

Adenomyosis and Infertility— Review of Medical and Surgical Approaches

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Abstract

- the impact of adenomyosis on fertility
- diagnosis, pathogenesis of infertility and possible treatment methods

Introduction

- Pubmed, Embase and Cochrane databases published from 1982 to 2019
- Symptoms, pathological background, diagnostics and possible management

Definition and Symptoms

- an invasion of the endometrium into the uterine myometrium
- The prevalence of adenomyosis
- clinical symptoms: menorrhagia ,dysmenorrhea, metrorrhagia

Pathogenesis

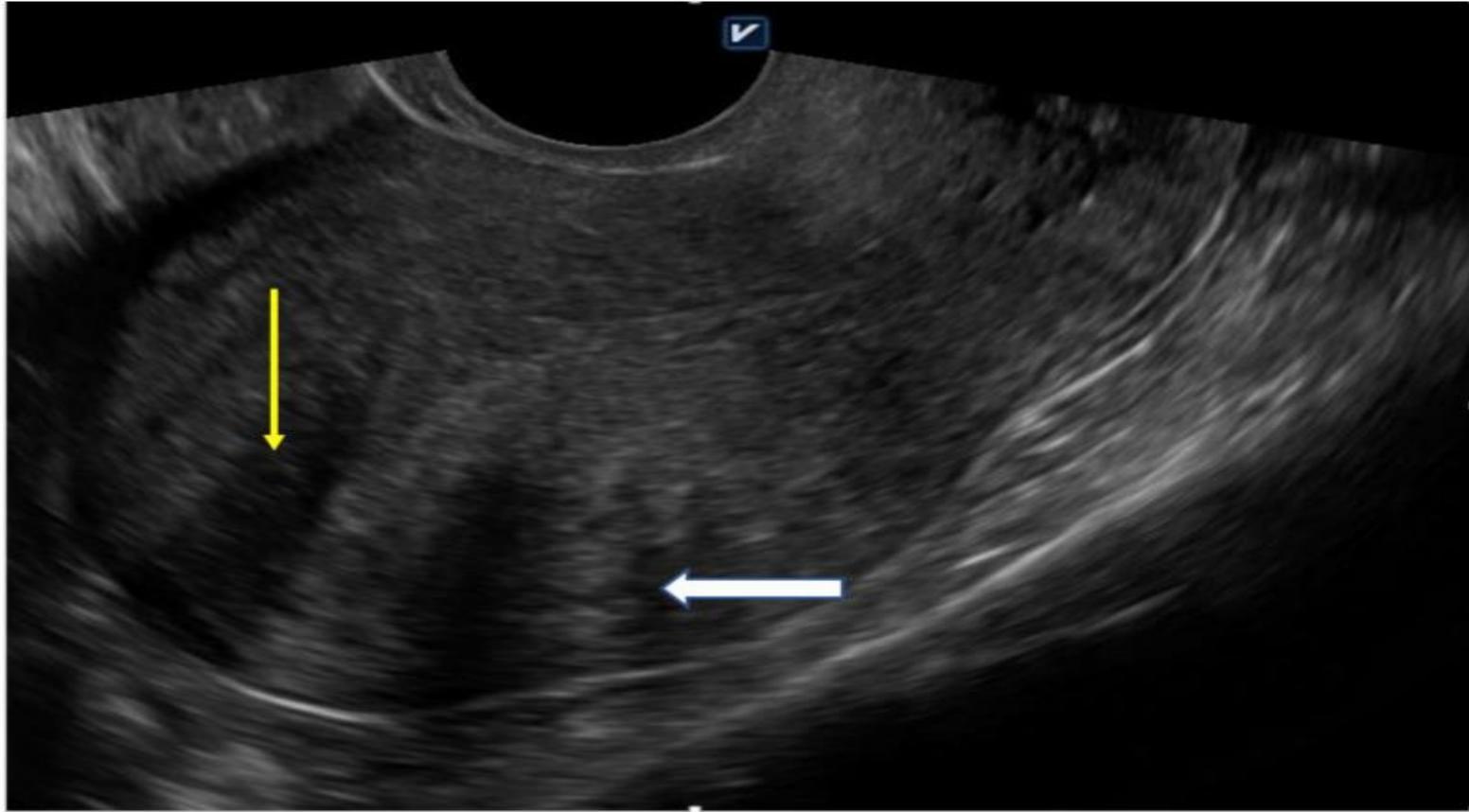
- higher estradiol receptor expression
- auto-traumatization
- IL-10,IL1,IL6
- mRNA , long noncoding RNAs

Diagnostics

- Ultrasound
- Hysteroscopy
- MRI
- Histological Evaluation

Sonographic features of diffuse and focal adenomyosis

Diffuse Adenomyosis	Focal Adenomyosis
globally enlarged uterus	focal disturbances in myometrium layer
asymmetric thickness anterior and posterior wall = pseudo-widening sign	sometimes focal form diagnosed as intramural myoma
cystic myometrium (cystic anechoic spaces)	anechoic cysts
junctional zone not clearly visible, thickening of the JZ	
heterogeneous echogenicity of the myometrium	



Globally enlarged uterus with heterogenic myometrium (yellow arrow) and asymmetric thickness (white arrow)

Biological Influence of Adenomyosis on Fertility—Possible Mechanisms

- Hyperactivity of the myometrium
- Distortion of the uterine cavity
- implantation window: HOXA10, LIF, MMP, IL-6, IL -10, cytochrome P450 and RCAS1
- Integrins: integrin β -3 and OPN mRNA
- chronic inflammation

Impact of Adenomyosis Treatment on Fertility

- The pharmacological treatment
- Final treatment with a hysterectomy

Pharmacological	Surgical
Anti-inflammatory drug	Endo-myometrial ablation
Oral contraceptives	High-intensity focused ultrasound
GnRH	Electrocoagulation of adenomyosis foci
progestins	Resection of adenomyosis foci
	Hysterectomy

Surgical Methods

- Endo-myometrial resection
- Embolisation
- The high-intensity focused ultrasound method (HIFU)
- Electrocoagulation

Pharmacological Methods

- NSAIDs
- oral contraceptives
- GnRH analogues
- progestins

IVF Outcome in Adenomyosis

- Conflicting results

Conclusions

- no specific treatment
- pharmacological and surgical treatment