Endometriosis

Dr Hamza Al-Amoosh

JBOG, FRCOG, MSc laparoscopy, ATSM Urogynaecology

Assistant Professor Hashemite University

Endometriosis

- Definition & Introduction
- Prevalence
- Pathogenesis
- Symptoms
- Clinical Evaluation
- Management
- Conclusion

Why Endometriosis

- 10-15% women at reproductive age
- Approximately 176 million women worldwide living with endo
- 20-50% women with subfertility
- 15-80% women with pelvic pain
- 20% asymptomatic
- 20-35% suffer from DIE

Definition

- Endometrial tissue outside the uterine cavity.
- Chronic disease.
- Uncertain aetiology
- Affects predominantly women in reproductive age.

Endometriosis

- Most commonly on the uterosacral ligaments and ovaries.
- Ovarian endometriosis can lead to accumulated altered blood, causing an endometrioma or “chocolate cyst”.
- Occasionally, endometriosis affects the vagina, umbilicus,, abdominal wound scars, bladder, rectum and even the lungs.
- It is more common in women of higher socioeconomic class.

Two diseases

- Cullen's syndrome
  - Nodular disease/endometriomas
  - Severe symptoms
  - Assoc. complications (non menstrual pains)
  - Locally invasive
  - Rx extensive surgery
  - Histology: fibromuscular hyperplasia (adenomyoma)
  - Malignant transformation

- Sampson's syndrome
  - Peritoneal/superficial disease
  - Mild/moderate symptoms
  - No assoc. complications
  - Superficial
  - Rx medical/simple surgery
  - Histology: endometrial-like glands & stroma
  - Non malignant

R Garry Human Reprod. 2004 19:760-768

Theories on Pathogenesis

Theory	Author	Year
Activation of residual embryonic	Van Recklinghauser & Russell	1896 & 1899
Coelomic metaplasia	Iwanhof & Meyer	1898 & 1919
Lymphatic Dissemination	Halban & Sampson	1924
Retrograde Menstruation	Sampson	1927
Hematogenic Dissemination	Navrital & Kramer	1955
Embryogenic Origin	Redwine & Signorile	1992 & 2009

Pathogenesis

Coelomic mataplasia theory *(Iwanhof & Meyer, 1898 & 1919)*

Embryologically, the coelomic epithelium gives rise to the epithelium of the Mullerian duct, ovaries, the peritoneal and pleural cavities.

An unknown induction agent may stimulate endometrial differentiation of these tissues.

Implantation theory

Retrograde menstruation (Sampson 1927)

Pathogenesis

Embolization theory

endometrial cells may spread via the lymph or blood vessels to ectopic sites.

Endometriosis has an embryonic origin

infant endometriosis, found in 1/9 (11%) of infants dying of sudden infant death syndrome (SIDS), (Redwine 1992a).

Signorile 2009 showed that: 4/36 (11%) of fetal embryos had evidence of ectopic endometrial tissue.

The Problem

- 10%-15% of menstruating women (Viagno 2004)
- Approximately 176 million women worldwide
- 2 million women in UK
- Underfunded
- Underdiagnosed
- Inadequately treated

Delayed diagnosis

- Delay in diagnosis reported to be 6-9 years (Dmowski et al 1997)

- Little is known about the reasons for the diagnostic delay and the effect that it has on women's experiences of the condition

Delayed diagnosis

- Overall median delay of 8.25 years (3.75-17.5)
- Delay from symptom experience to seeking medical help median 1.5 years (0.5-4)
- Delay from reporting symptoms within primary care to being referred to secondary care median 3 years (1.75-8.75)
- Delay from referral to diagnosis median 0.75 years (0-1)

Why the delay?

- Individual patient level
  - Normalising symptoms
  - Were reluctant to disclose symptoms due to embarrassment and fear of being perceived as being weak or failure to cope
- Medical level
  - Symptoms normalised by medical staff
  - Intermittent hormonal suppression of symptoms
  - False-negative investigations

How does it present?

- Pain
  - Dysmenorrhoea
  - Dyspareunia
  - Chronic pelvic pain
  - Dyschesia
- Subfertility

Symptoms

Symptoms	Frequancy %
Dysmenorrhea	60-80
Chronic Pelvic Pain	30-50
Subfertility	20-50
Dyspareunia	25-40
Irregular Cycle	10-20
Dysurea/Hematurea	1-2
Dyschezia	1-2
PR Bleeding	‹1

Clinical Evaluation

History:

- **Pelvic pain and secondary dysmenorrhoea:** Pain is common and typically precedes menstruation and eases during bleeding
- **Deep dyspareunia**, particularly if there are deposits in the vagina or pouch of Douglas
- **Subfertility**
- **Rectal bleeding**, particularly with bowel endometriosis
- **Haematuria** in urinary tract endometriosis

Clinical Evaluation

Examination:

- Usually unremarkable, the exception of women with severe disease.
- May reveal a mass, ruptured cysts can present with acute abdomen
- Bluish discolouration of the cervix or vagina
- Bimanual examination may elicit thick nodules or tenderness in the vagina, rectovaginal septum, posterior fornix or uterus
- Characteristically immobile uterus, retroverted with extensive disease
- Examination of the adnexa may reveal ovarian masses

Investigations

- Imaging:

  TVS is helpful in the detection of endometrioma

  MRI may be useful to assess extra peritoneal lesions and to delineate the contents of the pelvic masses.

- Elevated Ca-125: Specificity 85-90% & sensitivity 20-50%.

- Laparoscopy is the gold standard diagnostic test for endometriosis.

Classification

- The AFS scoring system is the most widely used for classification of endometriosis
- It grades women of having mild, moderate, severe and extensive disease

AFS

AMERICAN SOCIETY FOR REPRODUCTIVE MEDICINE
REVISED CLASSIFICATION OF ENDOMETRIOSIS

Patients' name _____ Date _____

Stage I (Minimal) - 1–5
Stage II (Mild) - 6–15
Stage III (Moderate) - 16–40
Stage IV (Severe) - > 40

Total _____

Laparoscopy _____ Laparotomy _____ Photography _____

Recommended treatment _____

Prognosis _____

	ENDOMETRIOSIS	< 1cm	1–3cm	>3cm
Peritoneum	Superficial	1	2	4
	Deep	2	4	6
Ovary	R Superficial	1	2	4
	Deep	4	16	20
	L Superficial	1	2	4
	Deep	4	16	20

	POSTERIOR CULDESAC OBLITERATION	Partial	Complete
		4	40

	ADHESIONS	< 1/3 Enclosure	1/3–2/3 Enclosure	> 2/3 Enclosure
Ovary	R Filmy	1	2	4
	Dense	4	8	16
	L Filmy	1	2	4
	Dense	4	8	16
Tube	R Filmy	1	2	4
	Dense	4*	8*	16
	L Filmy	1	2	4
	Dense	4*	8*	16

*If the fimbriated end of the fallopian tube is completely closed, change the point assignment to 16.

Denote appearance of superficial implant types as red [(R), red, red-pink, flamelike, vesicular blobs, clear vesicles], white [(W), opacifications, peritoneal defects, yellow-brown], or black [(B) black, hemosiderin deposits, blue]. Denote percent of total described as R___%, W___% and B___%. Total should equal 100%.

Denote appearance of of superficial implant types as red [(R), red, red-pink, flamelike, vesicular blobs, clear vesicles

Additional endometriosis: _____

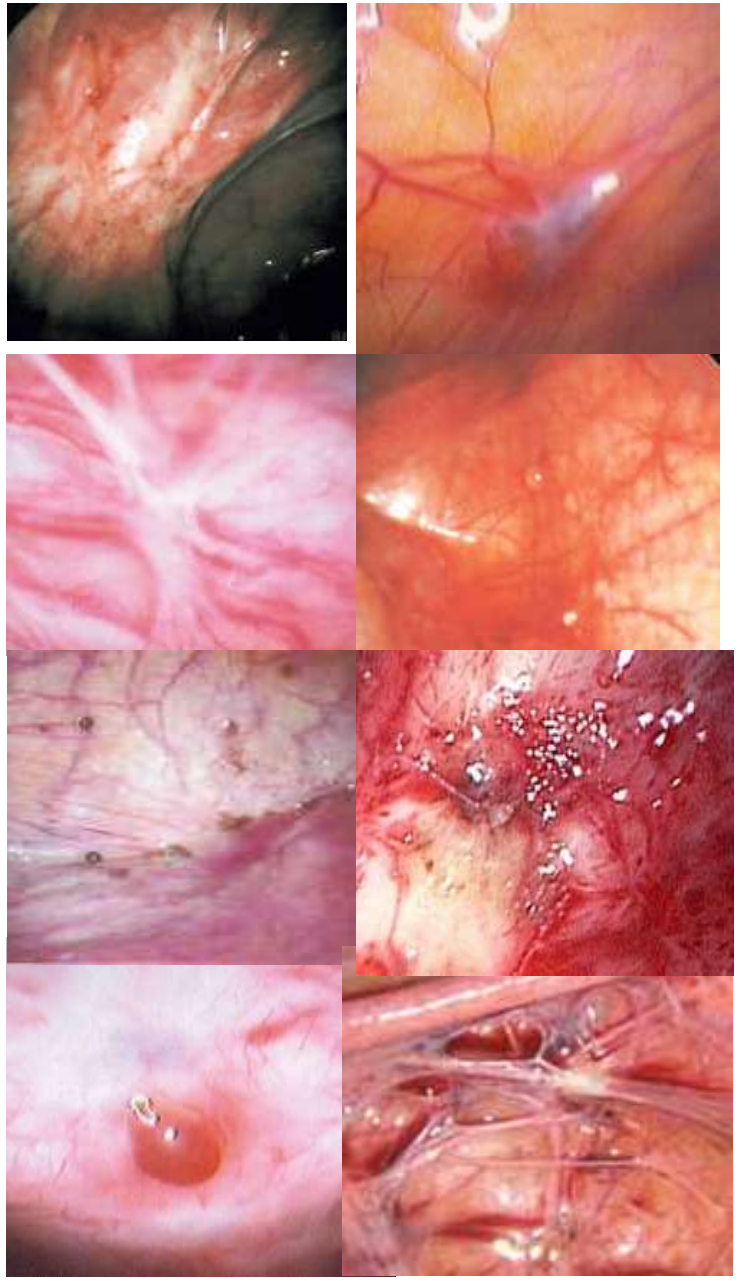
Associated pathology: _____

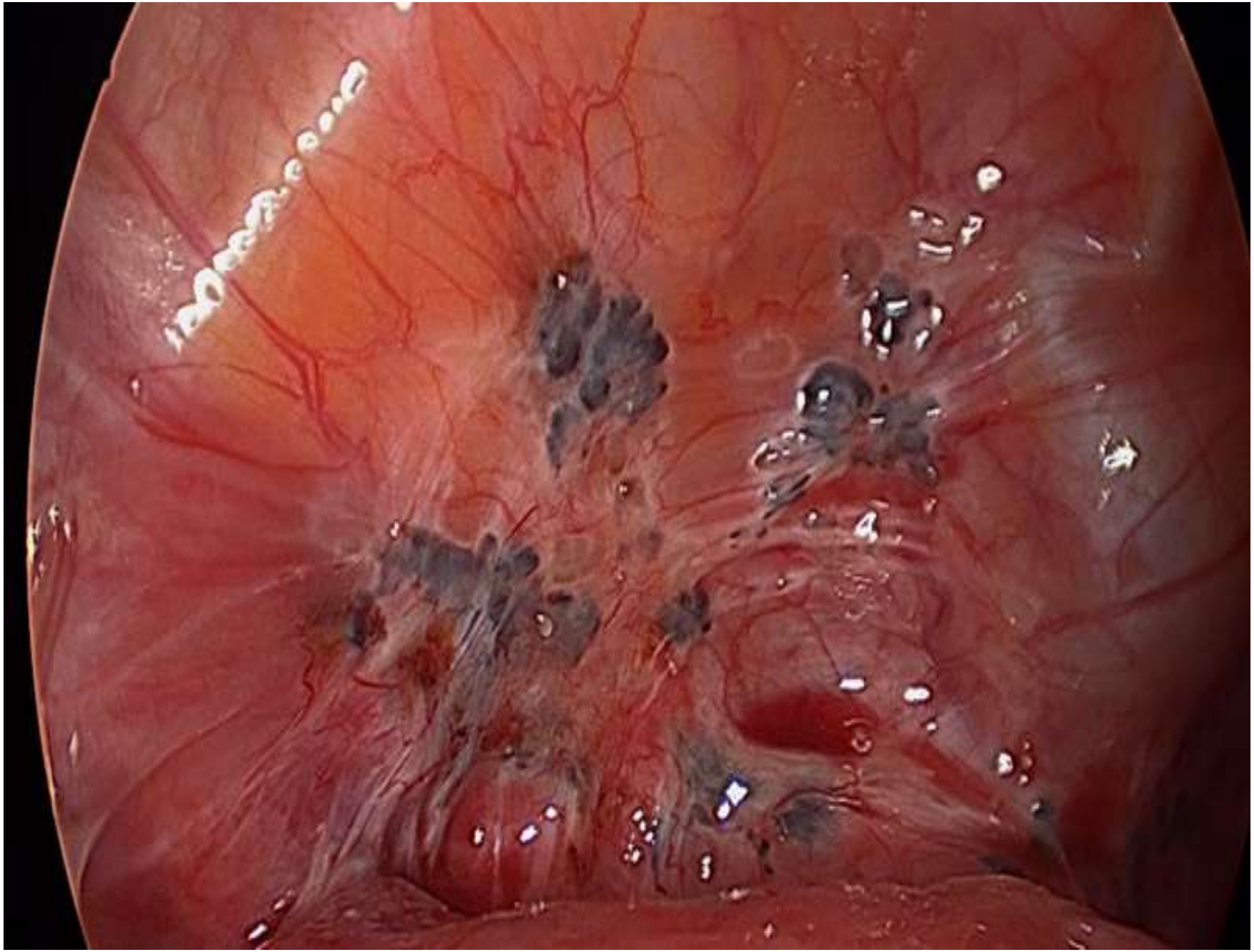
L To be used with normal tubes and ovaries R

L To be used with abnormal tubes and/or ovaries R

Laparoscopic appearances of peritoneal endometriosis

Lesion	Frequency
Blue-black lesions	**60%**
Clear papules	
Red polypoid lesions	
Red flame lesions	
Powder burn lesions	
Brown lesions	
White lesions	
Peritoneal pockets	





Indication for Treatment

Pain: Dysmenorrhea, Dyspareunia, Bladder or Bowel

Fertility

Ureteric Obstruction

Bowel Obstruction

Management

The choice of treatment will depend on:

- Age
- Fertility plans
- The severity of symptoms
- The site of the disease.

Treatment options

- **Medical**
  - Non Hormonal
  - Hormonal
- **Surgical**
  - Laparoscopic
  - Open

Non Hormonal Treatments (Simple Analgesics)

Some women choose to use simple analgesia. This avoids hormonal preparations and is useful in women trying to conceive.

- **Disadvantages**
  - May mask symptoms, delay further treatment and hence allow DISEASE PROGRESSION
- **Advantages**
  - Cheap
  - Safe
  - May treat symptoms

Hormonal Treatments

The aim of hormonal medical treatment is to cause atrophy of ectopic endometrium.

- Progestagens
- Combined oral contraceptive
- Mirena (LNG-IUD)
- Danazol/Gestrinone
- Gonadatrophin Releasing Hormone agonists +/- add back HRT (Zoladex, Prostap)

Progestagens

- **Disadvantages**
  - Bloating
  - Skin changes
  - Breast tenderness
  - Weight Gain
  - Contraceptive
- **Advantages**
  - Cheap
  - Safe

Combined Oral Contraceptive Pill

- **Disadvantages**
  - All OCP side effects
  - Contraceptive
  - Breakthrough bleeding
  - Raised oestrogen levels
- **Advantages**
  - Cheap
  - Relatively safe

Julia Brown et al 2018, systematic review.
There is insufficient evidence to make a judgement on the effectiveness of the COCP

Danazol /Gestrinone

- **Disadvantages**
  - Androgenic side effects
  - Voice change
  - Contraceptive
  - Need to adjust dose to achieve amenorrhea
- **Advantages**
  - ? Beneficial with regard to libido

GnRH Agonists

- **Disadvantages**
  - Expensive
  - Limited duration of use
  - Marked hypo- oestrogenic side effects
  - Osteoporosis

- **Advantages**
  - Achieves very hypo- oestrogenic state and hence disease regression
  - Can be used as adjuvant to surgery

So what medical treatment is best?

- All hormonal treatments are of equal efficacy with regard to symptom control
- All (if used correctly) will usually cause disease control, but not cure
- The choice depends on side effects.

However!

- All are relatively contraceptive

- The disease recurs after cessation of treatment in the majority of cases.

Surgical options

- Lasers KTP/CO_2
- Harmonic
- Diathermy
  - Bipolar
  - Unipolar

- Laparoscopy
- Laparotomy
- Vaporisation
- Excision
- Coagulation

Management

Surgical:

- Laparoscopic ablation (with laser or bipolar diathermy) and excision (with laser or harmonic scalpel) appear to be effective treatments for pain associated with endometriosis.

- Up to 70% of women with mild to moderate disease report symptomatic improvement.

- Benefits appear to be more long lasting than with medical treatments.

Management

- Up to 90% of women continue to report symptomatic relief at 1 year.
- GnRH agonist use postoperatively significantly prolongs the pain-free interval.
- Laparoscopic treatment may also improve fertility.
- Endometrioma should be deroofed and removed instead of ablation laparoscopically (Hart et al 2008)
- Hysterectomy and BSO are occasionally performed to alleviate symptoms, although operation is technically difficult and should be the last resort.

Cont.

Endometriosis and Infertility

- 30-50% of patients with endometriosis have infertility.
- *Pathophysiology of infertility*:

 1- distortion of pelvic anatomy and tubal adhesions

2- Abnormal peritoneal and cellular function

3- ovulatory and endocrine abnormalities

4- impaired implantation

Management of endometriosis in infertility:

- Medical management is not indicated as it result in anovulation , risk of teratogenicity and delays conception.
- Surgical Rx. Of mild to moderate endo. Improve natural conception rates
- Surgical Rx. Of sever endo. Improve success at IVF.

Adenomyosis

Definition: Presence and growth of endometrial glands and stroma within the myometrium.

. It occurs most often in multiparous women at the end of their reproductive

life

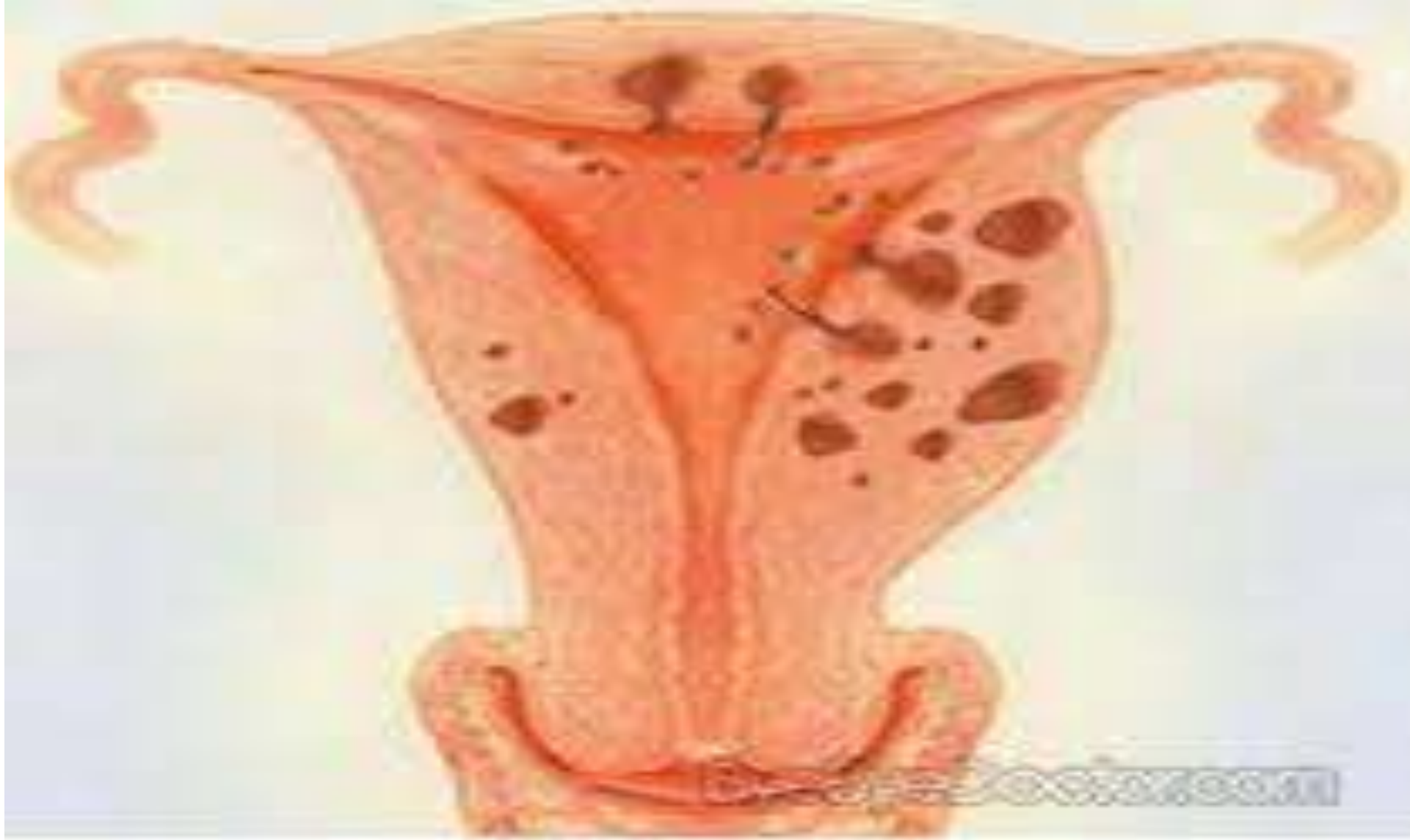
Risk factors for adenomyosis are:

- High parity

-Vigorous curettage of the uterus

. *Presenting complaints* are usually of heavy menstrul bleeding, progressive dysmenorrhoea and deep dyspareunia.

. Examination..... Will reveal a symmetrically enlarged uterus that may be tender.

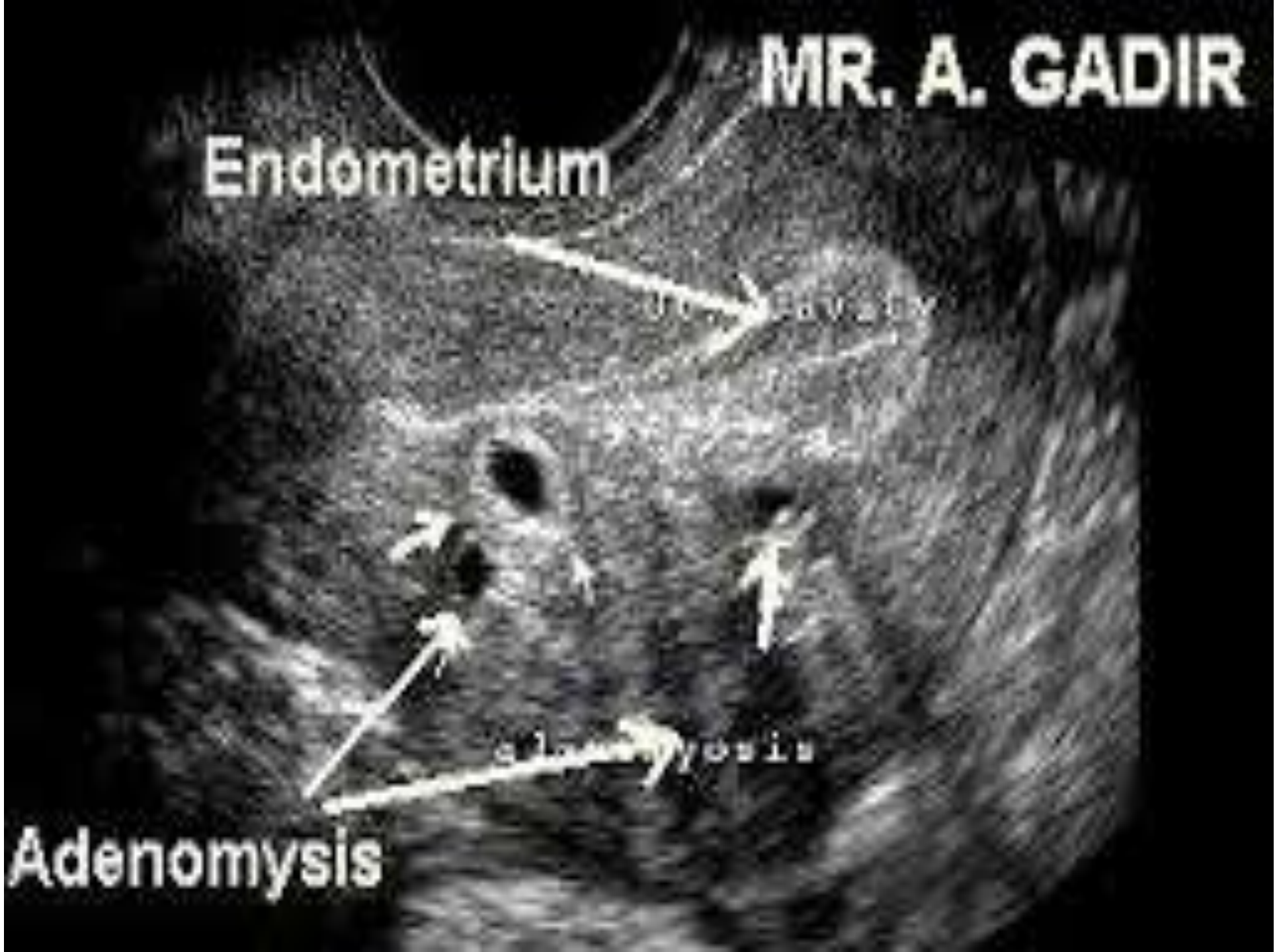


Adenomyosis. Note thickened wall of uterus which can be mistaken for fibroids.

Cont.

- Diagnosis is usually made histologically after removal of uterus at hysterectomy, MRI may be helpful

- Treatment: unfortunately, adenomyosis has a limited response to hormonal therapy and often requires hysterectomy to alleviate symptoms.


MR. A. GADIR
Endometrium
Adenomysis