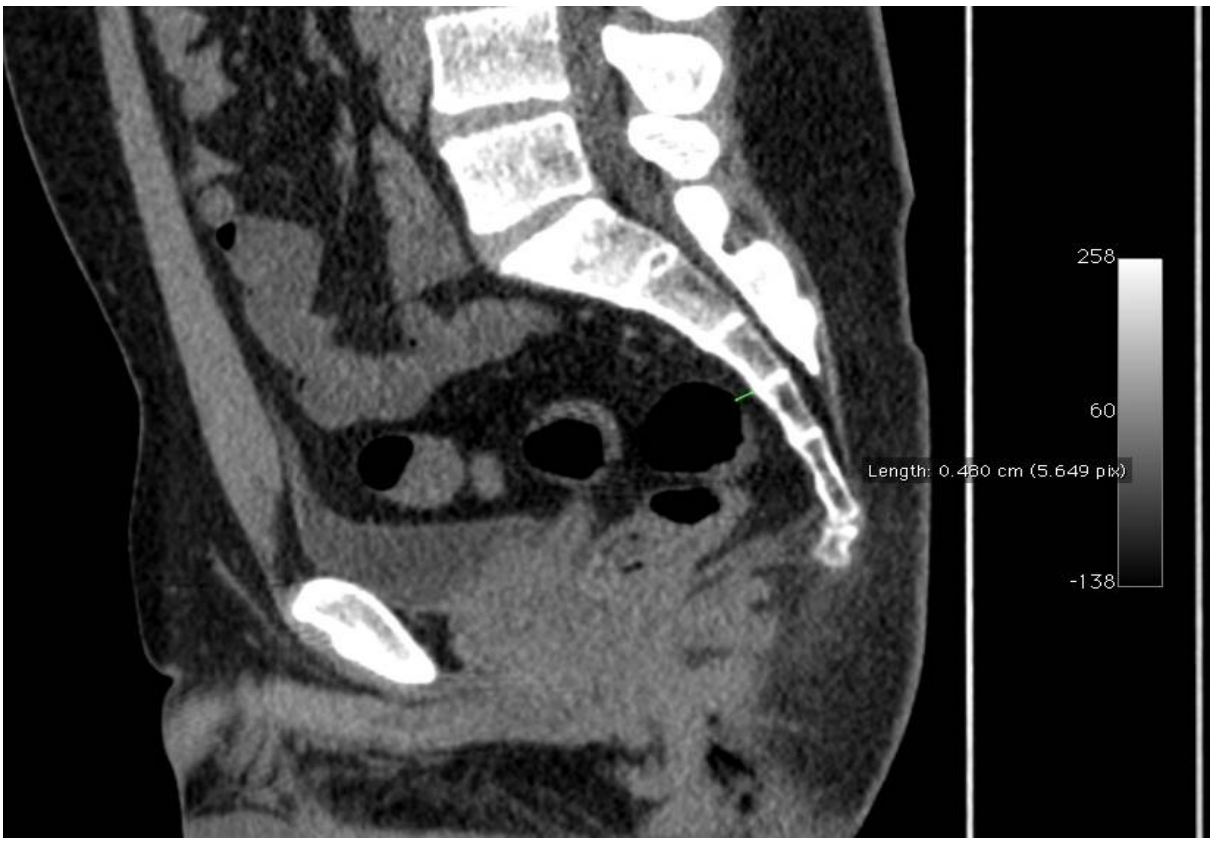

Figure 16 : sagittal view of presacral space [92].

Anatomical elements of the retrorectal space [21, 22, 23]

The retrorectal space communicates widely with the median retroperitoneal region, through which the vascular pedicles and the sympathetic nervous system arrive

1. The vascular pedicles:

a. The middle sacred vessels:

- ***The median sacral artery*** is a small single branch that arises from the posterior distal part of abdominal aorta.

Origin: Generally, it originates immediately above the level of the bifurcation, into right and left common iliac arteries, at the level of the superior part of L4 vertebra.

Course: It descends in the midline anterior to the fourth and fifth lumbar vertebrae bodies, then over the sacral promontory, towards the apex of the coccyx.

Branches: It furnishes some small branches that contribute to supplying the 4th and 5th lumbar vertebrae, sacrum, coccyx and supero-posterior rectum. The median sacral artery anastomoses with the lumbar branch of the iliolumbar artery, lateral sacral arteries and tiny branches to the rectum.

Termination: It terminates in the coccygeal body, near its apex.

- ***The middle or median sacral vein***

It accompanies the middle sacral artery along the front of the sacrum, and emptying in the left common iliac vein

b. The lateral sacral vessels:

➢ ***The lateral sacral arteries***

There are usually two lateral sacral arteries: the superior and the inferior lateral sacral artery. They arise from the posterior division of the internal iliac artery.

- ***The superior sacral artery*** runs medially. It typically anastomoses with the middle sacral artery and penetrates into the first or second anterior sacral foramina. It supplies the upper two sacral foramina and contents, erector spinae, and cutaneous supply over the sacrum. It anastomoses with the superior gluteal artery.

- ***The inferior sacral artery*** runs obliquely over the piriformis muscle and runs down through to the coccyx, where it anastomoses with the middle sacral artery. It passes toward the third and fourth sacral foramina and supplies the lower two sacral foramina and contents as well as the piriformis muscle, coccyx, erector spinae, and skin over the sacrum.

➢ ***The lateral sacral veins***

They accompany the lateral sacral arteries on the anterior surface of the sacrum and end in the hypogastric vein. The lateral sacral veins anastomose with median sacral vein and form the presacral venous plexus. This last course into the pelvic fascia, covering the anterior aspect of the body of the sacrum. Because of its invisibility during rectal surgery, injuries to this plexus may be life-threatening.

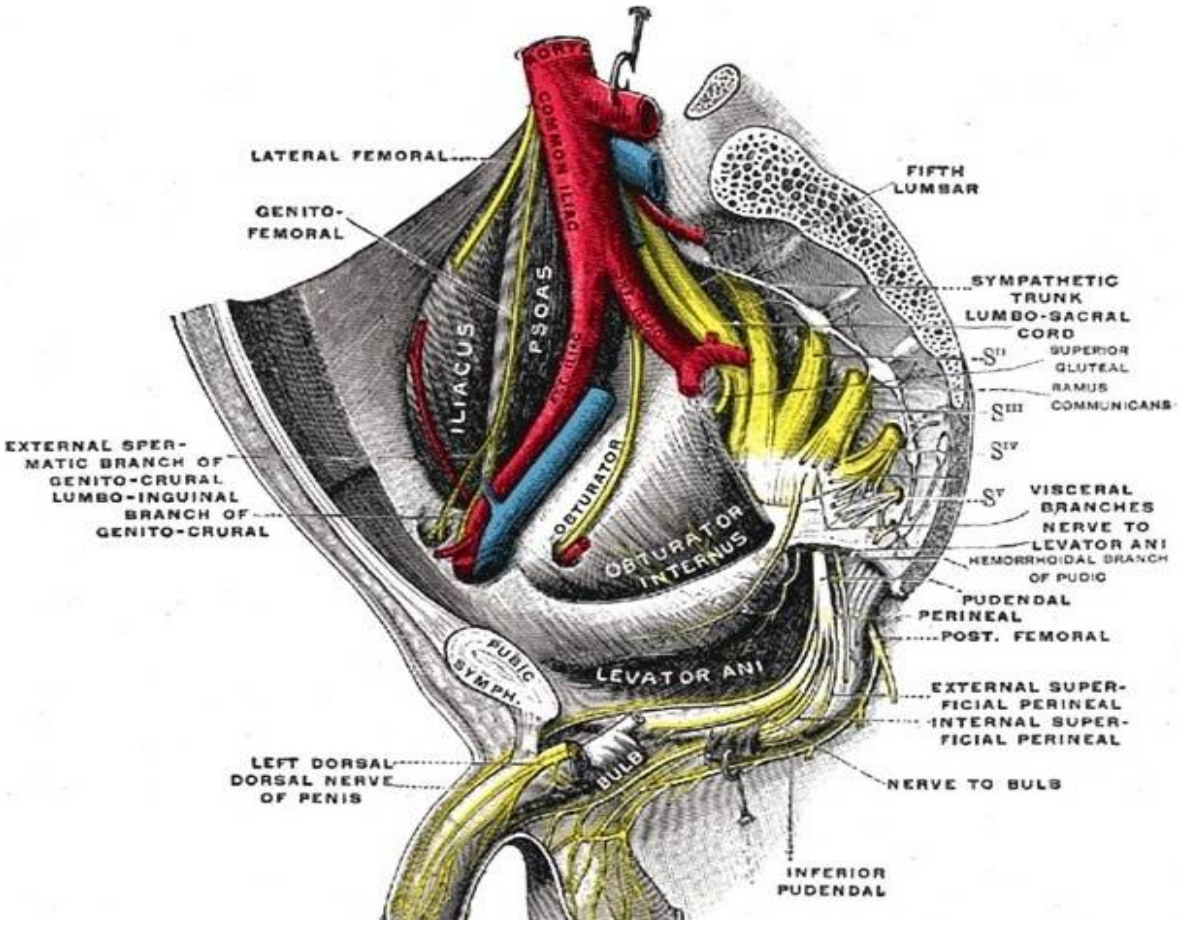

Figure 17 : anatomy of the presacral space [92].

2. Sympathetic nervous system

a. The sacral or pelvic sympathetic chain:

The sympathetic chain and ganglia are comprised of discrete sympathetic ganglia (containing neuronal cell bodies) which communicate with each ganglion via the sympathetic trunk (containing myelinated axons).

- Origin: In pelvis, it arises from S1 to S5 sacral sympathetic ganglia, located medial to the anterior S1-S4 sacral foramina
- Branches: sacral splanchnic nerves arising from the S1 to S5 sacral sympathetic ganglia provide branches to the inferior hypogastric plexus supplies bladder (via vesical plexus), rectum (via rectal plexus), uterus/prostate (via uterovaginal/prostatic plexus)
- Relations: lateral: sacral foramina, spinal nerves / posterior: sacrum

It comprises branches of S2, S3 and S4. It is responsible for erection in both men and women. The erector (cavernous) nerves travel, with sympathetic branches, in the neurovascular bands of Walsh, outside the aponeurosis of Denovilliers, very close to the anterolateral aspect of the lower rectum opposite the seminal vesicles.

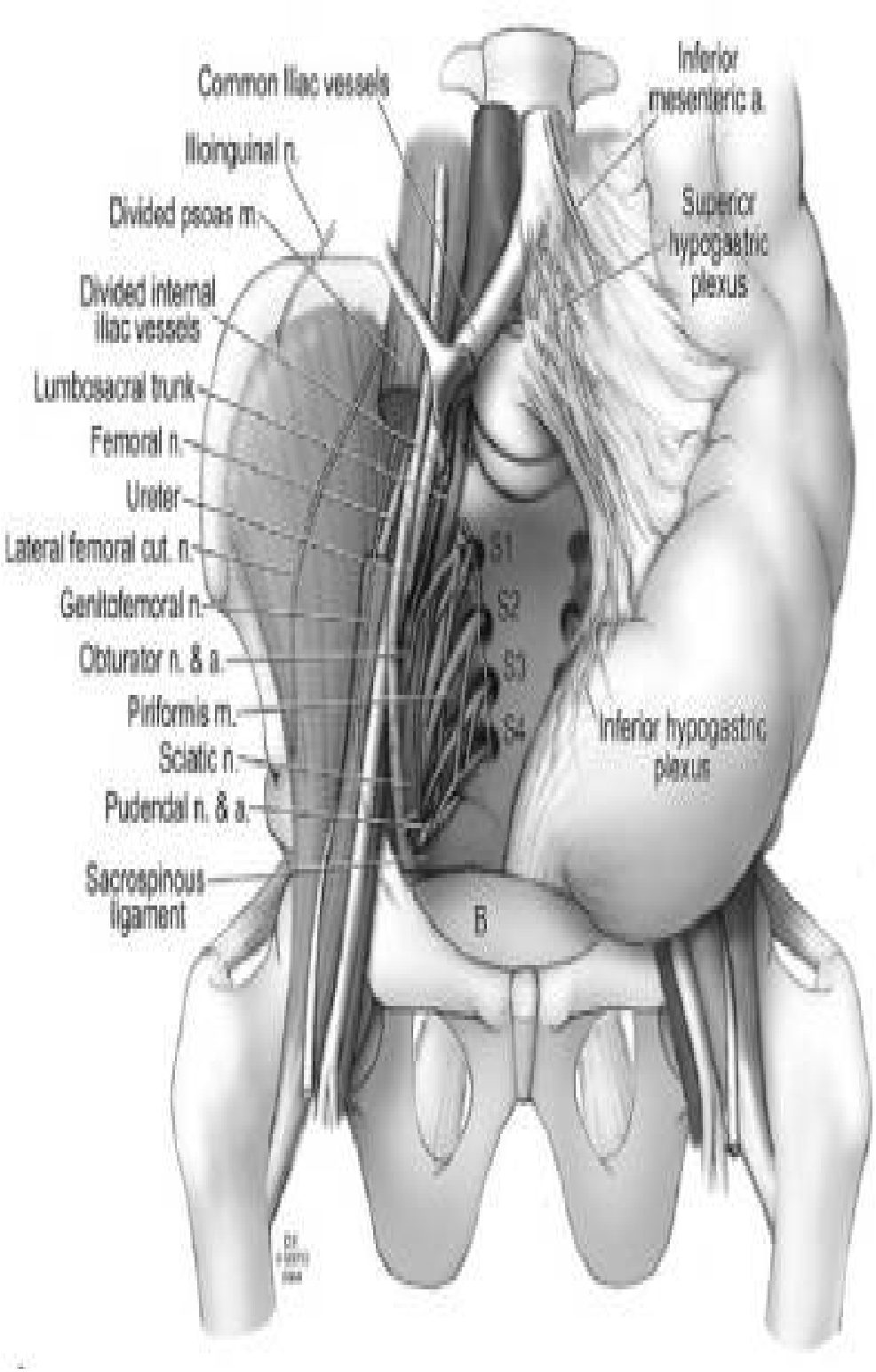

Figure 18 : anterior view of the retrorectal space showing its different elements [93]**.**

II. Epidemiological characteristics ofretrorectal tumors (RRT) :

In this chapter, we will describe the epidemiological characteristics of RRT in our series.

Due to its rarity and asymptomatic nature, there is no clear information regarding the real prevalence of retrorectal tumors.

Their incidence is expected to be 1 in every 40.000 patients with a female predominance and an average age of 30 years. However, their occurrence may be lower affecting 1 per 63.000 patients [24, 25].

In our hospital, the incidence of RRT is estimated at 0.04% of hospitalizations or 1 case per 2500 patients with a frequency of 0.5 cases per year.

III. Histologic classification

The retrorectal space comprises the union of the embryologic hindgut, neuroectoderm, and the bony pelvis. Thus, a mixed group of tumors can occur in this region.

Over the last few decades, several classifications have been suggested, but none has been universally agreed.

- Ohlig and Johnson were the first to describe a **classification** system, and divided masses according to their **origin** into congenital, neurogenic, miscellaneous, inflammatory, and osseous[4]. This classification is the most usually used

- This later was improved by Dozois et al. to **benign and malignant** masses because of their impact on the overall management[26].

- Lev-chelouche proposed to devise retrorectal tumors into :
  - Congenital versus acquired
  - Benign versus malignant. [15]

This classification permitted to solve the issue of the different variety of tissues that will be found in that region.

- Regarding the presence of normal tissue in an abnormal location, like endometriosis, or abnormal tissue in an abnormal location, like metastatic lesions, Mohammad Bukhetan Alharbi (2018) suggested a concise scheme, based on **germ layer cells** (ectoderm, mesoderm and endoderm).[27]

- Pappalardo et al proposed another classification of the presacral tumors, based **radiological findings**. They are divided into three groups, according to their origin[28] :
  - **Group I**: **arising in the retrorectal space** (tailgut cysts, abscesses, dermoid cysts, epidermoid cysts, teratoma, rhabdomyosarcoma, liposarcoma, and unclassified sarcoma) infiltrating the sacrum posteriorly, the rectum anteriorly, or both.
  - **Group II**: arising in the **sacrum or spinal cord** (anterior meningocele, Ewing tumor, neurofibroma, neurofibrosarcoma, neurilemoma, chondrosarcoma, and osteogenic sarcoma) growing anteriorly in the retrorectal space;
  - **Group III**: arising in the **rectum** of both cystic (rectal duplication) and solid type (leiomyosarcoma and lymphoma) growing posteriorly in the retrorectal space.

Tableau 1: Modified classification of retrorectal tumors described by Uhlig and Johnson [4].

	Congenital	Neurogenic	Osseous	Miscellaneous	Inflammatory
Benign	Epideromoid cyst Dermoid cyst Enterogenous cyst Cystic hamartomas Anterior sacral meningocele Teratoma	Neurofibroma Neurilemoma (schwannoma) Ganglioneuroma	Giant-cell tumor Osteoblastoma Aneurysmal bone cyst	Lipoma Fibroma Leiomyoma Hemangioma Endothelioma Desmoid	Perineal or pelvirectal abscess Endometriosis Foreign body granuloma Infectious granulomas Diverticulitis Crohn's disease
Mali-gnant	Chordoma Adrenal rest tumor	Neuroblastoma Ganglio-neuroblastoma Ependymoma Malignant peripheral nerve sheath tumours (Neurofibrosarcoma Malignant schwannoma)	Osteogenic sarcoma Ewing sarcoma Myeloma Chondrosarcoma	Liposarcoma Fibrosarcoma Malignant histiocytoma Leiomyosarcoma Hemangio-pericytoma Metastatic adenocarcinoma	

B. Clinical study

- Primary tumors of the retrorectal space in adults are very rare and most of them are asymptomatic. They can have been discovered incidentally on imaging for different causes. Symptoms when they do appear, they are minimal or non-specific, like:

  - ✓ **Rectal tenesmus**, paradoxal **diarrhea**, **sexual dysfunction**, and **pain** which occurs essentially in male patients older than 60, in the case of malignant tumors or benign but infected tumors[29].
  - ✓ Pressure on neighboring structures can cause **constipationor fecal incontinence**, retention, and **urinary symptoms**. Compression of the sacral and pelvic nerves and the iliac vessels may cause lower extremity **pain and swelling** [10].
  - ✓ Pelvic outlet obstruction during labor and delivery has been reported in women of reproductive age, which presents a categorical indication for surgical resection, despite the possibility of benignity of the tumor.[30, 31]

- Menteş BB et al. report rectal pain and perirectal mass sensation as the principal symptoms in their respective case series. However, Kye BH and Macafee DA describe discomfort or lower abdominal pain as the most frequent symptom at first visit [32].

- Unusually, certain tumors induce more specific symptoms. Headache during defecation or intercourse, due to increased intracranial pressure is mostly associated to an anterior sacral meningocele ; while chordomas are linked to a constant pain of mild intensity in the pelvic, lower lumbar, and/or gluteal region[32].

- The majority of tumors are sporadic; however, some genetic disorders like neurofibromatosis and Currarino syndrome are associated with tumors in this space[33]. Perianal infection and recurrent pilonidal cyst due to infected cysts have been reported[34, 35].

Physical examination

- Retrorectal tumors are habitually discovered fortuitously during routine pelvic or rectal examination. The digital rectal exam can help to recognize if the masse is fixated or freely mobile, its cranial extent of and its relationship to neighbouring structures. The palpation allows distinguishing between retrorectal tumors, which are often easy to compress and soft, and an infected developmental cyst or a primary perirectal abscess extending in supralevatorly, which are tender[10, 17, 18].

- Posterior anal and gluteal dimpling may be noted. Neurological signs may be due to bony destruction, involvement of the sacral, and the obturator nerves[17, 29, 36].

- Bimanual pelvic examination is essential in female patients to eliminate conditions such as uterine or ovarian adenocarcinomas, which are much frequent conditions[31].

- Anoscopy and rectoscopy allow to eliminate an intrarectal or anal lesion, or to highlight the communication with a cystic lesion. This fistulization can be primary or secondary to the inflammatory changes and explains the superinfection of the cysts.

- Colonoscopy should be achieved in all patients, in order to discover a synchronous colorectal adenocarcinoma[31].

C. Imaging

1. Plain radiographs

Since Computed Tomography scans and Magnetic Resonance Imaging are currently considered as the imaging modalities of choice in diagnosis of retrorectal space tumors, the role of plain radiographs has been reduced. Generally, plain radiographs offer little supplementary information, if they are not normal. Nevertheless, they could show solid tumor displacing the sacrum, **calcifications, osseous destruction of the sacru**m, and **teeth** or small bone fragments in teratomas. The "**scimitar sign"**, that can appear on radiograph, is due to the unilateral sacral defect, and it is pathognomonic for anterior sacral meningocele.[1, 18, 20, 37]

2. Transrectal ultrasound

Transrectal ultrasonography can help to identify the **cystic or solid nature** of the lesion, its **homogeneous or heterogeneous**, calcified, and encapsulated character. It permits also to assess the **involvement of the rectal wall** and the existence of suspicious lymphadenopathy. TRUS is a very sensitive imaging tool, especially if it is combined with rigid proctoscopy, and achieved by an experienced examiner. The diagnosis of retrorectal tumor can be eliminated in the absence of clear evidence of this disease.[20, 38]

3. CT

CT and MRI are the best preoperative diagnostic modalities. CT is often the first line diagnostic study. It permits to visualize **the destruction of the bone cortex**, to determine the **solid or cystic nature** of the lesion and whether involvement of adjacent organs. Sometimes, CT is unable to discriminate between the benign or malignant mass [18, 41].

4. MRI

MRI **is more valuable than CT**, because of its major diagnostic accuracy in the characterization of masses, by offering a detailed view of the **anatomical correlations** and the histology of the tumor, assessing the planes of resection and spatial **relationship to surrounding structures,** as well as revealing the neural tissue involvement. CT and MRI can show the nature of a lesion (cystic or solid), but it cannot always conclude its malignant or benign characteristics. Their sensitivity and specificity for malignant disease were respectively about 81% and 83%. Nonetheless, smooth-walled cystic lesion on MRI is normally benign, as solid or heterogeneous masses are mostly malignant.

MRI can be combined with angiograms and venograms (MR angiogram and venogram), in case there is tissue distortion due to mass effect by the neoplasm, with the intention to determine vascular anatomy and its involvement, which enable to guide the correct surgical approach (anterior, posterior, or combined), and also to determine the intraoperative extent of excision (local or en bloc resection). [41-44]

5. Fistulogram and barium enema examination

Frontal view of the barium-filled rectum during barium enema examination may show a rectal deviation, the lateral view is especially helpful to detect an enlarged retrorectal space or anorectal stenosis [39, 40].

Fistulograms permit to investigate an eventual developmental cyst in patients presenting a chronically draining sinus [14].

6. Arteriography

It is systematic for some teams. It permits to make the diagnosis of hemangiopericytoma in front of a **hypervascularized** mass, or to perform preoperative embolization. [45,46]

Bone scintigraphy

It is useful in the evaluation of the extent, looking for secondary bone locations.

7. Preoperative Biopsy

The limitations of imaging to distinguish between benign and malignant lesions, specifically for solid tumors, underline the need for histological diagnosis. Preoperative biopsy in the management of those masses is still debated because of risk of infection of cystic lesions and needle-tract seeding with malignant cells[47].

Studies preferring preoperative biopsy mention the differing operative strategies for benign and malignant lesions:

- ✓ Malignant tumors have higher morbidity compared to benign lesions, and claim wider in bloc resection, desiring for negative margins.
- ✓ Some authors suggest conservative, nerve and function-sparing surgical approach, if the lesion is benign on preoperative biopsy[26, 47].
- ✓ Preoperative histology permits excluding unresectable metastatic lesions, bilateral pelvic side wall involvement, and patients with poor surgical risk factors due to comorbidities [26].

- ✓ It is also useful in the use of neoadjuvant chemoradiation therapy for certain tumors like large sarcoma, Ewing's sarcoma, osteogenic sarcoma, and neurofibrosarcoma.[48, 49]

Authors not in favor of preoperative biopsy cite[1, 3, 35, 38]:

- ✓ Misdiagnosis, sampling error, and high false negative rates, there for missing a malignancy.
- ✓ They favor excision without preoperative biopsy if the tumor is resectable.
- ✓ Further, needle tract seeding with malignant cells is a risk and infections of the cystic lesions have been reported

Three general approaches can be taken: transgluteal, anterolateral extraperitoneal and transsacral.The transgluteal, approach is preferred by most radiologists, as this can be done by staying "low and medial" adjacent to the sacrum, below the superior gluteal artery, medial to the inferior gluteal artery and sciatic nerve[47, 50].

D. Discussion of cases

1. Epidermoid cyst:

Frequency: Retrorectal epidermoid cysts are very rare to be seen in adults. They represent 60% of all congenital presacral lesions [38].

Beak et al. presented a study between 2001 and 2009 showing 15 cases of presacral cysts, including only 5 cases which their histopathology were an epidermoid cyst.

During the period between 1990 and 2009 in Korea, the epidermoid cyst was identified in 13 cases out of 47 presacral cyst cases.

Whittaker conducted a study between 1922 and 1936, showing 22 cases of the presacral cysts without any case of epidermoid cysts[51].

It should be noted that, up to the present day, only 34 cases of epidermoid cysts have been published in the literature.

Age and sex:

Epidermoid cysts are more frequent in middle-aged women than in males 8 with a sex ratio of 17. However, there are 3 reported cases of presacral epidermoid cyst in adult males. They are affecting pediatrics more than adults and have tendency to be asymptomatic[52].

Pathology

The pathogenesis of epidermoid cyst is still ambiguous and widely debated; however congenital or post traumatic theories have been suggested.

Epidermoid cyst is recognized by arising from defective closure of the ectodermal tube between the 2nd and 5th week of embryonic life, which results in inclusion of skin with or without accessory appendages which are lined by stratified squamous epithelium. [53, 54]

The acquired type, originally referred to as “implantation cyst,” is believed to originate through implantation of epithelium by either surgical or accidental trauma into deeper mesenchymal tissues [55].

Clinical presentation

Epidermoid cyst is very slow-growing mass; Therefore, It is mostly asymptomatic. The early symptoms are related to the mass effect of the cyst on the surrounding structures. They include constipation, lower back pain,

hydronephrosis, dysuria and difficulty in defecation. Consequently to late clinical presentation of the cyst, complications may appear, including recurrent abscesses, and anal bleeding.

The epidermoid cysts are unlikely to undergo malignant transformation. [51, 56]

The clinical examination looks on inspection for a posterior dimple (post anal dimple) located at the lower part of the anal canal, more exactly at the level of the emergence of the intersphincteric space. This dimple is pathognomonic for developing cysts, which is infrequent. It was not found in our patient. On rectal examination, we look for a swelling or a renitent perianal mass filling the sacral cavity, as in our first observation.

Multiple conditions can confuse the proper diagnosis such as perianal fistula, pilonidal sinus, proctalgia fugax, and perianal abscesses.

Imaging [56, 57]

Since the clinical evaluation is rigorous to diagnose this disease, the evaluation of the radiological image is required, especially that it aims to clarify the cystic nature of the lesion, its local extension and possible malignant degeneration:

- ✓ Transparietal ultrasonography, can show uni or multilocular cyst with eventual internal echoes. Transrectal ultrasound (TRUS) can also be used.
- ✓ On CT-scan images, the cyst has a thin wall which will be thick if the mass is infected. It may be hyperdense if it contains calcification, bleeding, or high protein content.

- ✓ A pelvic MRI is considered as the gold standard in the diagnosis of epidermoid cyst as it shows clearly the margins of the cyst from the surrounding structures. T-1 and T-2 signals are variable based on cyst content, but mostly hypointense on T1 and hyperintense on T2-weighted images. MRI has the benefit of eliminating an anterior meningocele that may be associated in rare cases with the retrorectal epidermoid cyst.
- ✓ If the overall clinical and radiological assessments show the mass is a cyst, the preoperative biopsy is not indicated and the lesion is resectable. The biopsy will rapture the cyst and increase infection rate, fistula formation, and tumor dissemination. If the mass is suspicious for cancer and is not resectable, the biopsy is recommended to guide the management plan.
- ✓ In our patient, the cyst has a thin wall and homogenous content which conclude to not complicated epidermoid cyst.

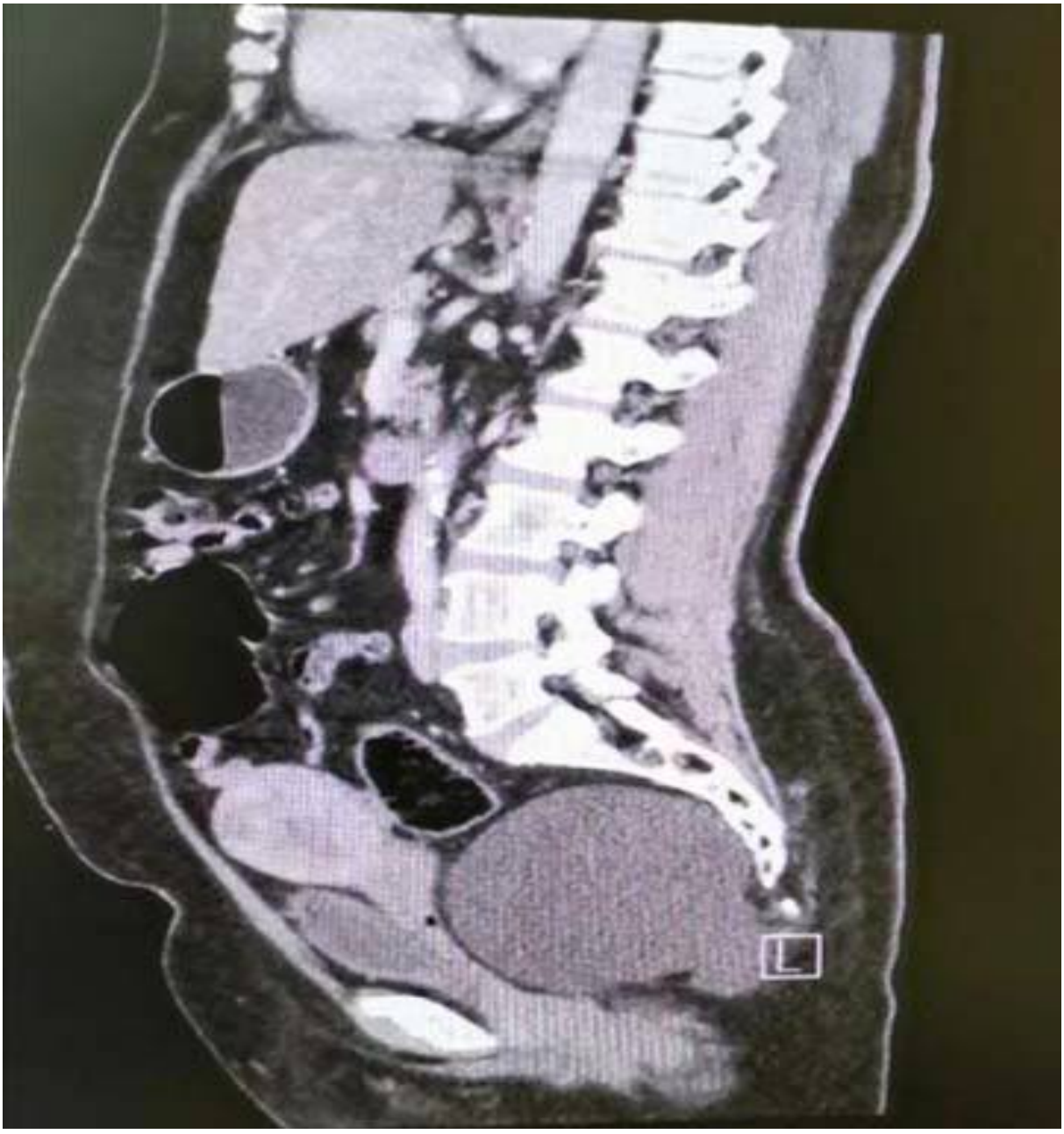

Figure 19 A CT scan image of the abdomen and pelvis (the red arrow points to cyst) [94].

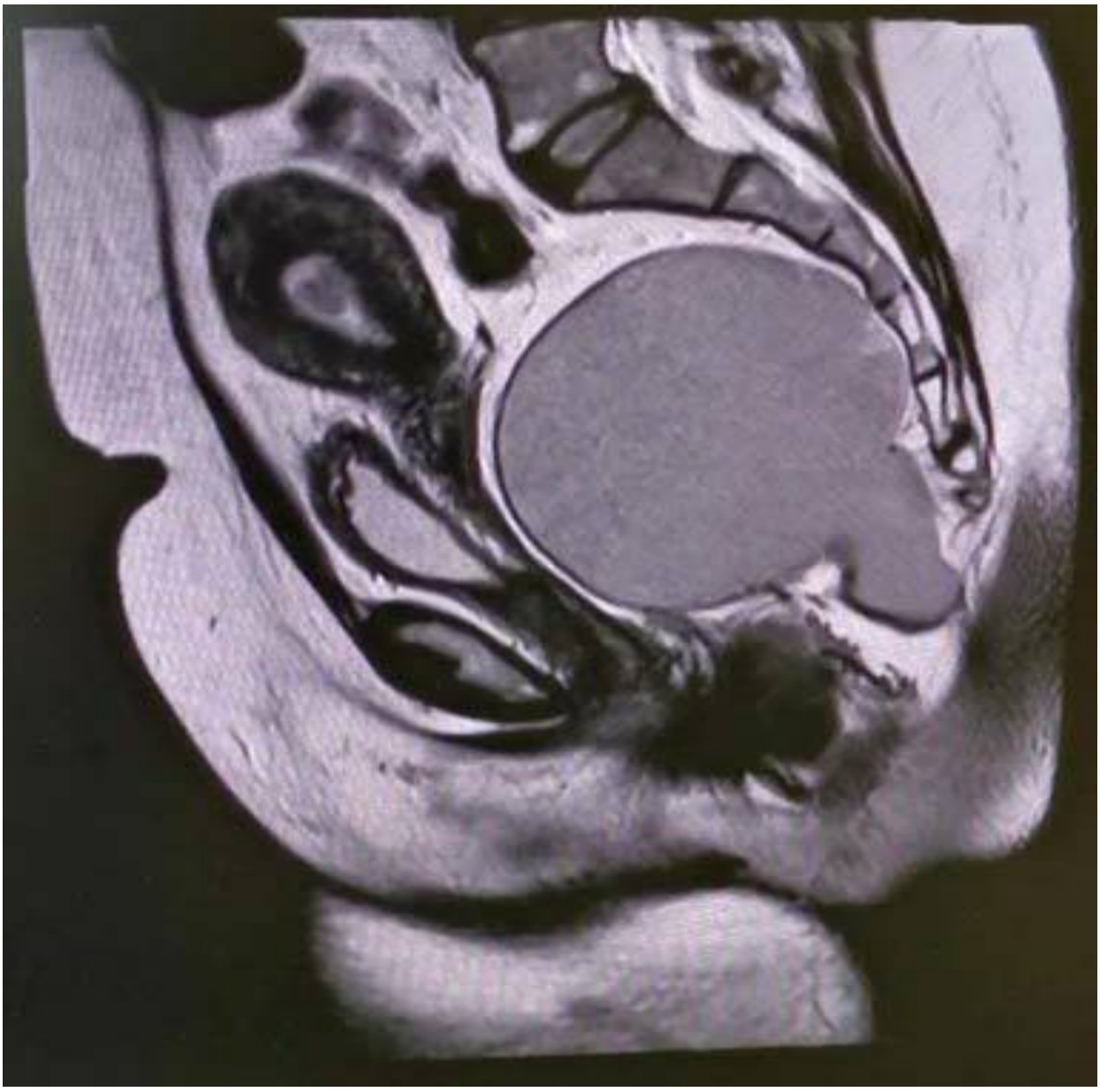

Figure 20 : MRI scan image of the pelvis (the red arrow points at the cyst) [94].

Anatomopathology

The epidermoid cysts tend to be well circumscribed. They reveal cystic wall lined by keratinized stratified squamous epithelium filled with keratin. ECs are variable in shape, consistency and size. They are described as “pearly tumor” due to shiny, smooth, waxy keratinous content of the cyst [58].

Histopathological examination revealed cyst wall lined by stratified squamous epithelium with abundant keratin in the lumen without any evidence of calcification, muscle fibers or skin adnexal structures, confirming it to be an epidermoid cyst[59].

2. Ganglioneuroma

Epidemiology and frequency

GN of the peripheral nervous system was first reported in 1870[60]. It is a very rare benign tumor that less than 20 cases have been reported in the literature [61].

It is common in young females. Median age at diagnosis is 6.5 years for GN, and 35.5 years with a range from 8 to 70 years for presacral location.[62, 63]

Pathology

This tumor is considered to be part of the neuroblastoma group together with neuroblastomas and ganglioneuroblastomas, which arise from sympathetic ganglion cells[64].

Pathologically, they are composed of ganglion cells, Schwann cells and fibrous tissue. They do not contain neuroblasts, intermediate cells, or mitotic figures and necrosis is not a feature [65].

Some authors described malignant transformation of this tumor, spontaneously or after radiotherapy, and other authors reported an association with neurofibromatosis and multiple endocrine neoplasia syndrome Type IIB. [65, 66]

GN can be found anywhere along the peripheral autonomic ganglion sites. The posterior paraspinal mediastinum is one of the most common locations (41.5%). Its occurrence in the retroperitoneum (37.5%), adrenal glands (21%), and neck (8%) is also relatively frequent. presacral location is extremely rare[62].

Clinical presentation

Because of its slow growing, ganglioneuroma is often asymptomatic, endocrinologically inactive and discovered incidentally, until it reaches a large size when it compresses and displaces neighboring structures.

Several patients may present nonspecific symptoms (constipation, pain, neurogenic bladder) attributed to local mass effects on neighboring structures such as rectum, sacral root and lumbosacral plexus. Additionally, patients with GN can have increased levels of catecholamines in blood or urine, caused by hormonally active tumors, with symptoms as hypertension or flushing [66, 67].

Imaging

On the diagnostic assessment, CT and especially magnetic resonance represent the best non-invasive imaging methods for the preoperative study of this type of lesion which generally has an average diameter of 7cm.

On CT, GN is typically **solid, well-circumscribed**, and **encapsulated** lesion that is iso to hypoattenuating to muscle. **Calcifications** have been found in approximately 42–60% of cases. Although it tends to be relatively **homogeneous** [65].

On MRI: Ganglioneuroma may appear encapsulated, although a true capsule is not usual. Reported signal characteristics include [65, 68]:

- T1: tends to have homogeneously low or intermediate signal
- T2: tends to have heterogeneously intermediate or high signal
- T1 C+ : variable ranging from none to heterogeneous enhancement
- ADC: ADC values tend to be higher than that of a neuroblastoma

Based on imaging characteristics, GN usually cannot be differentiated from ganglioneuroblastoma and neuroblastoma.

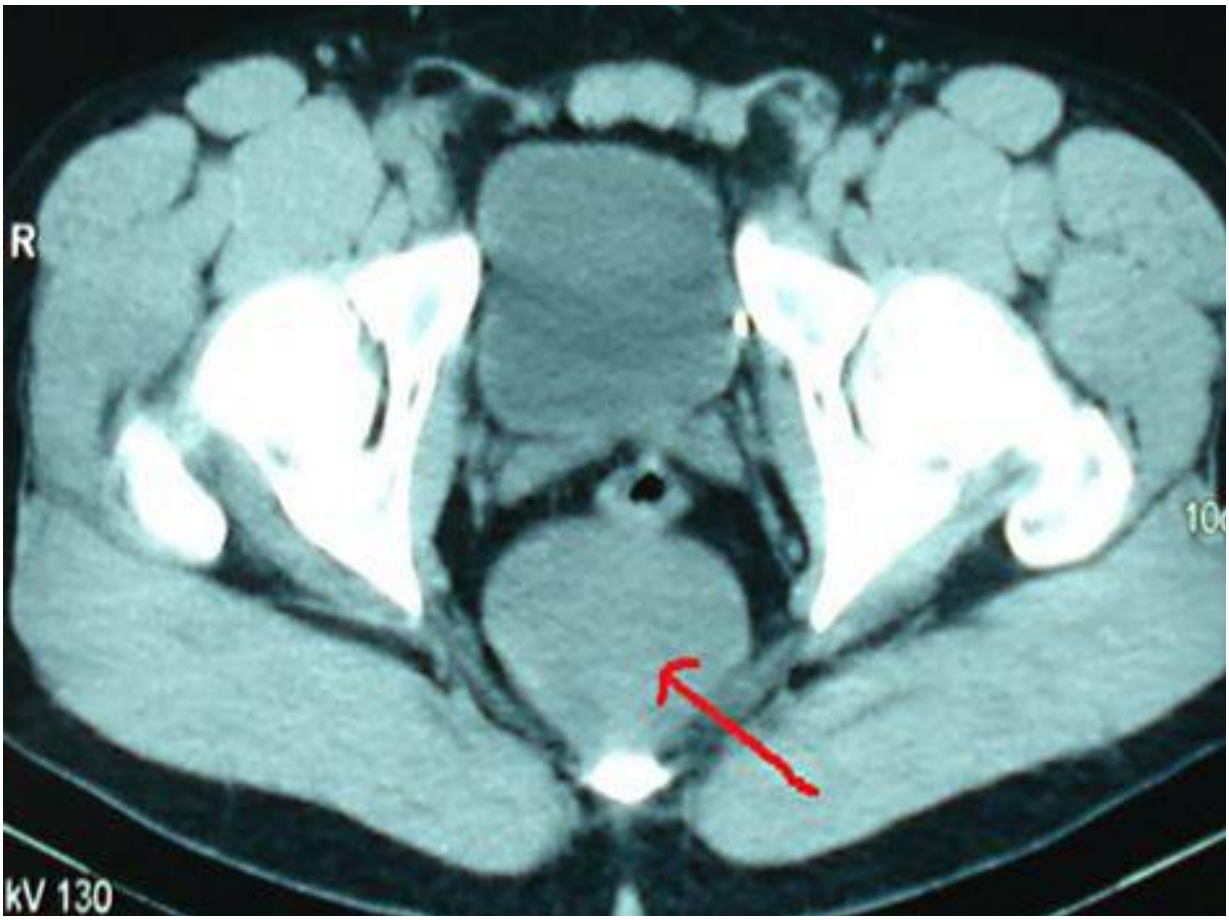

Figure 21 : Axial CT image of the lower pelvis. A well-circumscribed solid tumor is seen in the presacral region, with no signs of infiltration, in contact with the posterior wall of the rectum (arrow) [61]**.**

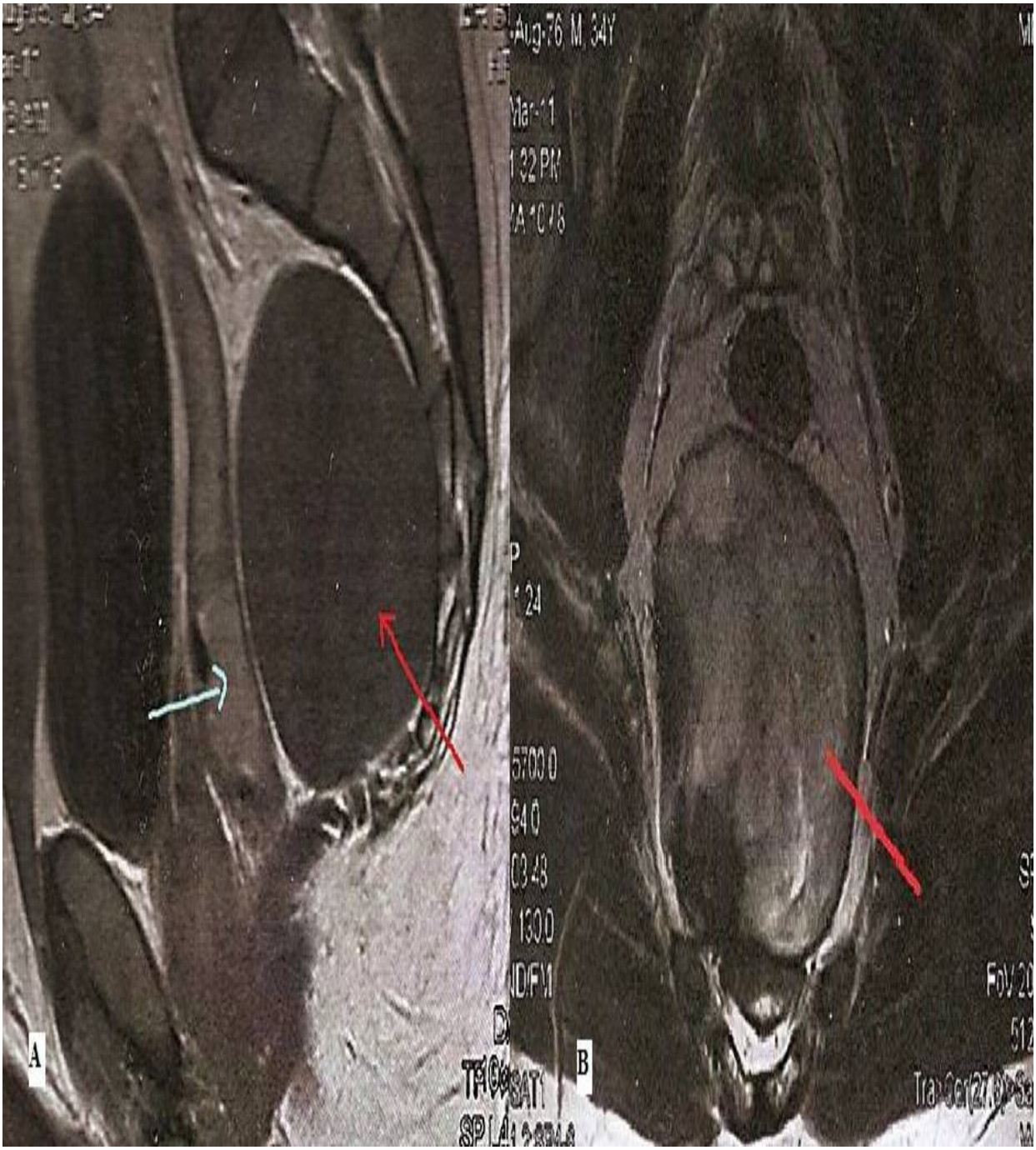

Figure 22 : and axial T2-weighted (B). MRI images showing a presacral tumor with low signal intensity on sagittal T1-weighted image (A) (red arrow) and inhomogeneous solid tumor with cystic components on axial T2 image [61]**.**

In our patient, the ganglioneuroma was asymptomatic and incidentally discovered on a thoraco-abdomino-pelvic CT scan. Its radiological aspect was the same as it is described in the literature.

Histological study of the tumor permit to establish the structural and morphological features of ganglioneuromas, such as the presence of mature sympathetic ganglion cells,and may help distinguishing them in the differential diagnosis with other pelvic or abdominal lesions.

3. Hemangiopericytoma

Epidemiology

Hemangiopericytoma is a scarce mesenchymal neoplasm that was described for the first time by Stout and Murray in 19423 as one of the first peripheral tumors in soft tissue[69, 70].

Frequency and topography

Hemangiopericytoma can develop in any part of the body by reason of its vascular origin, but usually occurs in soft tissue, especially in the retroperitoneum, pelvis, pleura, lungs and lower extremities in adults [71, 72].

A primary hemangiopericytoma (HP) of bone is rare, accounting for less than 1% of vascular tumors, 11% of malignant vascular bone tumors and 0.1% of malignant primary bone tumors[73].

Age and sex

Hemangiopericytomas are more frequent in patients with ages ranged from 12 to 90 years, principally in the fourth and fifth decade, with a male-to-female ratio of 1.8[74].

Clinical presentation

Clinical presentation of HP is non-specific. The most usual symptoms at presentation are pain and mass-related symptoms.

Sacral S1–S2 neural invasion can lead to radiating pain and abnormal sensations. The low growth potential of HP explained the long past history of lower back pain [75].

Rectal examination is the most crucial, most useful, and least expensive means to identify retrorectal masses [1, 76]. Colonoscopy permits to exclude any rectal mucosal modifications in cases of rectal bleeding [77].

In our patient, common symptoms were low back pain radiating to the right lower extremity for two years, associated to paresthesia and muscular atrophy over the homolateral leg, making walking difficult. A physical examination discovered abnormal S1–S2 dermatome sensation. A digital rectal examination revealed a retrorectal mass.

Imaging

✓ Endorectal ultrasound (ERUS) is more useful than trans parietal ultrasound, it allows characterizing the lesion as cystic or solid and it occasionally shows internal echoes attributed to mucoid or inflammatory debris [77].

It can show tumor extension to the retrorectal space and allows studying the relationship of the tumor bud to neighboring organs, in particular with the rectal wall.

Computed tomography (CT) and magnetic resonance imaging (MRI) are the most accurate diagnostic tools.

✓ CT, before and after injection of the contrast product, specifies the topography and tissue characterization much better. Hemangiopericytoma is a tumor of a vascular nature as evidenced by the large and rapid uptake of the contrast agent. This character does not stand out very well in our observation.

In the vast majority of cases, CT scan shows **osteolytic images**. Some tumors remain relatively well circumscribed surrounded by an osteocondensation border; others may show expansion of the bone, with **a bullous or "honeycomb" appearance**. Sometimes the lesion is more aggressive with cortical destruction and extension into the soft tissues, which is the case in our patient. A periosteal reaction or intratumoral calcifications are sometimes visible, as well as cystic or necrotic areas.

✓ On MRI, hemangiopericytoma **typically shows intermediate signal intensity on T1-weighted images and hyperintense serpentine channels on gadolinium enhanced images**[74, 78, 79].

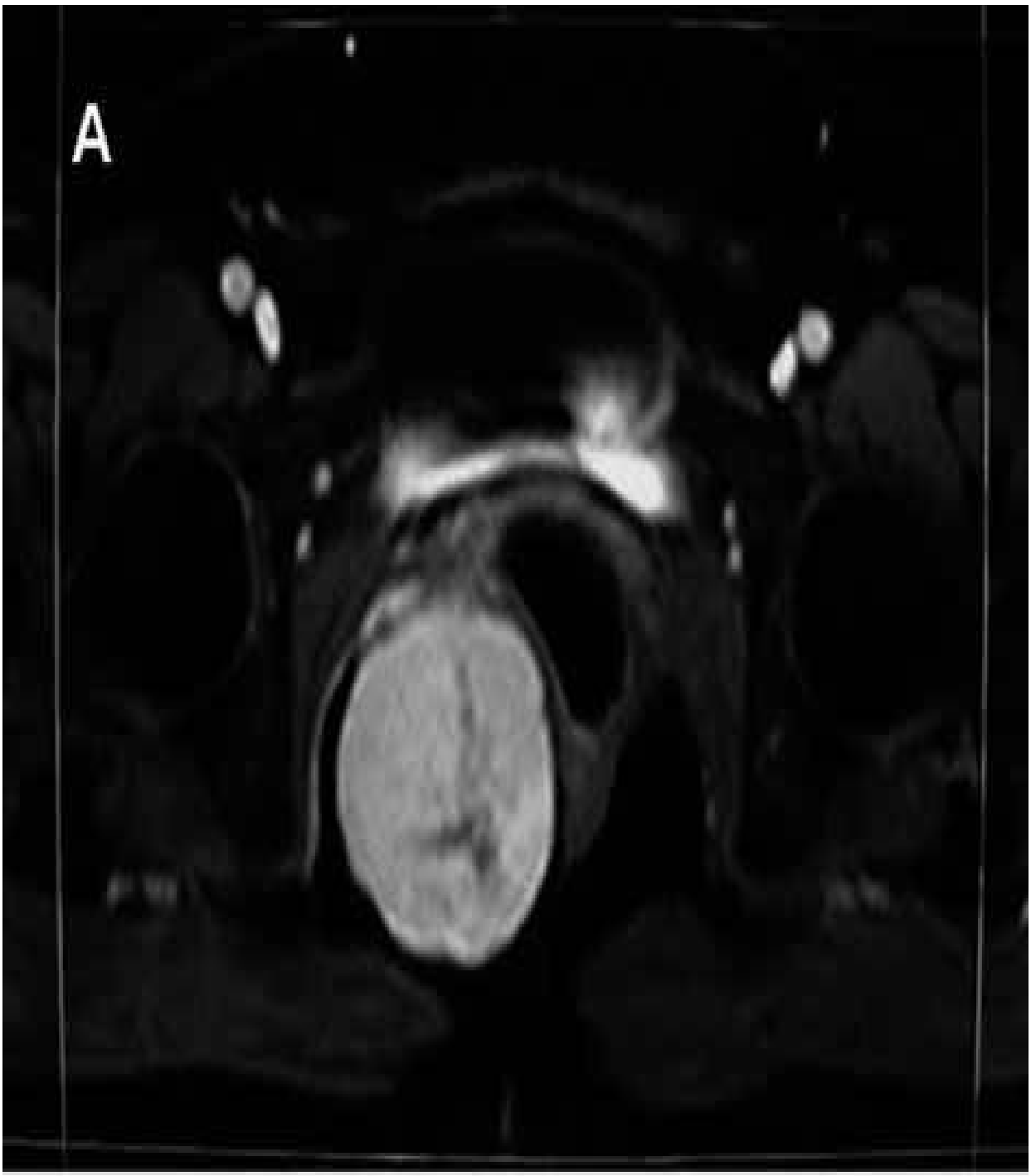

Figure 23 : MRI demonstrated MRI demonstrated a well-marginated radiopaque solid mass in the retrorectal space [79]**.**

A hemangiopericytoma in this location should be differentiated from a chordoma, chondrosarcoma and giant cell tumor.

Histologically,

HP cells typically cluster around numerous capillaries and usually contain round-to-oval nuclei, a feature generally lacking in anaplasia[74]. An anaplastic hemangiopericytoma is characterized by the presence of necrosis and/or more than five mitoses per ten microscopic fields and at least two of the following microscopic features: haemorrhage, moderate- to-high nuclear atypia, and moderate-to-high cellularity[80]. In the current case, the tumor exhibited high cellularity and numerous capillaries. There was no necrosis, hemorrhage, or nuclear atypia in the tumor.

Hemangiopericytomas are a slow growing, but malignant tumor with a capacity for local invasion and spread through the bloodstream. Some authors have reported an overall 20%–50% rate of local recurrence with surgery alone, and therefore recurrence is correlated with malignancy [81, 82]. In fact, the differentiation of the tumor cells, increased cellularity, high mitotic activity, and foci of necrosis or hemorrhaging determine the degree of malignancy [83]. Immunohistochemistry (CD34) is helpful in the differentiation from other typical malignancies, such as metastatic carcinoma or other primary bone tumors [84]. However, the histological diagnosis may be very difficult to make in a biopsy specimen before surgery.

4. Fibromatosis

Epidemiology and location

Fibromatosis are rare tumors that develop in the muscular aponeurotic structures. They are low-grade soft tissue tumors, always benign with no potential for malignant transformation or distant dissemination, but with significant local aggressiveness and an unpredictable course after treatment. They represent 3.5% of fibrous tumors, less than 0.1% of soft tissue tumors and 0.03% of all neoplasms[85, 86].

These tumors are located in the abdominal wall, in the abdomen, or extra-abdominal, the pelvic location is exceptional, it often affects young women aged 18 to 35 years. Although most cases are sporadic, trauma, hormonal factors and genetic factors are the main aetiological factors found [87, 88].

Our patient did not report any notion of trauma, and a posterior colonoscopy did not reveal colonic polyposis; the latter increases the risk of fibromatosis by 852 compared to the general population.

Clinical presentation

Clinically, this tumor presents as a poorly limited, slow growing mass and usually painless. Our patient had previously been asymptomatic, and it was only after the first intercourse that she developed excruciating dyspareunia making penetration impossible. Sometimes this tumor can cause difficulty in mobility or signs of neurological compression.

Colonoscopy and high end fibroscopy are useful in finding colonic, gastric or duodenal polyposis.

Imaging

The radiologic aspect of fibromatosis is depending to the relative amounts of fibroblast proliferation, fibrosis, collagen content, and the tumor vascularity.

On US, fibromatosis has a variable echogenicity with a smooth, well-defined margin.

On contrast-enhanced CT scans, this tumor generally has high attenuation (relative to muscle) and has either an ill- or well-defined margin.

On MRI, it has low or iso-SI relative to muscle on T1W images and variable SI on T2W images. This radiological exam makes it possible to clearly define the relationship of the tumor to the vessels and to make the differential diagnosis with fibrosarcoma fibrosarcoma (poorly differentiated sarcomas are more vascularized). [89-91]

In our patient, the tumor had well defined margin, progressive enhancement and it respected neighbouring structures, which demonstrate its benignity.

Anatomopathology

The preoperative histological study remains controversial, as the surgical biopsy would stimulate tumor growth [89]. But in the event of an unresectable tumor, histological proof is necessary to better consider the therapeutic approach.

In our patient the tumor was found to be resectable on MRI, we did not consider it necessary to do a preoperative biopsy.

5. Liposarcoma

Epidemiology

Liposarcoma is the most common soft tissue sarcoma, it may arise in any region of the body that contains fat and represents at least 20% of all sarcomas in adults. It is typically found in adults, between the ages of 40 and 60, and is rare in children [95].

Clinical presentation

It is habitually asymptomatic, but may cause a vague discomfort when retrorectal.

Location

Retrorectal liposarcomas represent rare localizations compared to others such as the lower extremities 75% and the retroperitoneum.

Imaging

CT

Liposarcomas have three CT patterns based on the amount and distribution of fat in the tumor:

Solid with attenuation over 20 HU, mixed with areas of less than 20 HU and areas of over 20 HU, and pseudocystic with homogeneous density between –20 and +20 HU

CT findings favoring a liposarcoma over a lipoma include[96]:

- inhomogeneous enhancement, with evidence of significant parts of soft-tissue within the fatty mass

- Poor definition of adjacent structures
- Evidence of infiltration or invasion of adjacent structures
- Calcifications

MRI

MRI appearance, as with CT, varies depending on the grade and amount of fatty tissue.

Low-grade lesions (atypical lipomas) are almost entirely fat signal with however thick septa, enhancement or evidence of local invasion. These features are used to distinguish these from simple lipomas[97].

The higher grade lesions are often devoid of macroscopic fat and have appearances similar to other sarcomas.

In our patient, the aspect was demonstrating a high grade lesion without evidence of local invasion.

Pathology

Thought to originate from mesenchymal cells, they are classified histologically into five types 1:

- well differentiated liposarcoma,
- myxoid liposarcoma / round cell
- dedifferentiated liposarcoma
- pleomorphic liposarcoma
- mixed liposarcoma

MANAGEMENT

In the retrorectal space, the majority of masses will undergo surgical resection if the patient is able owing to the fact that benign lesions are prone to malignant transformation, and thatspace is prone to contamination, which may lead to further complications like inflammatory fistulae.

Some patients with malignant lesions may undergo postoperative chemoradiation. Preoperative neoadjuvant therapy can be curative in some tumors or decreasing the size of some large pelvic masses, which facilitates their resection.

There are three major operative approaches that have been described for managing presacral masses, including anterior, posterior and combined. The choice of approach for a given lesion depends on its boundaries, relationship to and involvement of adjacent structures.

The anterior or abdominal approach is habitually performed if the tumor is completely contained at or above the S3 vertebral level with no sacral invasion. This permits appropriate visualization of the key anatomy (vascular and urinary) by mobilization of neighbouring organs.

The posterior approach is used for tumors below S3 (defined as S4 and below) without visceral, pelvic, or side wall involvement. Coccygectomy is almost always performed, and sacrectomy of variable extent is performed as well. Posterior approach allows for better preservation of neurological structures. However, it increases the risk of haemorrhage, due to decreased ability to control inadvertent vascular injury because of the poor visualization of vascular structures.

Combined abdominoperineal approach is indicated for masses extending cranio caudally above and below S3 or masses with sacral, vascular, pelvic sidewall, ureteral or rectal invasion. There covery and operating times are increased in these cases.

Follow-up is essential after surgical resection of both benign and malignant retrorectal lesions. Dozois et al. suggest that patients with benign lesions have a baseline MRI 1-year following surgery and every5 years thereafter. Those patients with malignant tumors should have annual pelvic MRI and chest CT scan in the first five postoperative years.

Recurrent tumors exhibit the same signal intensity as the primary tumors; and post contrast enhancement distinguishes them from seromas (a common postoperative finding), which do not enhance or present only rim enhancement.

CONCLUSION

Retrorectal tumors are very rare, but the presence of myriad embryologically distinct types of tissues in this space accounts for the diverse lesions seen on imaging studies.

Patients are usually asymptomatic or present with ambiguous symptoms, which may be source of delayed diagnosis with enlargement or malignant transformation of some masses.

The imaging elements that serve in the differential diagnosis of presacral tumors are cystic versus solid masses, nature of the cyst, fatty content, bone and neural foraminal destruction or erosion, tumor enhancement and its invasion of the adjacent structures.

While some masses have specific imaging appearances, it is more crucial for the radiologist to determine and report key findings which may obviate the need for routine preoperative biopsy and help in selecting management decisions (the appropriate surgical approach with reduced complications, aid in planning preoperative chemoradiation therapy if required, and facilitate early detection of recurrence on surveillance examinations), than speculate on histology.

In this study, we have highlighted the imaging features and analytical imaging approach, which had led us to the accurate diagnosis.

ABSTRACT

Abstract

Title: Retrorectal and presacral tumors in adults: Multimodality imaging for multidisciplinary space

Author: ALLIOUI Soukaina

Key words: Retrorectal space ; Imaging ; Tumors

Introduction:

Primary tumors in the presacral space are exceedingly rare in adults, with an estimated incidence of 0.0025 to 0.014. Congenital varieties are most frequent and comprise two thirds of these tumors. Imaging and specially magnetic resonance imaging (MRI) plays an important role in directing appropriate management through right diagnosis, anatomic extent and detection of complications. In this retrospective study, we aimed through five cases collected in the radiology department of the military hospital, to illustrate the imaging aspect of retrorectal tumors in our series and compare it with the literature data.

Materials and methods:

This is a retrospective study, including five cases of retrorectal tumors which were diagnosed on the basis of imaging and clinical findings and which were resecable.

Results:

After diagnosis, our five patients showed epidermoid cyst, liposarcoma, hemangiosarcoma, ganglioneuroma and fibromatosis, respectively, with a percentage of 16% of each case.

Conclusion:

Retrorectal tumors are very rare pathologies with varied clinical and morphological presentations. The radiologist plays a primordial role in the process of etiological diagnosis. Precise and early diagnosis allows appropriate and sometimes curative care.

Résumé

Titre : Tumeurs rétrorectales de l'adulte : Imagerie multimodale pour un espace pluridisciplinaire

Auteur : ALLIOUI Soukaina

Mots clés : L'espace rétrorectal, Imagerie, Tumeurs

Introduction :

Les tumeurs primitives de l'espace présacré sont extrêmement rares chez l'adulte, avec une incidence estimée à 0,0025 à 0,014. Les tumeurs congénitales sont les plus fréquentes et représentent les deux tiers de ces tumeurs. L'imagerie et en particulier l'imagerie par résonance magnétique (IRM) joue un rôle important dans l'orientation d'une prise en charge appropriée grâce à un diagnostic correct. Elle précise l'étendue anatomique et la détection des complications. Le but de ce travail est d'illustrer l'aspect radiologique des tumeurs retro rectales, à travers une série de cas colligés au sein du service de radiologie de l'hôpital militaire de Rabat, avec revue de la littérature.

Matériel et méthodes :

Il s'agit d'une étude rétrospective incluant cinq patients diagnostiqués de tumeurs rétrorectales par l'imagerie et l'étude anatomopathologique.

Résultats :

Après diagnostic, nos cinq patients présentaient respectivement un kyste épidermoïde, un liposarcome, un hémangiosarcome, un ganglioneurome et une fibromatose, avec un pourcentage de 16% de chaque cas.

Conclusion :

Les tumeurs retro rectales représentent une entité très rare avec des présentations cliniques et morphologiques très variées. Le radiologue joue un rôle primordial dans le processus de diagnostic étiologique. Un diagnostic précis et précoce permet une prise en charge adaptée et parfois curative.

ملخص

العنوان: أورام خلف المستقيم عند البالغين : أشعة متعددة الوسائل لوسط متعدد التخصصات

المؤلفة: عليوي سكينة

الكلمات الأساسية: مساحة خلف المستقيم؛ الأشعة؛ الأورام

مقدمة:

الأورام الأولية في الفضاء قبل العجزي نادرة للغاية عند البالغين، حيث يقدر معدل حدوثها من 0.0025 إلى 0.014. الأنواع الخلقية هي الأكثر شيوعًا وتشكل ثلثي هذه الأورام.تلعب الأشعة وخاصة التصوير بالرنين المغناطيسي دورًا مهمًا في توجيه الإدارة المناسبة من خلال التشخيص الصحيح والمدى التشريحي واكتشاف المضاعفات.

المواد والأساليب:

هذه دراسة بأثر رجعي ، تخص خمس حالات من أورام الفضاء قبل العجزي التي تم تشخيصها على أساس الأشعة والنتائج السريرية والتي كانت قابلة للعلاج بالجراحة.

نتائج:

بعد التشخيص ، أظهر مرضانا الخمسة تكيسًا بشريًا وساركومة شحمية وساركومة وعائية وورمًا عصبيًا ورمًا ليفيًا على التوالي بنسبة 16٪ من كل حالة.

استنتاج:

في هذه الدراسة، سلطنا الضوء على ميزات التصوير ونهج التصوير التحليلي، مما قادنا إلى التشخيص الصحيح.

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