ADOLESCENT ENDOMETRIOSIS

. Nermeen Shams-Eldin

A.Professor of Obstetrics & Gynecology

Faculty of medicine – Mansoura University

Outline

- Overview on adolescent endometriosis.
- Diagnosis of adolescent endometriosis.
- Treatment of adolescent endometriosis.
- Role of fertility preservation.

Adolescent Endometriosis; An overview

Definition

Presence of histological elements like endometrial glands & stroma outside the uterine cavity, affecting girls <20 years.

(Brosens et al., 2013)

Incidence & Etiology

- **Actual incidence is unknown & varies from 25-73%.**

(Brosens et al., 2013)

- **It was described in post-thelarcheal girls not only post-menarcheal girls suggesting multifactorial peripubertal etiologies not only retrograde menstruation.**

(Shah & Missmer, 2011)

Main risk factors

- **Positive family history.**
- **Genital malformations leading to outflow obstructions.**
- **Early age of menarche.**
- **Short menstrual cycle.**

(Yang et al., 2012); (Geysenbergh et al., 2017)

Diagnosis of adolescent endometriosis

Diagnosis

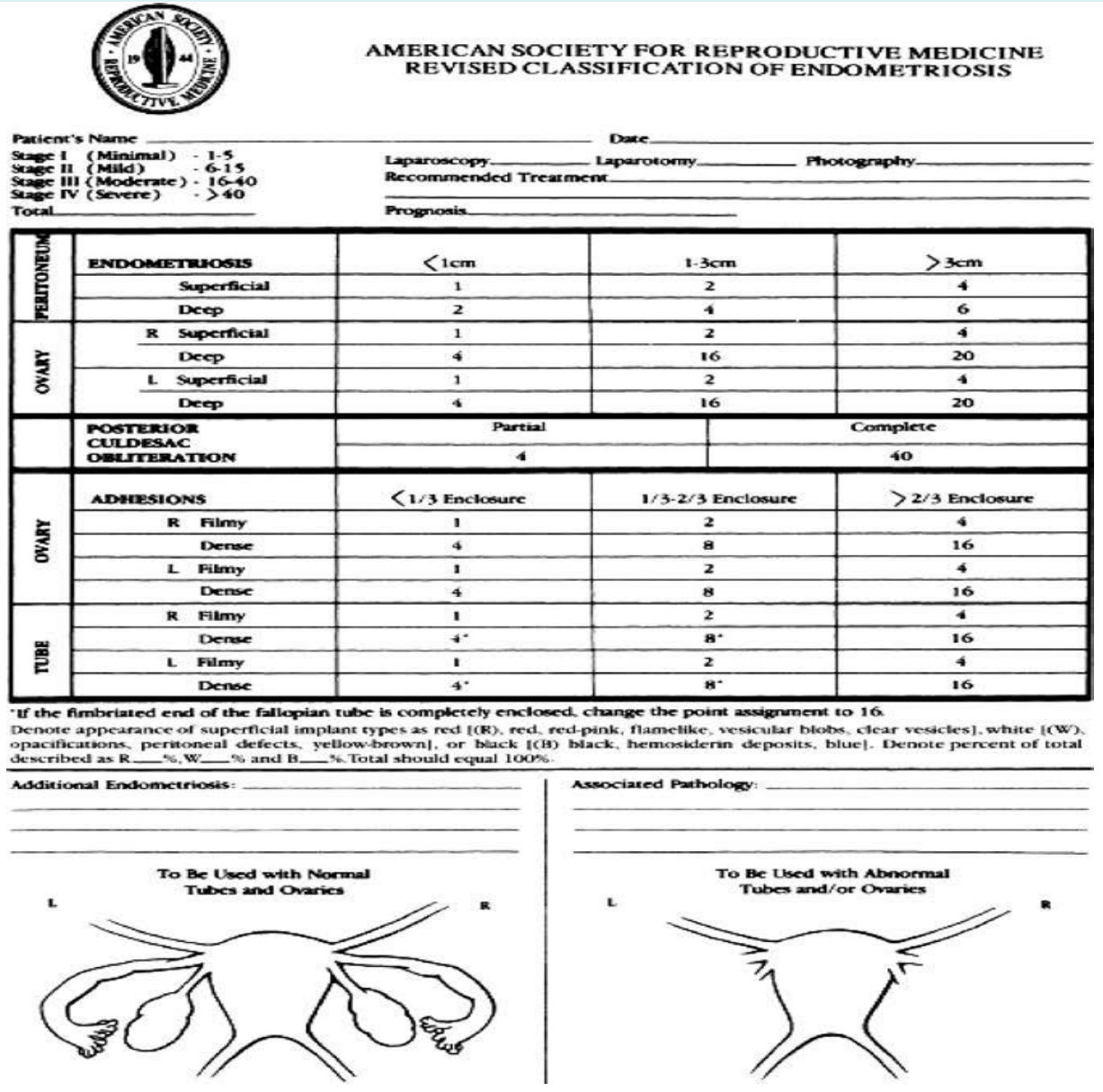
- **Endometriosis may be more progressive than in adults with variable manifestations, with consideration to risk factors.**
- **It should be differentiated from: Adenomyosis, Recurrent Infections, Gastrointestinal Pathologies (as IBS), Mullerian Anomalies that totally or partially obstruct the flow.**

(Benagiano et al., 2018)

Diagnosis

Unlike endometriosis in adults, adolescent endometriosis often manifests in the form of stage I or II, characterized by superficial peritoneal disease & less frequently as stage III or IV, which can involve deeply infiltrative disease

(Tyson et al., 2024)



AMERICAN SOCIETY FOR REPRODUCTIVE MEDICINE
REVISED CLASSIFICATION OF ENDOMETRIOSIS

Patient's 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 enclosed, 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%.

Additional Endometriosis: _____

Associated Pathology: _____

To Be Used with Normal Tubes and Ovaries

To Be Used with Abnormal Tubes and/or Ovaries

Symptoms

- Cyclic or acyclic pelvic pain.
- Ovulatory pain.
- Premenstrual spotting.
- Dysuria, Dyschasia or Bowel symptoms.
- Systemic symptoms during menses (including nausea/stomach upset or dizziness/headache).
- Consider also dysparunia for married females.

(Greene et al., 2009)

Clinical examination

- **No evidence was found with regard to best method of clinical examination (abdominal, local) in adolescents.**
- **But acceptance is necessary for vaginal/rectal examination to be discussed with the adolescent and her caregiver *(ESHRE 2022, GPP)*.**

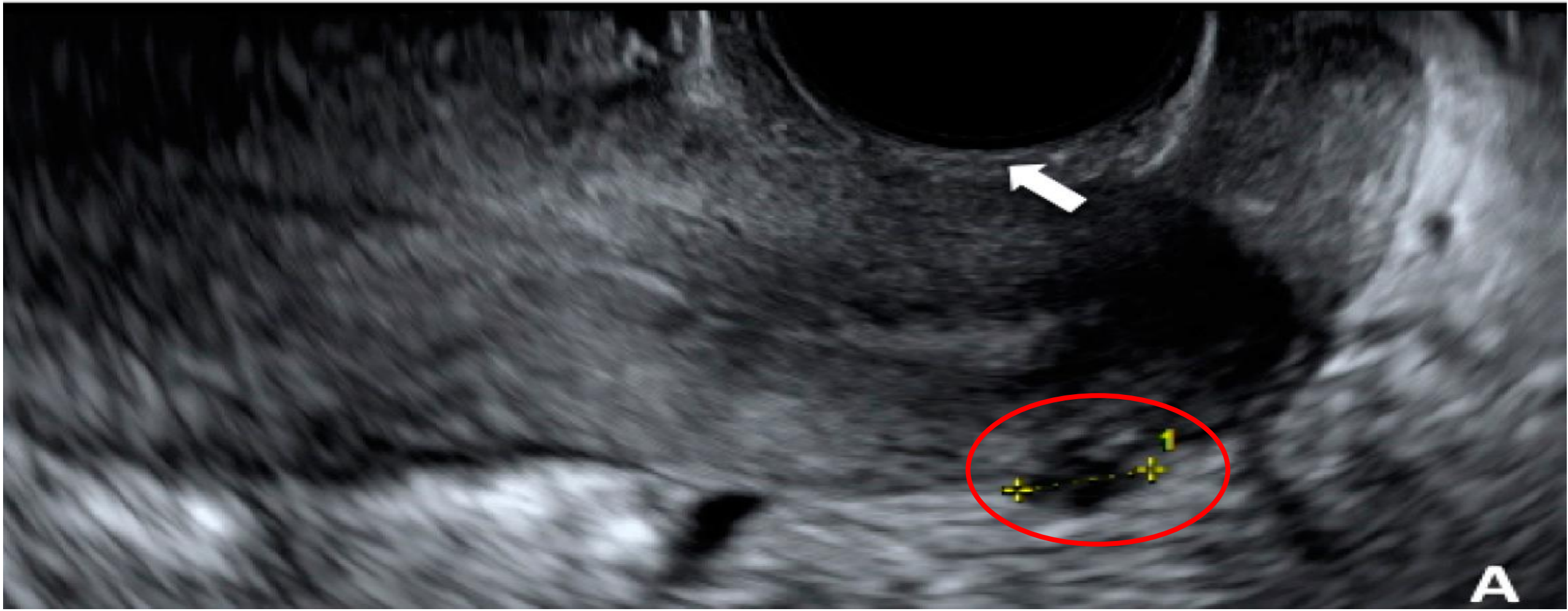
(Becker et al., 2022)

Imaging

- **TVS is recommended to be used in adolescents in whom it is appropriate, as it is effective in diagnosing ovarian endometriosis.**
- **If TVS scanning is not appropriate, transabdominal, transperineal, or transrectal scan, 3D ultrasound, or MRI may be considered *(ESHRE 2022, Grade I)*.**

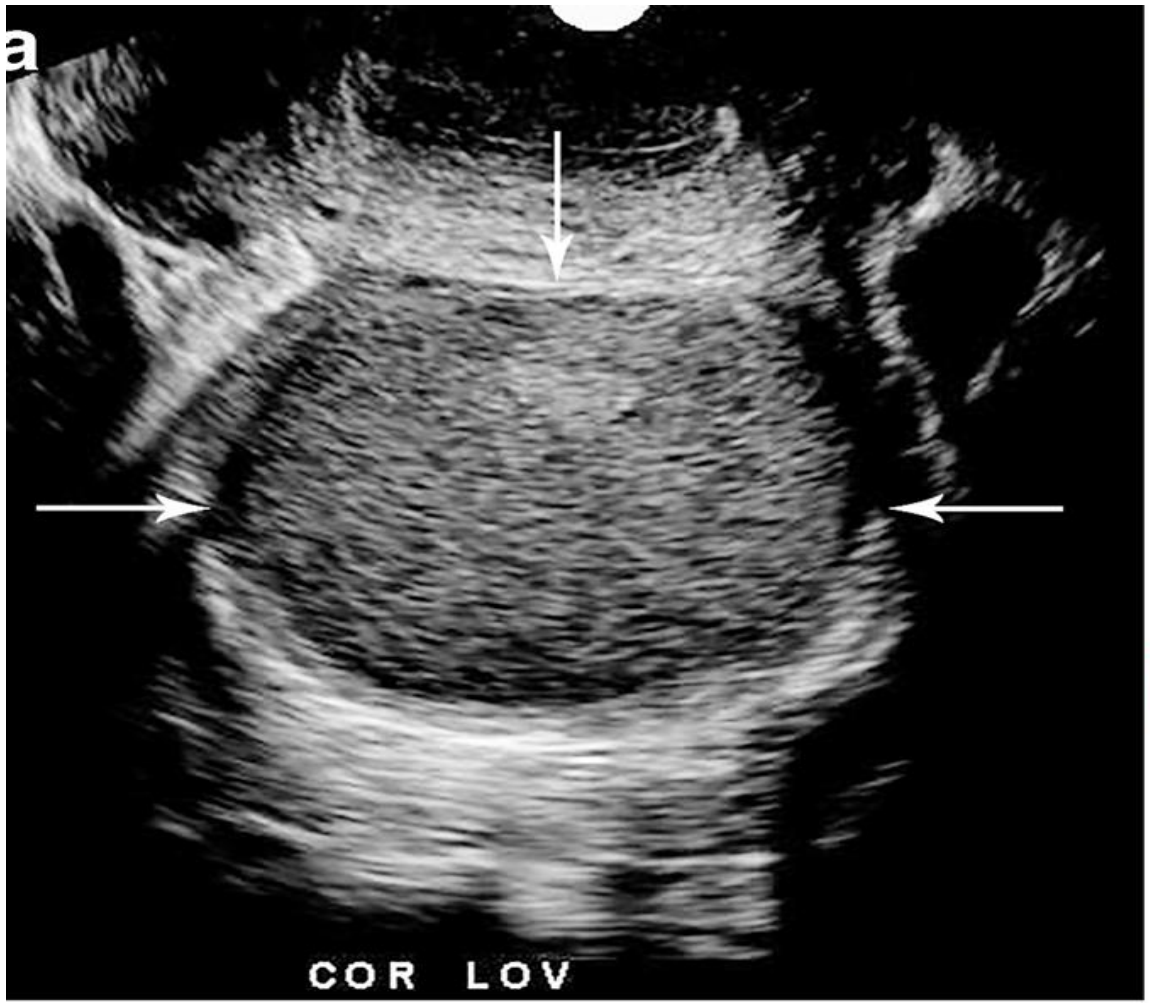
(Becker et al., 2022)

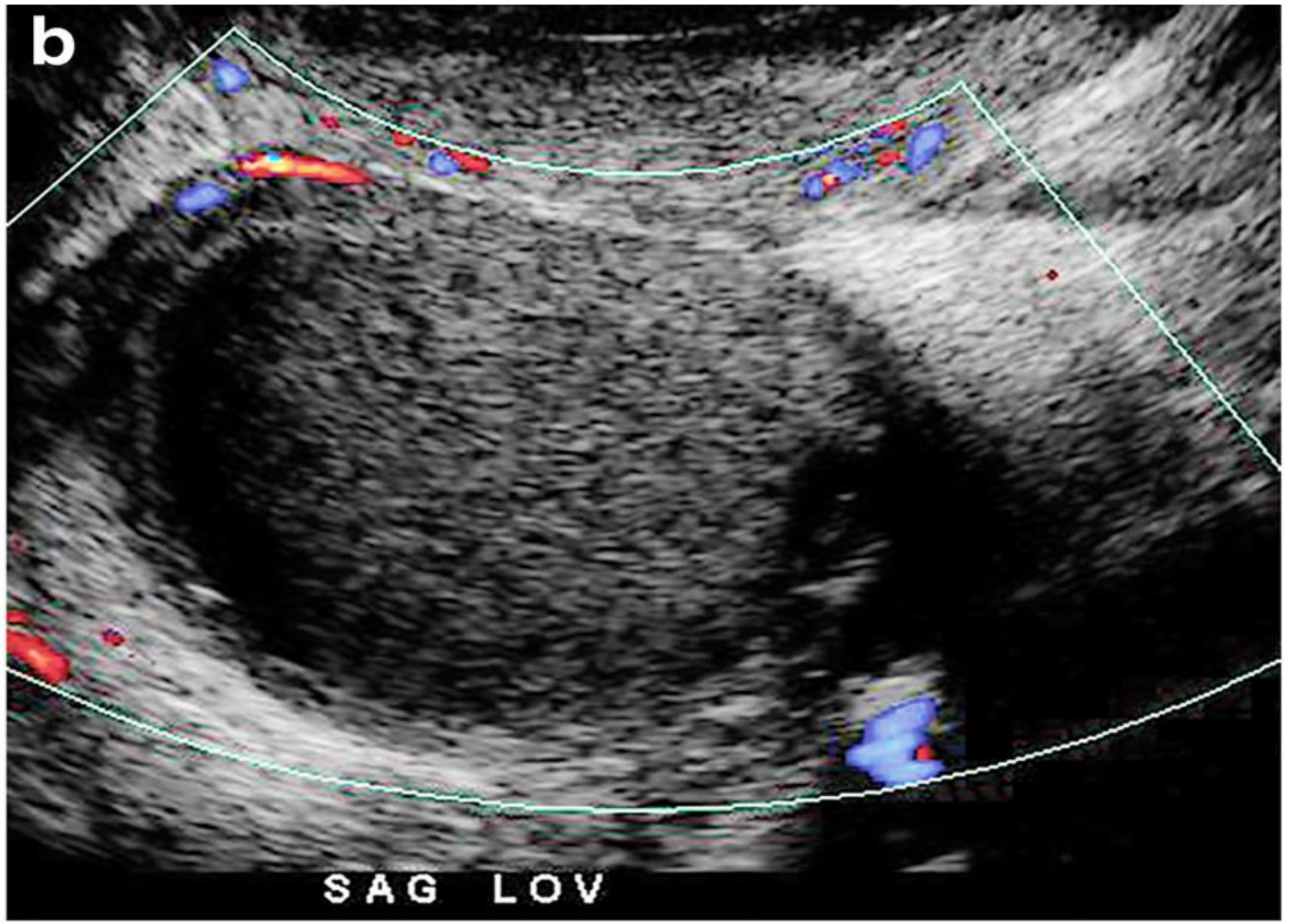
Ultrasonographic image of nodule affecting USL



(Martire et al., 2024)

TVS/Doppler image of endometrioma in a 19-year-old female with pelvic pain





(Back et al., 2017)

Biomarkers

- **Showed low diagnostic value.**
- **CA125 was studied in surgically confirmed cases & its level didn’t vary between control & cases.**

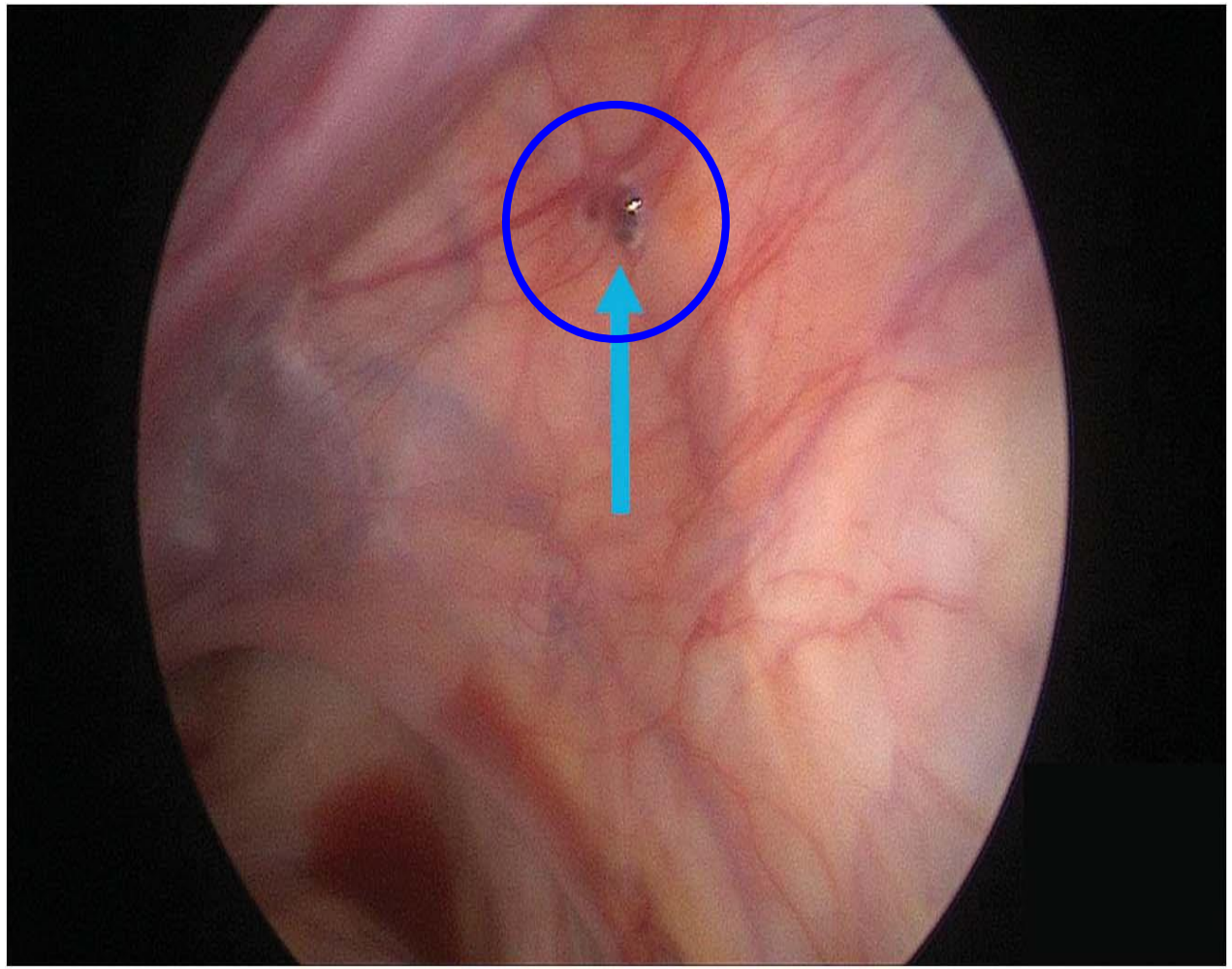
(Sasamoto et al., 2020)

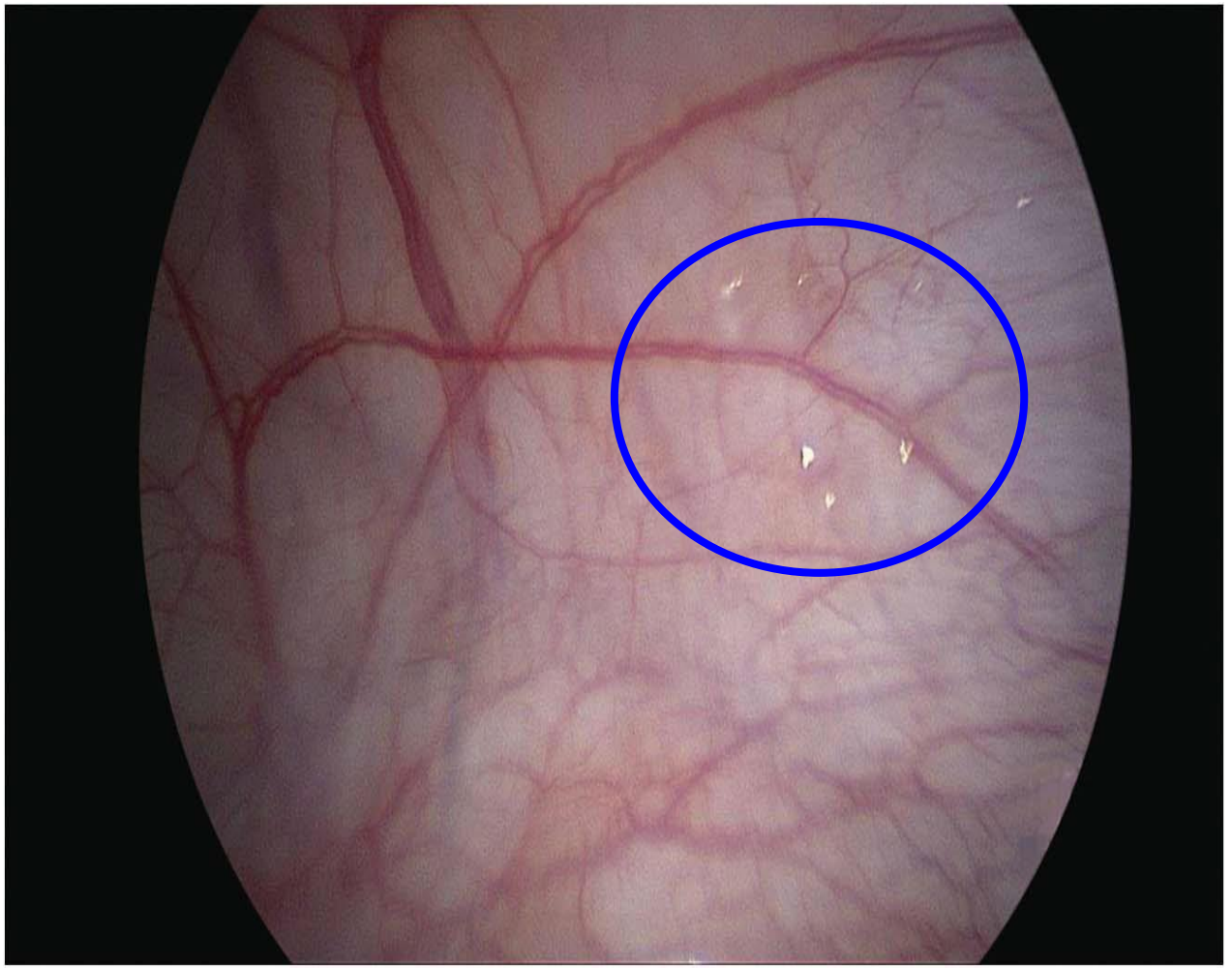
Laparoscopy

- Needed in cases of persistent symptoms & failed medical treatment &/or negative imaging.
- Lesions are not the same as in adult type, being more towards atypical red or clear vesicular lesions, however, extensive adhesions or endometrioma may be present.

(Shah & Missmer, 2011)

Laparoscopic images showing red, inflamed adolescent endometriotic implant in right paraovarian fossa & clear, vesicular lesion





(ACOG, 2018)

Histopathology

- If laparoscopy is performed, biopsy should be obtained.
- In a systematic review, by Janssen et al, they assessed 15 studies by laparoscopy after chronic pelvic pain & dysmenorrhea in which 880 adolescents(10-21 years) were not responding to OCP or NSAIDS, endometriosis was detected in two thirds of them.

(Janssen et al., 2013)

Histopathology

- Prevalence of adolescent girls with ASRM stages III & IV endometriosis was 32% & 16%, respectively in cases with resistant chronic pelvic pain.
- Histopathology was not performed in all studies, but if done, detection rate was between 43% & 100% in different studies.

(Janssen et al., 2013)

Treatment of adolescent endometriosis

Treatment

- The aims are to suppress pain & prevent disease progression.
- The main lines are:

  1- Medical treatment.

  2- Surgical treatment.

  3- Combined medical & surgical treatment.

Medical treatment

- There are few studies about effective treatment in adolescents & it is needed to tailor treatment to achieve good quality of life.
- The role of NSAIDS (or other analgesics) is to relieve pain, dysmenorrhea.

(Becker et al., 2022)

Medical treatment

- **Hormonal contraceptives or progestins had been advised for endometriosis-associated pain.**

(Becker et al., 2022)

- **Less pain was reported with use of OCP than placebo.**

(Sarıdogan et al., 2017)

Medical treatment

- **Continuous rather than cyclic oral, vaginal, or estro-progestinic patch therapy is preferred to achieve an adequate atrophy & decidualization of the endometriotic lesions.**
- **If there is no symptom relief after 4 months of continuative empiric therapy, a surgical approach could be suggested.**

(Sarıdogan et al., 2017)

Medical treatment

- **Progestins** suppress the pituitary-ovarian axis, causing anovulation & atrophy of the eutopic & ectopic endometria.
- They also reduce inflammation by modulating immune response.
- Either **oral progestins** (Dienogest, Norethindrone acetate), **Etonogestrel implant** or **LNG-IUS** can be used.

(Ebert et al., 2017)

Medical treatment

- It was concluded that Dienogest (2mg/day) is as effective for endometriosis-associated pain in adolescents as in adults.

(Ebert et al., 2017)

- LNG-IUS role was investigated & it was effective.

(Yoost et al., 2013)

Medical treatment

- **Danazol has limited use due to its androgenic effects.**

(Yoost et al., 2013)

- **GnRH agonists :After one year of treatment, quality of life was improved as compared to baseline, but it is not preferred in females < 16 year due to its effect on BMD; and It is used only if other treatments have failed.**

(Sadler Gallagher et al., 2017)

Surgical treatment

- Surgery should only be performed in clinically necessary cases, such as in young patients who are not responding to medical therapy or suspect malignant ovarian cyst.
- It should be performed laparoscopically by an experienced surgeon.

(ACOG, 2018)

Surgical treatment

- **No data exist to show that ablation or excision is superior for the treatment of superficial peritoneal disease (some surgeons hypothesize that both can lead to adhesion formation).**
- **Experts encourage caution when generalizing the positive outcomes of excisional surgery for stage III & IV disease.**

(ACOG, 2018)

Surgical treatment

- **Although endometriomas are less frequent in adolescent, the goal of surgery in adolescents should be to perform cystectomy, rather than simply draining the cyst & CO2 laser vaporisation.**
- **Recurrence rates may be considerable (recurrence of ovarian cysts & pain after surgery is 40-50% at 5-year follow-up), especially when surgery is not followed by hormone treatment.**

(ACOG, 2018)

Combined medical & surgical treatment

It was suggested that long-term GnRH agonists & OCP for 6-12 month after conservative surgery will help to prevent recurrence.

(Seo et al, 2017)

Fertility preservation

in adolescent endometriosis

Fertility preservation

- There is increased risk of premature ovarian failure.
- In opinion papers, fertility preservation may be indicated for those with bilateral ovarian endometriomas and those operated unilaterally with a contralateral recurrence.

(Somigliana et al., 2015); (Carrillo et al., 2016)

Fertility preservation

- **Patients should be informed about fertility preservations options, however; benefit, safety & indication remain unknown.**
- **It may be beneficial for young women with endometriosis & if considered, it should be done before ovarian surgery is carried out.**

(Becker et al., 2022)

Key messages

- Adolescent endometriosis is multifactorial with widely variable incidence.
- It often manifests as stage I or II & less frequently as stage III or IV.
- It may be more progressive than in adults with variable manifestations.
- TVS is the recommended imaging for diagnosis, if appropriate.
- Laparoscopy is needed in persistent symptoms & failed medical treatment &/or negative imaging.
- If laparoscopy is performed, biopsy should be obtained.
- Treatment aims to suppress pain & prevent disease progression.

Key messages

- Recommended medical treatments include hormonal contraceptives, progestins or GnRHa.
- Surgery should only be performed in non-responders to medical therapy or suspected malignancy.
- Surgery should be performed via laparoscopy by an experienced surgeon.
- Combined medical & surgical treatment may help to prevent recurrence.
- Fertility preservation options exist & patients should be informed about them, however; benefit, safety & indication remain unknown.

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Thank You