

# Extensive parietal endometriosis : A challenge for diagnosis and surgery

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# INTRODUCTION

- Abdominal wall endometriosis (AWE) is the most common form of extrapelvic endometriosis.
- The increasing number of caesarean sections and gynaecological surgeries will expect to increase the rate of AWE.
- The pathogenic mechanism involves local environment at the implant site including local inflammation and metalloproteinases activation due to local growth factors, estrogen stimulation through estrogen receptors and potential epigenetic changes.
- The clinical presentation is heterogeneous; the patient may be seen by a gynaecologist, a general surgeon, an imaging specialist, or even an oncologist.
- The most common clinical triad including : Mass in the abdominal wall or nodule at the previous scar or Cyclic pain related to the menses and a History of a previous abdominal surgery
- Diagnosis's tools based on clinical examination, ultrasound and magnetic resonance imaging .
- Wide surgical excision remains the standard curative therapy of AWE.
- The treatment of extensive abdominal wall endometriosis remains challenging surgery .

# CLINICAL DIAGNOSIS

- Local pain at the caesarean scar/incision site of the abdominal wall during menstruation .
- Chronic pain that is unrelated to the menstrual cycle
- Skin changes; ecchymosis at the level of the abdominal wall during menstruation or hyperpigmentation of a scar
- A lump may be palpable at the abdominal wall, including on the post-operative scar
- The clinical triangle includes cyclical pain, a lump at or near the level of the scar/abdominal wall and a history of caesarean section or similar gynaecological procedures .

# PREOPERATIVE INVESTIGATIONS

- The most useful assessment tools are ultrasound, computed tomography and magnetic resonance imaging .
- Ultrasound imaging of the abdomen is the first imaging modality in the preoperative work-up for AWE , determine the extension of the endometriotic implants ; as an isoechoic or hyperechoic pattern , with peripheral vascularization.
- Computed Tomography provides better results in cases with muscle and subcutaneous layer involvement.
- MRI is better used in cases with small lesions , for pelvic endometriosis staging , adenomyosis and for Differential diagnoses.

# DIFFERENTIAL DIAGNOSIS

- Sarcomas
- Metastatic malignant tumors
- Granulomas
- Abscess
- Sediment
- Incisional hernia
- Hematoma
- Desmoid fibromatosis
- Lipoma
- Lymphoma

# SURGICAL MANAGEMENT OF *EXTENSIVE ENDOMETRIAL ABDOMINAL WALL*

- Total surgical resection is the gold standard
- Surgical margin of at least 1 cm
- Radical surgery requires extensive resection of a fascia and fragments of the rectus abdominis muscle
- A polypropylene mesh was implemented which is generally standard procedure to restore abdominal wall integrity and prevent postoperative hernia formation.

- According to recent consensus of nomenclature for defining the planes for the anterior abdominal wall mesh reconstruction, there are generally 5 different anatomical compartments for mesh placement:

*subcutaneous*

*interposition*

*retro-rectus*

*preperitoneal*

*intra-abdominal*

- The application of synthetic mesh may cause an increased risk of complicated wound infections, synthetic mesh infections and erosions

- The basic abdominoplasty techniques and use of skin/musculocutaneous flaps transposition are needed .
- Minimize the wound closure tensions by optimal flap design, extensive undermining and suturing technique.
- Planning abdominal wall reconstruction need techniques mastery's of :
  - Rectus abdominis muscle flap ,
  - Anterolateral thigh musculocutaneous flap or
  - Partial abdominoplasty.



- The extensive skin flap dissection may be associated with higher local complication rate,
  - Haematoma
  - Seroma
  - Wound dehiscence and infection

***A CASE SERIES ABOUT EXTENSIVE  
ABDOMINAL WALL ENDOMETRIOSIS  
NINE CASES***

# MATERIALS AND METHODS

- This retrospective case series study was conducted on the patients with histopathological diagnosis of extensive abdominal wall endometriosis.
- We analyzed 9 patients at referral centers from Marrakech between January 2012 and December 2022 operated by the same surgeon.
- We analyzed the patients' medical records including all clinical characteristics such as age, number of gravida and parity, presence of comorbidity, and operation history . We also recorded the location, the size, the number of localization site , and the surgical techniques of extensive abdominal wall endometriosis .

# RESULTS

- A total of 9 patients diagnosed with extensive abdominal wall endometriosis were included in this study.
- The mean age of the patients were 38.6 years ; 25-46 years
- the mean of parity were 1,2 ; 1 to 3 parity number.
- Surgical history :
  - Caesarean section : 8 patients ( 88,88 )
  - Pfannenstiel section for myomas . ( 11,11 )
- The recurrence of abdominal wall endometriosis : two cases
- The main symptom was the pain getting worse during menstruation and the presence of a mass in all patients.
- The pain visual analogue scale was more than 7 in all the patients
- Medical treatment received before surgery :
  - Progestins : 7 patients ( 77,77 )
  - Oral contraceptive pills : 8 patients ( 88,88 )
  - LH-RH Analogues : 3 patients ( 33,33 )
- The interval time between surgical intervention and the consultation of the patient with abdominal wall endometriosis was between 2 and 6 years

# RESULTS

- The main diagnostic tools in all patients were detailed history and physical examination .
- **Ultrasonography** : Showing a solid mass between 3 -10 cm in all cases :
  - one localization : 3 patients
  - two localizations : 3 Patients
  - more than 3 localizations : 3 patients
- **Computed Tomography** : had been done for 2 patients .
- **MRI** : done for 4 patients ,
  - Showing more informations about the extension of abdominal wall endometriosis ,and association with pelvic endometriosis and or adenomyosis
  - Showing the association between the abdominal wall endometriosis and adenomyosis in 5 patients ( 55,55 )

# RESULTS

- After surgical exploration lesions was more wides than clinical or radiologic estimation
- During surgical exploration of the 9 patients we have found this different involvement of :
  - *Aponeurosis* : All the patients .
  - *Rectus abdominis* : 6 patients (66,66)
  - *Peritoneum* : 3 patients ( 33,33)
  - *Omentum* : one patient (11,11)
- **Surgery techniques :**
  - A wide local excision of the lesion with adequate 1cm margin of healthy tissue for all patients
  - Abdominoplasty techniques was used for 3 patients ; (33,33)
  - Polypropylene mesh was used to close the defect for 5 patients (55,55)

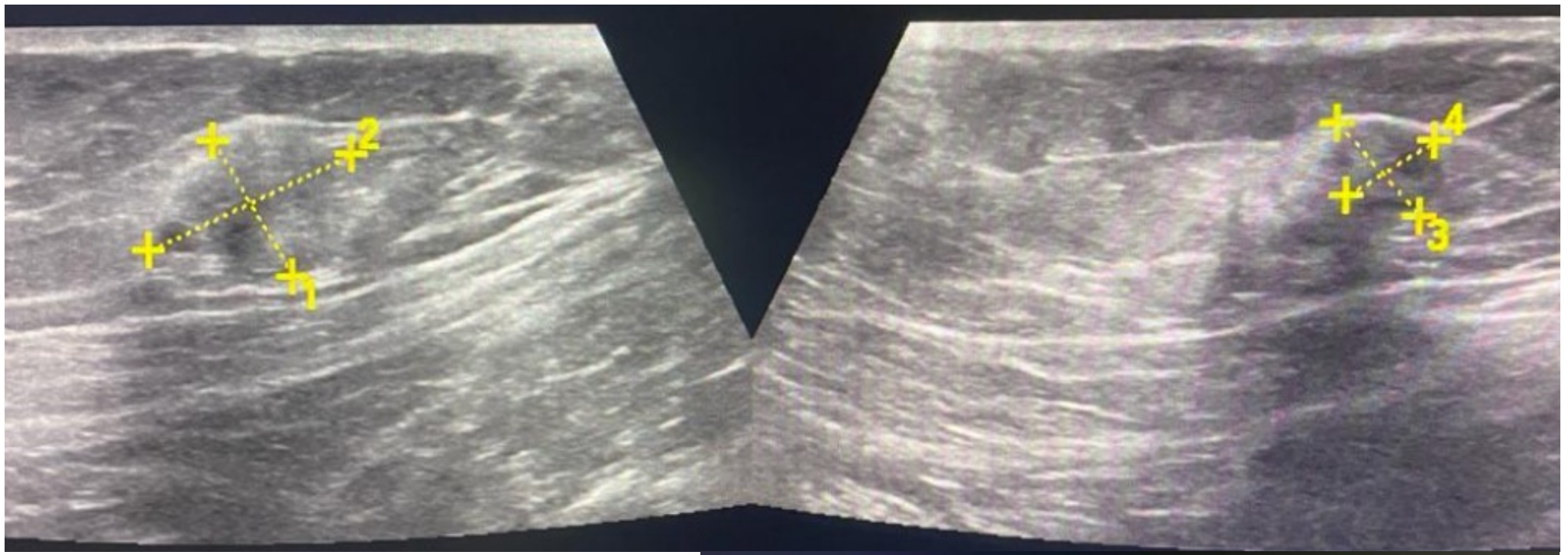
# OUTCOMES

- **The Follow-Up was 5,4 years :**
  - One patient had been reoperated after mesh used: we found a granulomatous lesion around mesh
  - Two patients have been developed a Seroma ; the evolution was uneventful .
  - No case of recurrence was registered up to now.

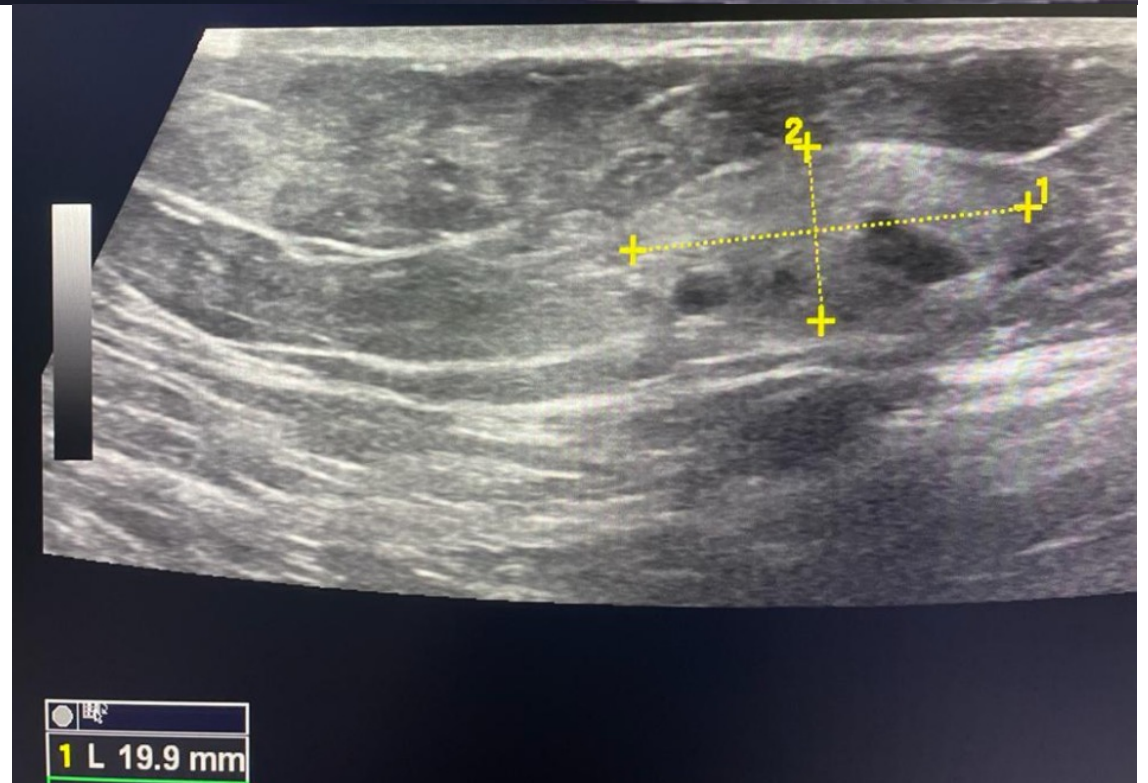
Characteristics	Number (%)
Age (years)	38.6 years
Parity	1.2
Operation history	C-section : 8 cases (88.88) Myomectomy : 1 case (11.11)
Symptoms	Pain : 9 cases ( 100 ) Mass : 9 cases (100 )
Mass Size (cm)	6.5
Endometriosis Location	Aponeurosis : 9 cases (100) Rectus abdominis muscle : 6 cases (66.66) Peritonum : 3 cases (33.33 ) Omentum : 1 case (11.11)
Mesh use	5 cases (55.55 )
Abdominoplasty techniques use	3 cases (33.3 )

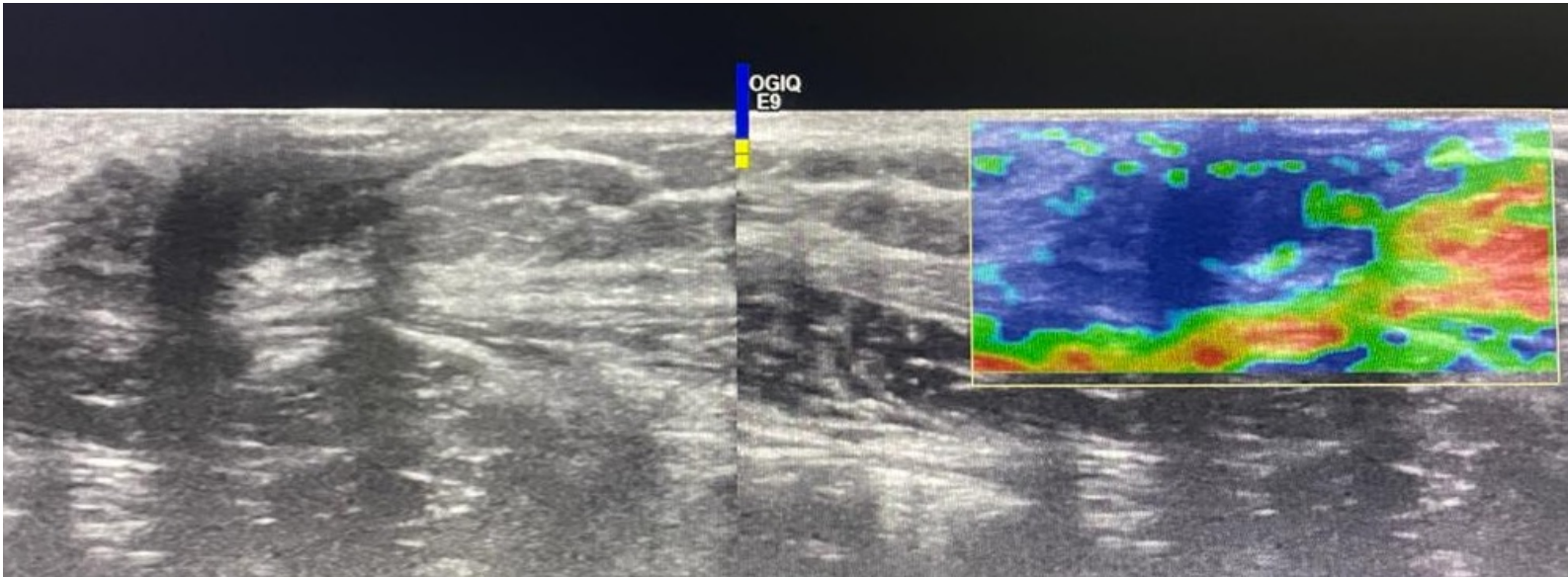
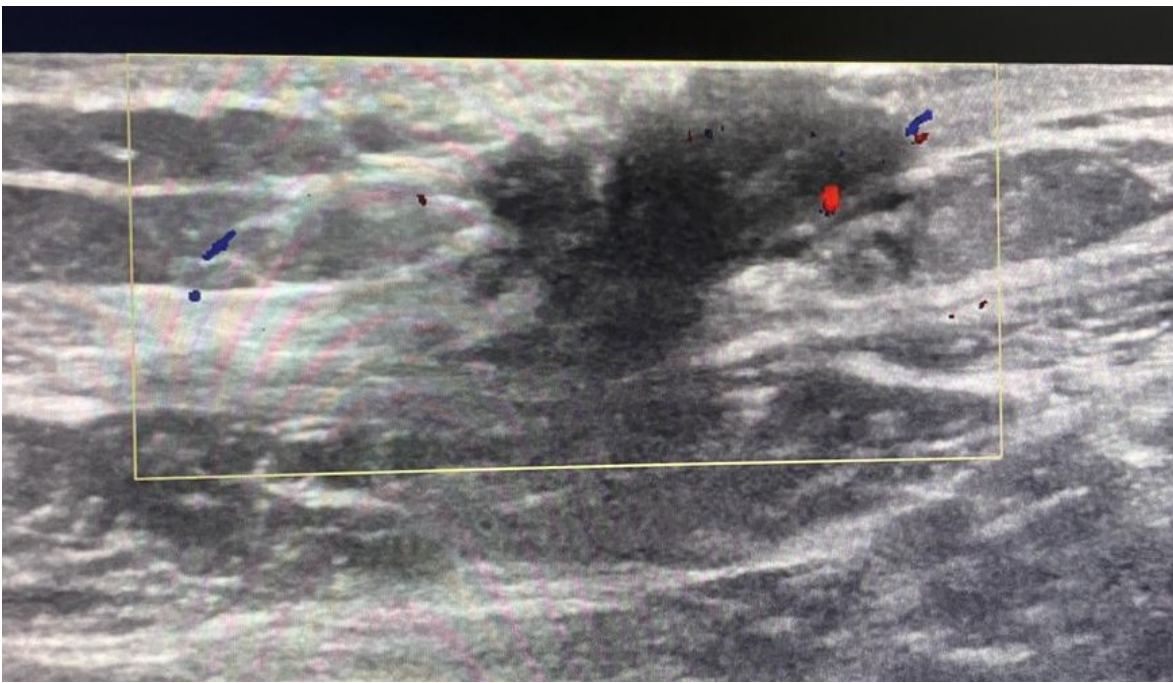
Table 1 summarize the clinical and demographic characteristics of all the patients.





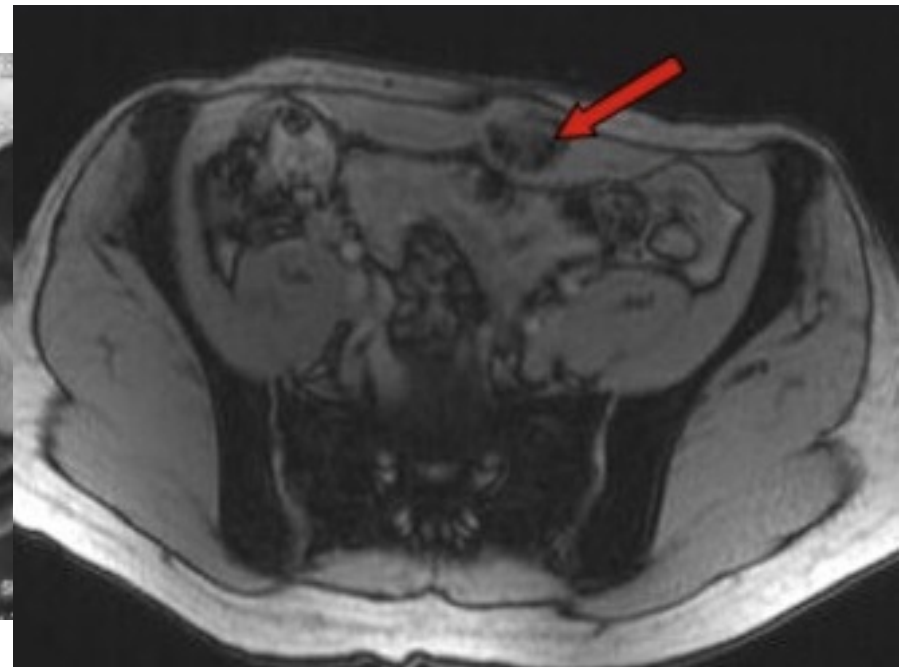
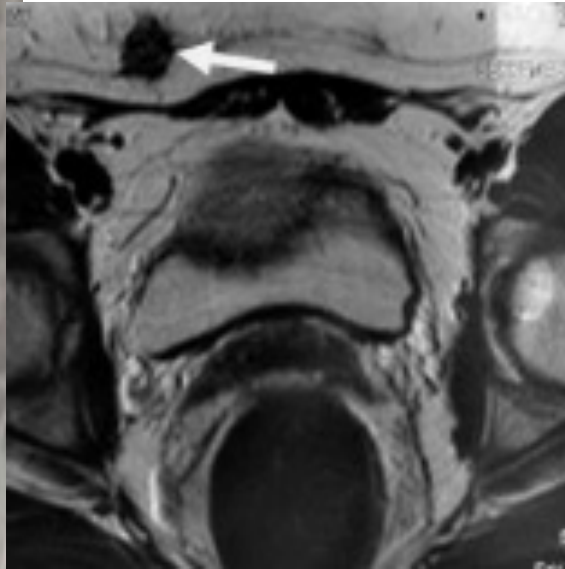
Ultrasound imaging exam  
showing a hypoechoic solid  
masses in the abdominal wall





Ultrasound imaging exam showing a hypoechoic solid mass with ill-defined margins  
Doppler shows peripheral vascularization

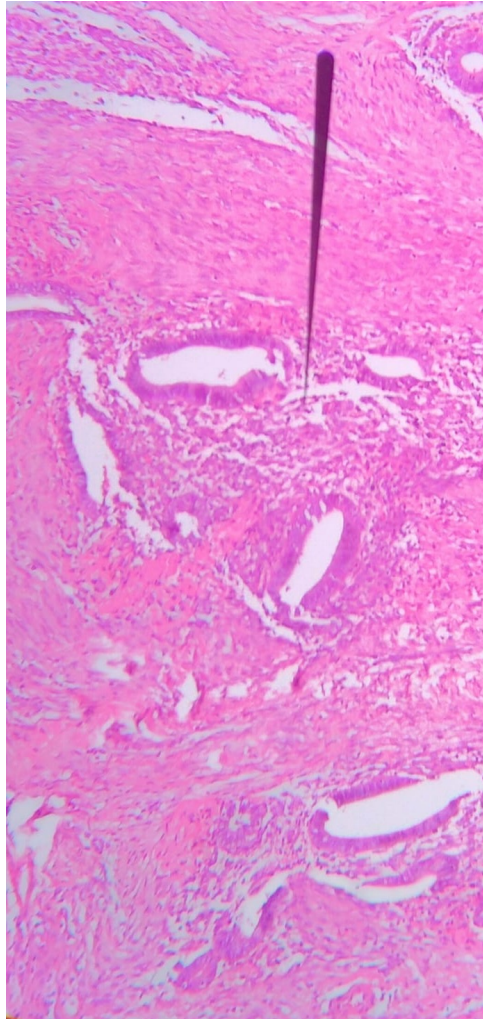




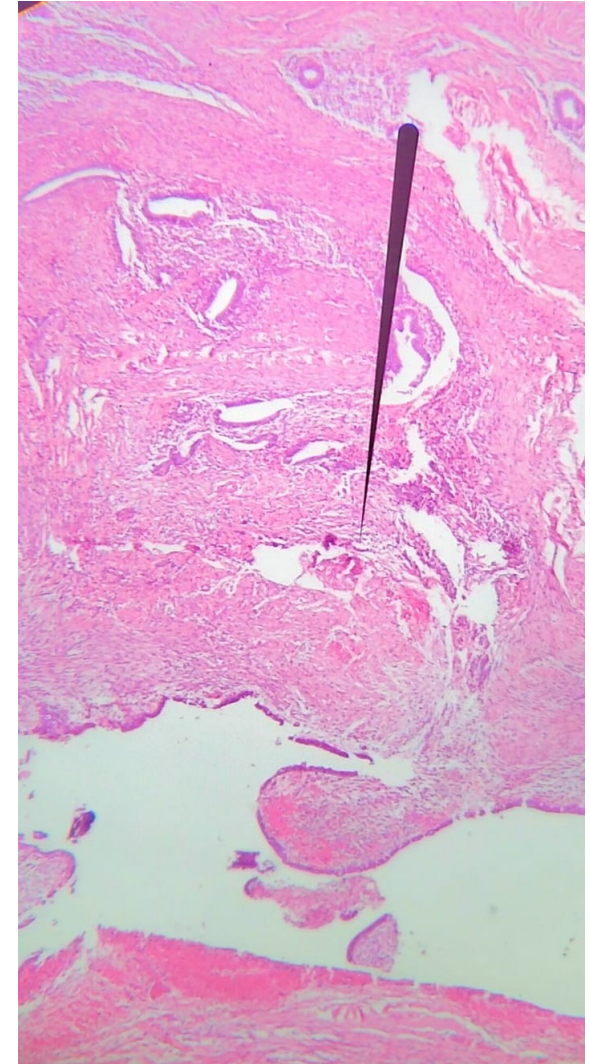
MRI shows an anterior parietal nodule in T2 hyposignal

MRI shows an anterior parietal nodule in hyposignal In Gradient echo sequences

# Histopathology

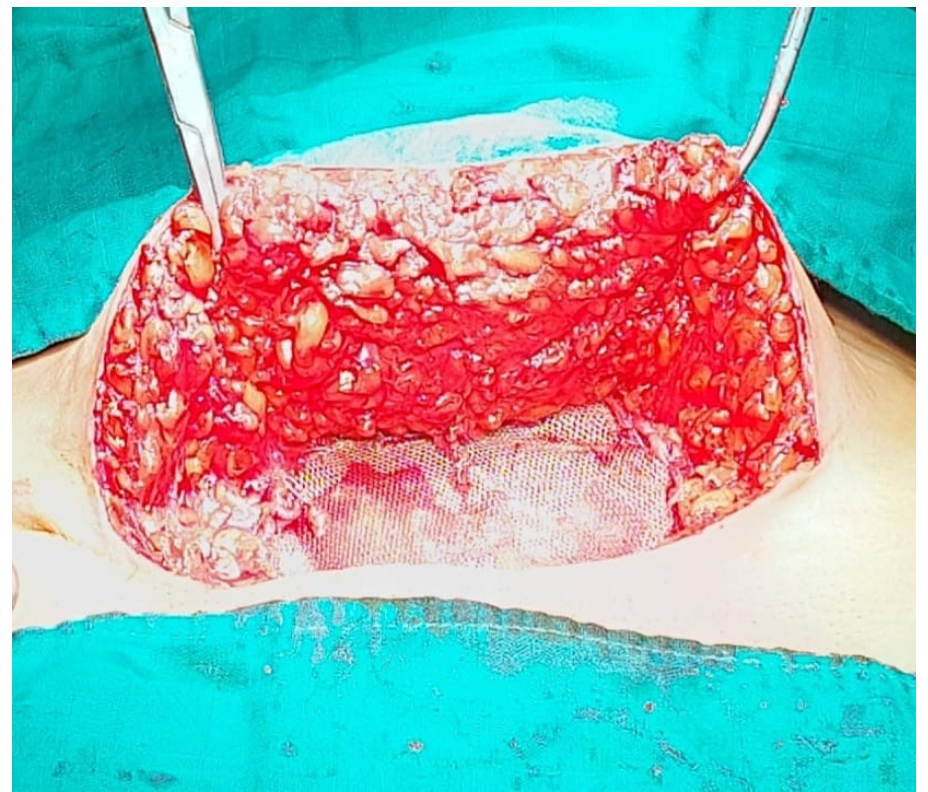
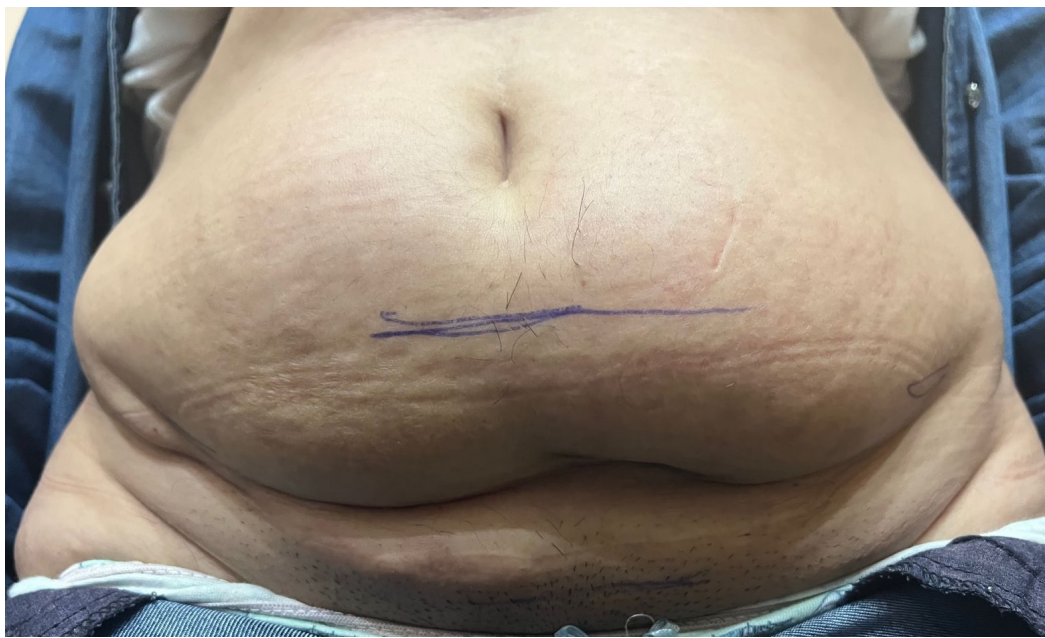


HEX100 îlots de tissu endometrial  
renfermant des glandes et un stroma  
endometrial a cellules rondes



HEX40

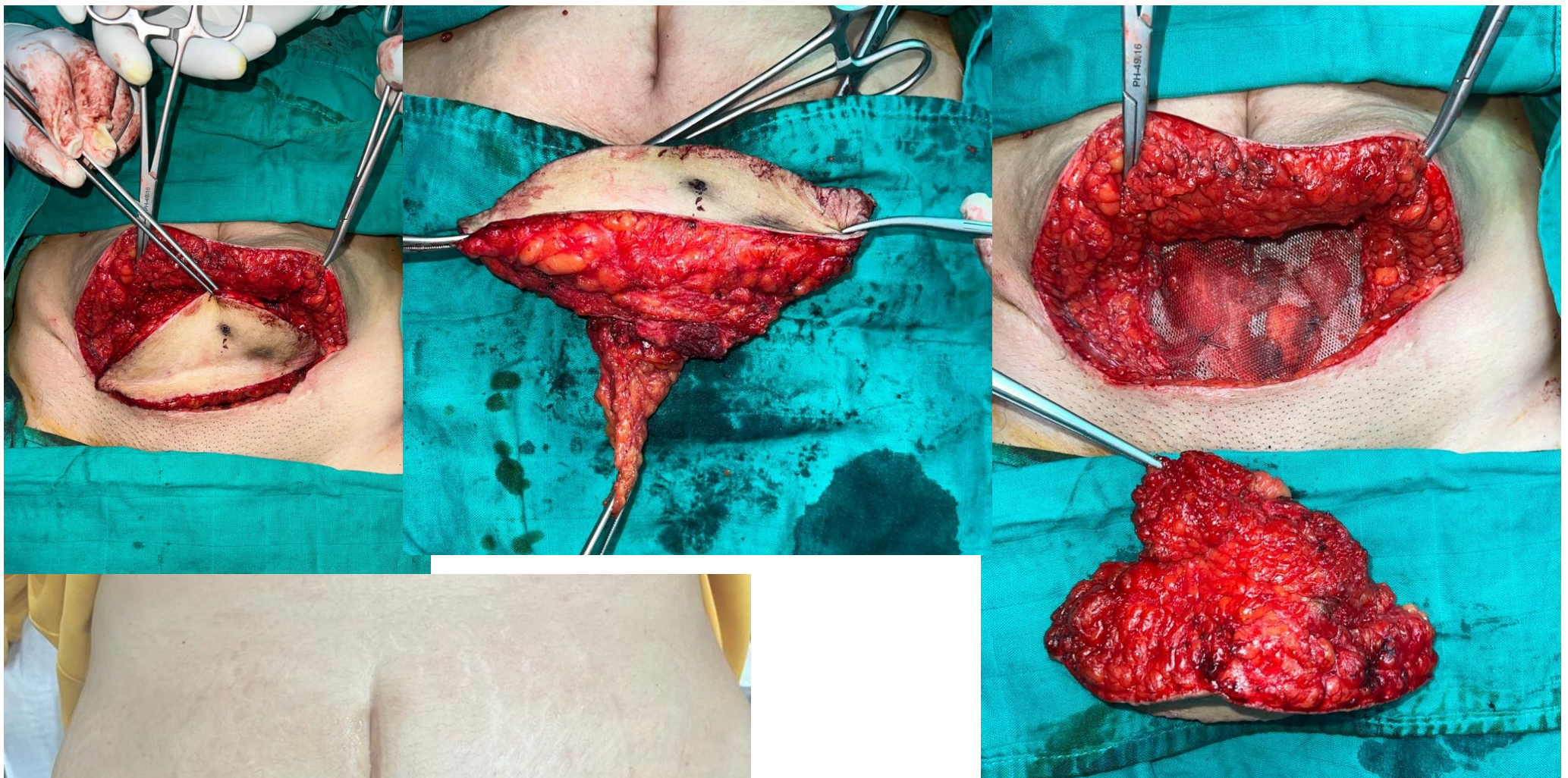




- Présence d'un épaissement nodulaire de la paroi abdominale peri-ombilicale intéressant le muscle droit, ovale mesurant **38x26mm**, infiltre le tissu cellulo-graisseux avec des attaches cutanées et exerçant un effet de masse sur le péritoine sous jacent.
- Individualisation d'un deuxième épaissement nodulaire para médian droit sus ombilical, mesurant **19x28mm**, arrivant au contact intime du muscle droit sous jacent avec perte de l'interface graisseux de séparation.
- Ces épaissements sont isodenses rehaussées après injection de PDC
- Nodules péritonéaux au niveau hypogastrique mesurant pour les deux plus volumineux, **8x10mm** à gauche et **8.6x8.3mm** à droite.







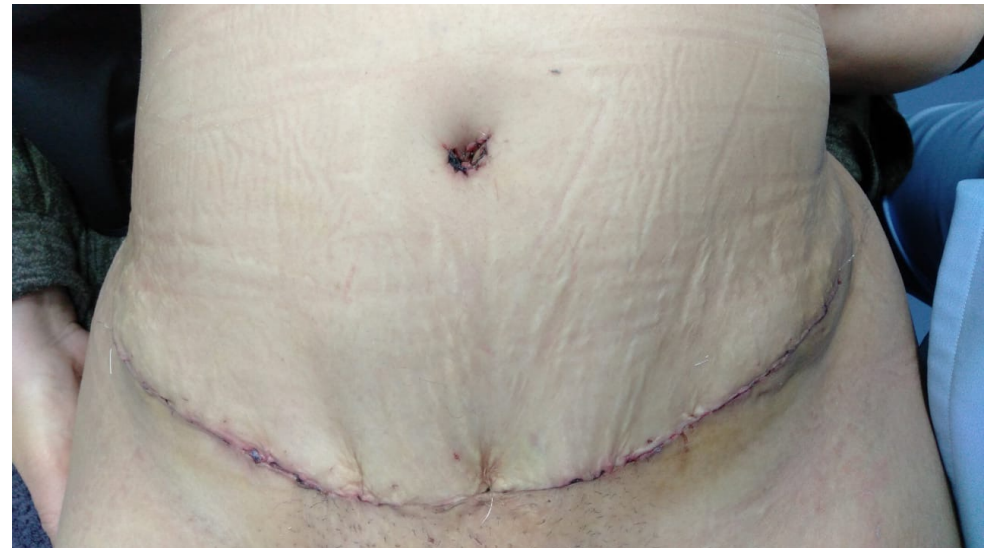
Huge parietal endometriosis affecting the aponeurosis , abdominis rectus muscle , posterior aponeurosis , peritoneum and omentum.

Abdominal wall reconstruction using polypropylene mesh .





Large AWE nodules affecting the aponeurosis , abdominis rectus muscle , posterior aponeurosis , preperitoneal fatty tissue and peritoneum.  
Abdominal wall reconstruction using abdominoplasty technique .



# CONCLUSION

- Abdominal wall endometriosis is a rare and uncommon pathologic condition, with higher risk in women with a previous history of cesarean section.
- AWE should be considered as an important differential diagnosis in women suffering from a cyclical painful nodule or mass close to or at the site of the surgical incision.
- Wide surgical excision including the surrounding fibrotic tissue should be performed and histological examination of the tumor confirms the diagnosis.
- Extensive parietal involvement requires abdominal wall reconstruction with abdominoplasty technique or mesh.