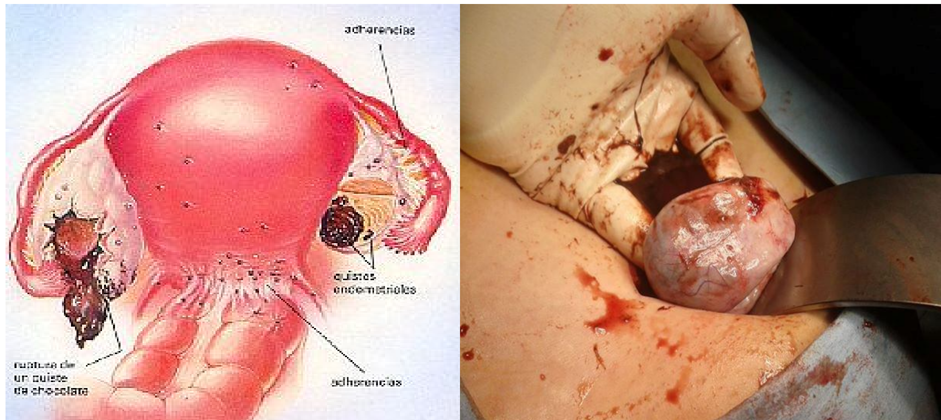
Endometriosis

What is endometriosis?

Endometriosis is a common condition in young women. It's chronic, painful, and it often progressively gets worse over the time.



*Chocolate cyst in the ovary

Normally, the tissue that lines a woman's uterus, known as the endometrium, is found only in the uterus. But when a woman develops endometriosis, microscopic bits of this tissue escape from the uterus and grow on other organs such as the ovaries, the outer wall of the uterus, the ligaments that support the uterus, and the space between the uterus and the rectum. In rare cases, they can spread outside the abdomen and grow on other organs, such as the lungs.
Just like the endometrium, the escaped tissue responds to the hormones estrogen and progesterone by thickening and may bleed every month. But because the escaped tissue is growing in other tissues, the blood it makes cannot escape. This causes irritation to the surrounding tissue, which causes **cysts, scars, and the fusing of body tissues**. This can eventually bind the reproductive organs together and lead to **infertility**.

How Common is Endometriosis?

The studies showed that about 10% of young women of reproductive age are affected by endometriosis and it is seen in 25%-35% of infertile women. About 40%-60% of women suffering from pelvic pain have endometriosis. The onset of disease is commonly at adolescence age and the symptom progressively become severe throughout the years. Symptoms usually get better after menopause.

What Causes Endometriosis?

There are many scientific theories of what cause endometriosis but the researchers don't know exactly why or how endometrial tissue reaches other parts of the body. One of the most accepted theory is retrograde menstruation or backflow of menstrual blood into the abdomen. As a result of endometrial tissue escaped into the peritoneum, there is a local intense pelvic inflammatory process is taken place in the body (depending on one's immune system response) that cause chemical reactions that brings about pain, scarring bleeding and fusion of surrounding tissues. As a consequence it affects fertility, menstruation and causing chronic pelvic pain.

There are some trends. Endometriosis tends to run in families. Endometriosis occurs more often in women who have short menstrual cycles or a longer-than-normal flow: Women who have fewer than 25 days between periods or who menstruate for more than seven days are twice as likely to develop endometriosis.

Stages and Scoring of Endometriosis

The severity of endometriosis can be classified as minimal, mild, moderate, or severe, depending on the size of the lesions and how deeply they reach into the other organs. It can also be classified at laparoscopic examination as Stage 1 being the mildest and Stage 4 being the most severe form.

Severity Scoring

- Stage I (minimal) 1 – 5.
- Stage II (mild) 6 – 15.
- Stage III (moderate) 16 – 40.
- Stage IV (severe) > 40.

EXAMPLES & GUIDELINES

STAGE I (MINIMAL)

PERITONEUM
Superficial Endo – 1-3cm - 2
R. OVARY
Superficial Endo – < 1cm - 1
Filmy Adhesions – < 1/3 - 1
TOTAL POINTS 4

STAGE II (MILD)

PERITONEUM
Deep Endo – > 3cm - 6
R. OVARY
Superficial Endo – < 1cm - 1
Filmy Adhesions – < 1/3 - 1
L. OVARY
Superficial Endo – < 1cm - 1
TOTAL POINTS 9

STAGE III (MODERATE)

PERITONEUM
Deep Endo – > 3cm - 6
CULDESAC
Partial Obliteration - 4
L. OVARY
Deep Endo – 1-3cm - 16
TOTAL POINTS 26

STAGE III (MODERATE)

PERITONEUM
Superficial Endo – > 3cm - 4
R. TUBE
Filmy Adhesions – < 1/3 - 1
R. OVARY
Filmy Adhesions – < 1/3 - 1
L. TUBE
Dense Adhesions – < 1/3 - 16*
L. OVARY
Deep Endo – < 1 cm - 4
Dense Adhesions – < 1/3 - 4
TOTAL POINTS 30

STAGE IV (SEVERE)

PERITONEUM
Superficial Endo – > 3cm - 4
L. OVARY
Deep Endo – 1-3cm - 32**
Dense Adhesions – < 1/3 - 8**
L. TUBE
Dense Adhesions – < 1/3 - 8**
TOTAL POINTS 52

*Point assignment changed to 16
**Point assignment doubled

STAGE IV (SEVERE)

PERITONEUM
Deep Endo – > 3cm - 6
CULDESAC
Complete Obliteration - 40
R. OVARY
Deep Endo – 1-3cm - 16
Dense Adhesions – < 1/3 - 4
L. TUBE
Dense Adhesions – > 2/3 - 16
L. OVARY
Deep Endo – 1-3cm - 16
Dense Adhesions – > 2/3 - 16
TOTAL POINTS 114

There seems to be no direct relationship between the size of lesions and the severity of pelvic pain. Some women with small lesions have terrible pain, while others with large lesions have no symptoms. Pain probably comes from the scarring and irritation caused by bleeding, or from endometrial tissue growing on a nerve.

However the stage of disease may correlates well with fertility prognosis.

What Are the Symptoms of Endometriosis?
Endometriosis symptoms vary, and some women have no symptoms.

Chronic pelvic pain, period pain and infertility are the most common symptoms. In women who are able to conceive, symptoms may get better during pregnancy, but they may return after having the baby.

Here are other symptoms:

- Irregular periods. In 15%-20% of cases there is premenstrual spotting.
- Heavy and prolonged periods
- Dysmenorrhoea - Period pain or cramps that gets worse during menstruation
- Dyspareunia- Pain during sex.
- Chronic pelvic pain (pain lasting over six months).
- Bloating, cramping, and changes in bowel movements.

Endometriosis in Adolescent
There are many studies have shown that the onset of endometriosis can be as early as at adolescent age between the age 11- 20 years old especially for those who have obstructed anomalies of the reproductive organ. Pelvic and period pain is the most common symptom of endometriosis in adolescent. However the symptom of pain is not specific or does not guarantee there is endometriosis.

There are many other causes of pelvic and menstrual pain in young women. The other causes of pelvic pain are:

- *Chronic Pelvic Inflammatory Disease (PID)*
- *Irritable Bowel Syndrome*
- *Crohn's disease*
- *Interstitial cystitis*

Late Diagnosis of Endometriosis in Adolescent is Common
Most of young women with menstrual pain, the diagnosis of endometriosis is often overlooked or diagnosed very much delayed later on. Among the reason for the delay in diagnosis and treatment of endometriosis is because the symptom of menstrual pain is often normalized by the patient, their family and even the doctor as normal menstrual pain that would disappear after childbearing.

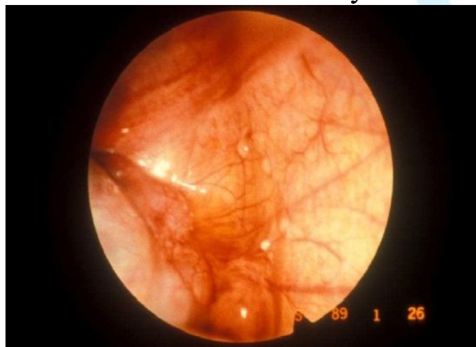
The impact of delay in diagnosis is detrimental physically and emotionally to young women because endometriosis is a progressive disease that increasing inflammatory reaction would cause further damage to the reproductive organ. As a consequence of delayed treatment, there will be scar formation, altered ovarian function, formation of chocolate cyst in the ovary and seriously affect childbearing potential later on.

How is endometriosis diagnosed?
Apart from the clinical signs and symptoms, **ultrasound of the pelvis** in particular transvaginal ultrasound, **MRI and tumour marker Ca125** may be useful in diagnosis in advance stage endometriosis. However early stage or mild to moderate endometriosis are often undetectable by this method.

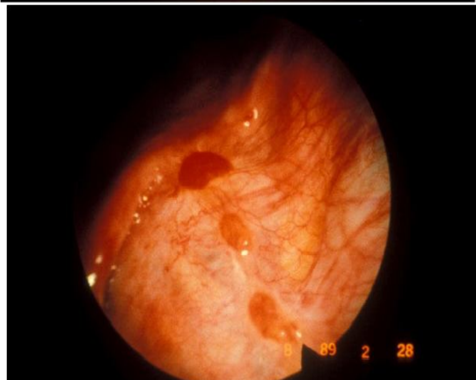
Diagnostic laparoscopy is a gold standard procedure used to diagnose and detect endometriosis. It allows the doctor to do direct inspection and visualization of the pelvic organs for any evidence of endometriotic lesion or implant. Biopsy for histological confirmation can also be taken during laparoscopy. However the effectiveness of this procedure in diagnosing endometriosis is very much depending on the nature of the disease and the skill of the doctor. A study has shown that almost 50% of women with pelvic pain undergoing laparoscopy are diagnosed as normal pelvis

How is endometriosis look like at laparoscopy?

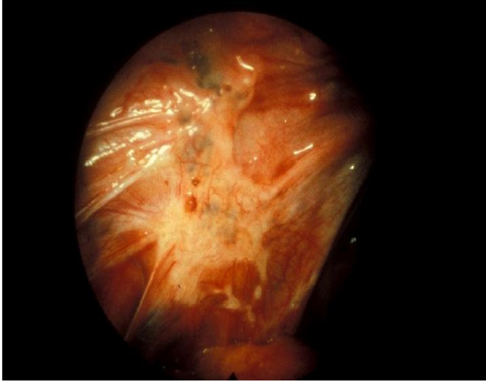
- Appearance of endometriotic lesion
  - Brown
  - Black powder burn
  - Red
  - White
  - Clear
  - Chocolate cyst



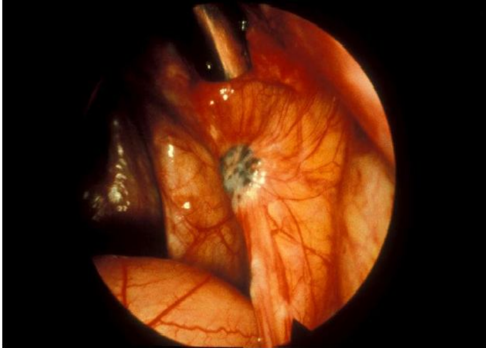
Clear Lesion – like a blister; common in early endometriosis



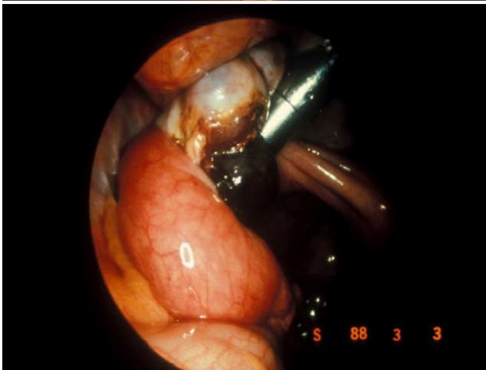
Red Lesion-early endometriosis



White lesion - deep endometriosis with scarring



Powder burn lesion - deep endometriosis



Chocolate Cyst of the ovary- severe endometriosis

What are the treatment options available for endometriosis?
The aim of treatment of endometriosis is to control symptom, to restore the anatomy of reproductive organs from adhesion and to protect future fertility potential.

There are few options available to treat endometriosis:
Painkillers (PCM, NSAIDS, Cox2 Inhibitors) : Painkiller may be prescribed to control pain symptom either by tablet or injection to relief severe pain.

Hormones (Birth control pills, Progestin, Danazol, Gestrinone)- Hormone is useful to control pain symptom and reduce menstrual blood loss in long term. However if the patient is keen to have a pregnancy, hormone treatment is not a suitable option. Danazol is an old drugs which is effective to treat endometriosis but it side effects (acne, oily skin, change of voice, weight gain) often cannot be tolerated by many.
Levonogestrel Intra-Uterine System (MIRENA IUS) – MIRENA IUS is a hormonal intrauterine device which can be placed into the uterine cavity. It releases 20ug levonogestrel a day into the uterine cavity for 5 years and thins the lining of the uterus. As a result, it significantly prevents pregnancy and reduces menstrual blood loss. Study has shown it also effective in controlling pain symptom due to endometriosis in some patients who are also looking for birth control. It has least side effect because the released hormone only act locally and it does not get absorbed into the blood stream. Mirena is highly effective at preventing pregnancy, over 99% for up to five years after insertion.

GnRH injection (Zoladex, Lucrin)- GnRH injection for 3 – 6 months is effective to control symptoms of pain and heavy menstrual bleeding in endometriosis. However it is not permanent that the symptom may return soon after the injection is stopped. GnRH injection is usually given as an additional therapy after surgical removal of endometriosis lesion for longer remission period and it is also been reported to improve the likelihood of pregnancy within 6 month to 1 year after the course is completed.

Surgery (Open surgery, laparoscopy, hysterectomy). There are two options: surgery to remove the endometrial tissue growing outside the uterus, or a hysterectomy (removal of the uterus and ovaries). Laparoscopic surgery to remove endometriotic tissues outside the uterus is far better than an open surgery as the doctor could visualize the endometriotic lesion far better due to magnification of the tissue. Studies also have shown that laparoscopic resection of the endometriotic tissue improves fertility as it cause less damage to the delicate tissue. However this procedure is associated with higher complication (bowel and ureter injury) especially in deep/severe endometriosis and in inexperienced hand.
For older women who have completed their family, hysterectomy and removal of the ovaries may be recommended if the patient have persistent pain that all medical treatment has failed.