ADENOMYOSIS

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- In this condition, **endometrial glands and stroma** are displaced within the uterine myometrium.
- The displaced endometrial tissue may be localized to a discrete mass termed as adenomyoma or be seen as diffusely scattered island of abnormal tissue throughout the myometrium **(diffuse adenomyosis)**.
- The endometrial tissue is frequently **(not always)** surrounded by myometrium that has undergone hyperplasia and hypertrophy.
- Thus adenomyosis may be defined as the benign invasion of endometrium into the myometrium, producing a diffusely enlarged uterus which microscopically exhibits ectopic non-neoplastic, endometrial glands and stroma surrounded by the hypertrophic and hyperplastic myometrium.

- The term adenomyosis is derived from the terms adeno- (meaning gland), myo- (meaning – muscle), and -osis (meaning condition).

- Previously it was named as endometriosis interna.

- But adenomyosis is actually different from endometriosis and these two disease entities are found together in only 10% of the cases.

Pathophysiology

The precise etiology and the developmental events leading to adenomyosis is **unknown**.

Two major theories exist for the origination of adenomyosis.

One is de novo development from müllerian rests which is support observation of adenomyosis in mülleria remnants lacking endometrium.

The second theory is that adenomyosis is derived from endometrium.

All organs in human body that contains a cavity also possesses a submucous region with exception to uterus. It is though that main function of submucous coat is t prevent inward growth of glands that line these cavities.

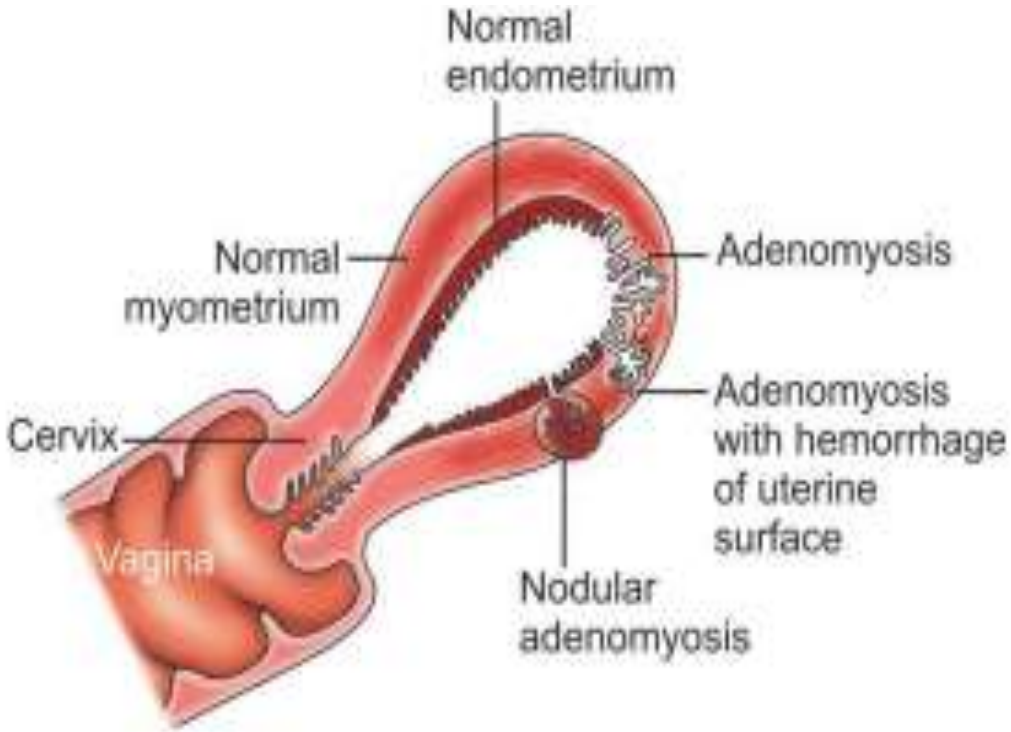
The disruption in continuity of basal layer and myometrium may occur during caesarean section and repeated delivery

Gross pathology

- The uterus is uniformly enlarged **(12 weeks of pregnant uterus size)** and globular in shape.
- Adenomyosis foci, on occasion, may contain brown staining old blood corresponding to hemolyzed blood and hemosiderin pigment deposits.
- The focally involved uterus with adenomyosis is termed ***as adenomyoma and often resembles appearance of uterine leiomyoma.***
- Typically adenomyoma has poorly defined margins as they merge with surrounding normal myometrium.
- So adenomyoma can not be enucleated like leiomyoma

Microscopic Pathology

Histologically both the endometrial glands and stroma in foci of adenomyosis resemble the basalis endometrium.
Unlike endometriosis it seldom respond to hormonal stimuli, a phenomenon
which explains why one sees occasionally hemorrhagic or reparative morphological events in foci of adenomyosis.



Risk factors

The risk factors that have been associated with adenomyosis include:

- **prior uterine surgery *(caesarean section, myomectomy)***
- **endometriosis**
- **uterine leiomyoma**
- **Parous women**

When radiologic criteria are used for diagnosis, disease can be found in all women irrespective of ages including adolescents.

Clinical presentation

History:

- Around thirty percent of patients with adenomyosis are asymptomatic or have minor symptoms.

Age and parity:

- Symptomatic adenomyosis occurs most often in parous women between age ***35 and 50.***

Symptoms:

- The most frequent symptoms are menorrhagia, secondary dysmenorrhea and metrorrhagia.
- Occasionally dyspareunia may be an additional symptom.
- Patients typically present with increasingly heavy or prolonged menstruation **(menorrhagia).**

- **The cause of menorrhagia may be due to:**

1. Poor contractility of the adenomyotic uterus to stop menstrual blood loss

2. Altered prostaglandin synthesis

3. Associated anovulation and endometrial hyperplasia.

- Patient may also complaint of progressive dysmenorrhea that may begin **1 week before** onset of menses and last until cessation of menstruation.
- Other symptoms may include pressure symptoms due to pressure on bladder or rectum by an enlarged uterus.

Signs

- **General examination** may reveal varying degree of pallor due to menorrhagia.
- **Abdominal examination**—Uterus may be Palpable
- **Pelvic examination** may reveal an uniformly enlarged globular uterus.
- The uterus can be **2–3 times normal size** but is usually ***< 14 cm.***
- The consistency of the uterus is typically softer, and boggier than the firm, rubbery uterus containing uterine leiomyoma.
- The adenomyomatous uterus may be mildly tender just before and during menses but should have normal mobility and **should not have any adnexal pathology.**

INVESTIGATIONS

Pelvic Ultrasound

Ultrasound is usually the first and often the only imaging modality employed to investigate menorrhagia and dysmenorrhea.

Unfortunately the sonographic features of adenomyosis are variable, and may be absent.

Transabdominal ultrasound has limited diagnostic value.

Transvaginal ultrasonography has better accuracy to diagnose adenomyosis than transabdominal ultrasonography.

- The spectrum of findings includes
- **(a)** normal appearing uterus.
- **(b)** focal or diffuse bulkiness, typically of the posterior wall.

- **When an adenomyoma is present, then appearances may closely mimic those of intrauterine leiomyoma, which may also co-exist.**

Pelvic MRI

- MRI is the modality of choice to diagnose and characterize adenomyosis, and has a very high diagnostic accuracy with **a sensitivity of ~ 78– 88% and a specificity of ~ 67–93%.**

- However because of the cost, MRI may be ***prohibitive and ultrasonography*** may be the initial investigation.

Diferential Diagnosis

The differential diagnosis includes disease processes resulting in uterine enlargement or menorrhagia or dysmenorrhoea.

The conditions that are considered in differential diagnosis of adenomyosis are:

1. **uterine leiomyoma**
2. **Polyps.**
3. **endometrial hyperplasia.**
4. **endometrial cancer.**
5. **menstrual disorders.**
6. **pregnancy and adnexal mass.**

Treatment :

Hysterectomy

- Hysterectomy is the most commonly employed treatment of adenomyosis as the results of medical treatment is often unsatisfactory.

- Although focal adenomyomas occasionally can be successfully removed, hysterectomy is the only treatment known to be highly 100% effective.

Medical Treatment

- The treatment of adenomyosis depends on severity of symptoms.
- At present medical therapy of adenomyosis can be attempted for symptomatic relief, especially in premenopausal women with mild symptoms and in women who wish to become pregnant.
- Nonsteroidal anti-inflammatory drugs, oral contraceptive pills, and menstrual suppression with progestins **(oral, injectable or intrauterine)** or continuous combined oral contraceptives have found to be helpful.
- However, adenomyosis is less responsive to hormone therapy than endometriosis.

Other treatment

- Uterine artery embolization **(UAE)**, and the results far have been disappointing

- the progesterone-containing IUD **(Mirena)** can help with dysmenorrhea in about **70% of women.**
- The IUD probably works because it slowly gives off progesterone directly to the lining cells in the uterus and in the uterine muscle wall.