

# Difference Between Endometriosis and Endometrial Cancer

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## Key Difference – Endometriosis vs Endometrial Cancer

Endometriosis and endometrial cancer are two conditions that due to the pathological derangement of the tissues that make the uterus. Presence of endometrial surface epithelium and/or the endometrial glands and stroma outside the lining of the uterine cavity is called the endometriosis. Endometrial cancers are the malignancies that arise in the endometrium. The key difference between endometriosis and endometrial cancer is that **endometriosis a benign condition whereas endometrial cancers are malignancies that can have life-threatening complications.**

## What is Endometriosis?

The presence of endometrial surface epithelium and/or the endometrial glands and stroma outside the lining of the uterine cavity is called the endometriosis. The incidence of this condition is high among women who are between 35-45 years of age. Peritoneum and ovaries are the commonest sites that are affected by endometriosis.

## Pathophysiology

The exact mechanism of pathogenesis has not been understood. There are four main widely accepted theories.

- **Menstrual Regurgitation and Implantation**

During the menstruation, some viable endometrial glands can move in a retrograde direction instead of moving out through the vaginal tract. These viable glands and tissues get implanted on the peritoneal surface of the endometrial cavity. This theory is strongly supported by the high rate of incidence of endometriosis among women with abnormalities in the genital tract which facilitate the retrograde movement of the menstrual substances.

- **Coelomic Epithelium Transformation**

Most cells that line different regions of the female genital tract such as Mullerian ducts, peritoneal surface and ovaries have a common origin. The theory of coelomic epithelium transformation suggests that these cells redifferentiate into their primitive form and then transform into the endometrial cells. These cellular redifferentiations are thought to be triggered by various chemical substances released by the endometrium.

- **Influence of Genetic and Immunological Factors**
- **Vascular and Lymphatic Spread**

The possibility of endometrial cells migrating to distant sites from the endometrial cavity via blood and lymphatic vessels cannot be excluded.

In addition, iatrogenic causes such as surgical implantation and digoxin exposure also account for an increasingly high number of endometriosis causes.

## **Ovarian Endometriosis**

Ovarian endometriosis can occur either superficially or internally.

### **Superficial Lesions**

Superficial [lesions](#) usually appear as burn marks on the surface of the [ovaries](#). There are numerous hemorrhagic lesions on the surface that give rise to this characteristic appearance. These lesions are commonly associated with the formation of adhesions. Such adhesions formed on the posterior aspect of the ovary results in its fixation to the ovarian fossa.

### **Endometrioma**

Endometriotic [cysts](#) or the chocolate cysts of the ovaries are filled with characteristic dark brown colored substances. These cysts originate on the surface of the ovary and gradually invaginate into the cortex. Endometriotic cysts can rupture releasing their contents out, resulting in the formation of adhesions.

### **Pelvic Endometriosis**

Uterosacral ligaments are the most commonly affected structures by this condition. The ligaments can get nodular tender and thicken due to the implantation of the endometrial tissues.

### **Rectovaginal Septum Endometriosis**

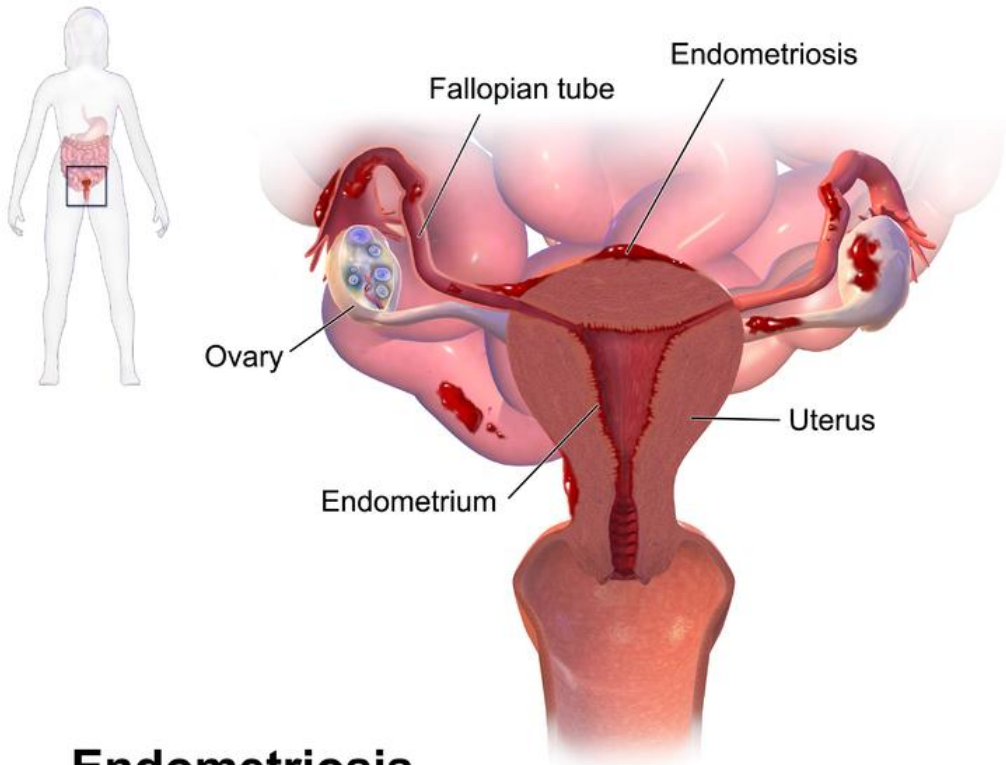
Endometrial lesions in the uterosacral ligaments can infiltrate the rectovaginal septum. After their migration to the rectum, these endometrial tissues form dense adhesions that ultimately result in the complete obliteration of the pouch of Douglas. Dyspareunia and alteration of the bowel habits are the common symptoms of rectovaginal endometriosis.

### **Peritoneal Endometriosis**

This includes the powder burn type lesions appearing on the peritoneum.

### **Deep Infiltrating Endometriosis**

The infiltration of the endometrial glands and stroma more than 5cm below the peritoneal surface is identified as the deep infiltrating endometriosis. This causes a severe pelvic pain and dyspareunia. Painful defecation and dysmenorrhea are the other symptoms of deep infiltrating endometriosis.



## Endometriosis

### Symptoms of Endometriosis

- Congestive dysmenorrhea
- Ovulation pain
- Deep dyspareunia
- Chronic pelvic pain
- Lower sacral backache
- Acute abdominal pain
- Subfertility
- Menstrual abnormalities such as oligomenorrhea and menorrhagia

### Symptoms of Endometriosis at Distal Sites

- Bowel – per rectal bleeding, cyclical painful defecation, and dyschezia
- Bladder – dysuria, hematuria, frequency, and urgency
- Pulmonary – hemoptysis, hemopneumothorax
- Pleura – pleuritic chest pain, shortness of breath

### Diagnosis

Diagnosis is mainly based on the classic symptoms.

## Investigations

- CA 125 level- is increased in endometriosis
- Anti-endometrial antibodies in serum and peritoneal fluid
- Ultrasonography
- MRI
- Laparoscopy – this is the gold standard test for the diagnosis of endometriosis
- Biopsy

## Management

The management of a patient with endometriosis depends on four main factors

- Woman's age
- Her desire for pregnancy
- Severity of the symptoms and the extent of the lesions
- Results of previous therapy

### Medical Management

- Analgesics can be given for the pain relief
- Hormonal therapy with contraceptive agents, progesterone, GnRH and etc.

### Surgical Management

- Conservative surgery (i.e.. either laparoscopy or laparotomy)
- Corrective surgical interventions such as adhesiolysis, partial excision of adenomyotic tissues and tubal flushing with oil-soluble media

### Curative Surgery

- This is performed only when the patient's family is complete or in severe progressive endometriosis.

## What is Endometrial Cancer?

Endometrial cancers are the malignancies that arise in the endometrium. [Adenocarcinomas](#) are the commonest type of endometrial cancers.

There are two main forms of endometrial adenocarcinomas as,

- Type 1 – these cancers are estrogen dependent and mostly occur in young women. They usually have a good prognosis.

- Type 2 – type 2 endometrial carcinomas are mostly seen in old women and are not estrogen dependent. This makes their prognosis much poorer than that of type 1 carcinomas.

## **Etiology**

The exact mechanism of pathogenesis of endometrial cancers is still unclear. But there is a strong correlation between the increased level of estrogen and the incidence of endometrial cancers.

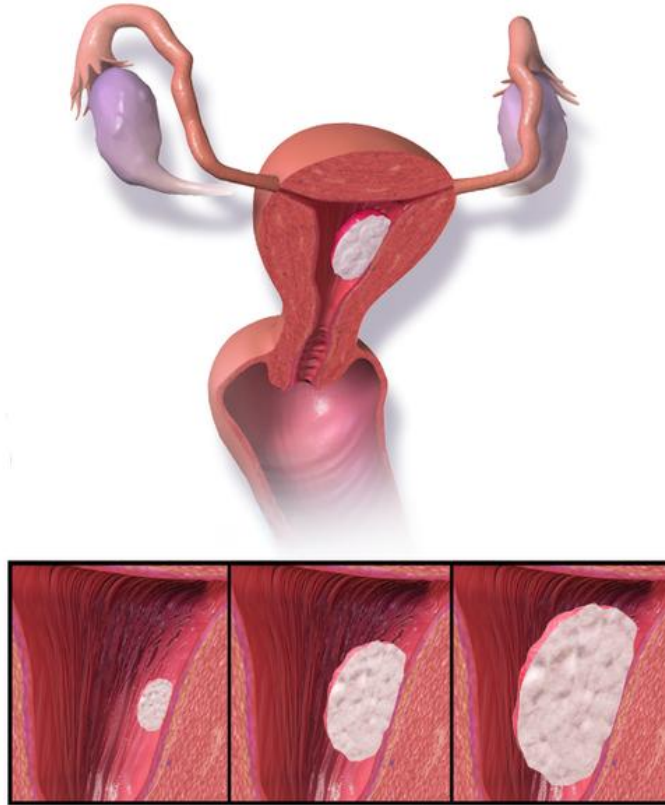
## **Risk Factors**

- [Obesity](#)
- [Diabetes](#)
- Nulliparity
- Late [menopause](#) (>52 years)
- Unopposed estrogen therapy
- Hormone replacement therapy
- Family history of colorectal or ovarian cancers

The use of oral contraceptive pills or progesterone only pills greatly reduces the risk of endometrial cancers.

## **Clinical Features**

- Abnormal vaginal bleeding is the commonest clinical presentation. This can be either a post-menopausal bleeding or an irregular vaginal bleeding.
- In the premenopausal women, there can be symptoms such as intermenstrual bleeding, blood-stained vaginal discharge, heavy menstrual bleeding, lower abdominal pain or dyspareunia.
- In the advanced disease, the patient can present with other systemic manifestations such as fistula, bony metastases, abnormal liver function or respiratory symptoms.
- During the speculum examination of the cervix, there can be bleeding from the cervical walls.
- Bimanual examination of the uterus reveals the presence of an enlarged uterus.



**Figure 02: Stages of Endometrial Cancer**

## **Diagnosis**

The mainstays of diagnosis are,

- Ultrasound scanning
- Endometrial biopsy
- Hysteroscopy
- MRI is carried out following a diagnosis of endometrial cancers to identify the presence of metastatic lesions.

## **Staging of Endometrial Carcinomas**

1	<b>Confined to the uterine body</b>
1a	Less than 50% invasion
1b	More than 50% invasion
2	<b>Tumor invading cervical stroma</b>
3	<b>Local and regional spread of the tumor</b>
3a	Invades serosa of the uterus
3b	Invades vagina and/or parametrium
3c	Metastases to pelvic and/or para aortic nodes
4	<b>Presence of distant metastases</b>

## Management

- Surgical removal of all the malignant lesions is the most commonly undertaken intervention in the management of endometrial carcinomas. The standard surgery carried out in this procedure is called the total hysterectomy and bilateral salpingectomy.
- Postoperative radiotherapy is used as an adjuvant treatment.

## Prognosis

The prognosis of endometrial cancers varies according to the stage of disease progression as shown below.

Stage	5-year survival (%)



I	88
II	75
III	55
IV	16

## What is the Similarity Between Endometriosis and Endometrial Cancer?

- Both conditions are diseases of the endometrial tissues.

## What is the Difference Between Endometriosis and Endometrial Cancer?

### Endometriosis vs Endometrial Cancer

Presence of endometrial surface epithelium and/or the endometrial glands and stroma outside the lining of the uterine cavity is called the endometriosis.

Endometrial cancers are the malignancies that arise in the endometrium.

#### Severity

This is a benign condition.

This is a malignant condition.

#### Pathogenesis

Genetic and immunological factors play a key role in the pathogenesis of endometriosis. Surgical implantation

The increased level of estrogen has a strong correlation with the incidence of endometrial cancers. Therefore obesity, diabetes, nulliparity, late menopause (>52

and digoxin exposure are the major iatrogenic causes.

years), unopposed estrogen therapy, hormone replacement therapy, family history of colorectal or ovarian cancers are the main risk factors.

## Clinical Features

The major clinical features are,

- Congestive dysmenorrhea
- Ovulation pain
- Deep dyspareunia
- Chronic pelvic pain
- Lower sacral backache
- Acute abdominal pain
- Subfertility
- Menstrual abnormalities such as oligomenorrhea and menorrhagia

Abnormal vaginal bleeding is the commonest presentation. In the premenopausal women, there can be heavy vaginal bleeding, intermenstrual bleeding, and a blood-stained vaginal discharge. In some cases, there can be dyspareunia and a lower abdominal pain.

## Diagnosis

Diagnosis is mainly based on the classic symptoms

In doubtful situations, the following investigations can be performed to exclude the other possible causes.

- CA 125 level- is increased in endometriosis

The mainstays of diagnosis are,

- Ultrasound scanning
- Endometrial biopsy
- Hysteroscopy
- MRI is carried out following a diagnosis of endometrial cancers to identify the presence of

- Anti-endometrial antibodies in serum and peritoneal fluid

- Ultrasonography

- MRI

- Laparoscopy – this is the gold standard test for the diagnosis of endometriosis

- Biopsy

metastatic lesions.

## Management

### Medical management

- Analgesics can be given for the pain relief

- Hormonal therapy with contraceptive agents, progesterone, GnRH and etc.

### Surgical Management

- Conservative surgery (i.e.. either laparoscopy or laparotomy)

- Corrective surgical interventions such as adhesiolysis, partial excision of adenomyotic tissues and tubal flushing with oil-soluble media

- Curative surgery is carried out only when the patient's family is complete or in severe progressive

Surgical removal of all the malignant lesions is the most commonly undertaken intervention in the management of endometrial carcinomas. The standard surgery carried out in this procedure is called the total hysterectomy and bilateral salpingectomy. Postoperative radiotherapy is used as an adjuvant treatment.

## Summary – Endometriosis vs Endometrial Cancer

Endometrial cancers are the malignancies that arise in the endometrium. The presence of endometrial surface epithelium and/or the endometrial glands and stroma outside the lining of the uterine cavity is called the endometriosis. The main difference between endometriosis and endometrial cancer is that endometriosis is a benign condition whereas endometrial cancers are malignancies that can have life-threatening complications.

### References:

1. Monga, Ash K., and Stephen P. Dobbs. *Gynaecology by ten teachers*. London, Hodder/Arnold, 2011.

### Image Courtesy:

1. “Blausen 0349 Endometriosis” By BruceBlaus. “Medical gallery of Blausen Medical 2014”. WikiJournal of Medicine 1 (2). DOI:10.15347/wjm/2014.010. ISSN 2002-4436. – Own work ([CC BY 3.0](#)) via [Commons Wikimedia](#)
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