

Enigma of Endometriosis- Diagnosis and Management Dilemma

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Received Date : November 22, 2023
Accepted Date : December 06, 2023
Published Date : December 13, 2023
Archived : www.jcmimagescasereports.org
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Abstract

Thomas Cullen was the first to describe endometriosis and adenomyosis as one disease characterized by the presence of endometrium-like tissue outside the uterine cavity. With the introduction of laparoscopy in the early 1960s three different clinical presentations of endometriosis were described namely i) peritoneal, ii) deep adenomyotic and iii) cystic ovarian. Endometriosis is a disease in which endometrial tissue of the uterus grows outside the uterus, usually in abdominal cavity, and leads to either endometriosis or endometrial hyperplasia, in women, sometimes even after menopause.

Endometriosis is a chronic disease associated with severe, life-impacting pain during periods, sexual intercourse, bowel movements and/or urination, chronic pelvic pain, abdominal bloating, nausea, fatigue, and sometimes depression, anxiety, and infertility. It affects roughly 10% (250 million) of reproductive age women and girls globally. Reproductive age group not only constitutes a large group, but they are also a vulnerable or special risk group. In India endometriosis is estimated to bother about 42 million women in their lifetime. Using the proteomics approach, anti-endometrial antibodies (AEAs - tropomyosin 3 (TPM3), stomatin-like protein2 (SLP-2), and tropomodulin 3 (TMOD3)) were detected in Indian women with endometriosis. The studies on AEAs provided a better understanding of autoimmune mechanisms in endometriosis in recent years. All three subtypes of endometriosis; superficial peritoneal, ovarian endometrioma, and deep infiltrating endometriosis were reported in Indian women.

There is currently no known cure for endometriosis and treatment is usually aimed at controlling symptoms. Obstetricians started using Synthetic steroids as a medical treatment. While medical therapy gives relief in some, in most cases a combination of medical and surgical therapy is being used in the last one decade.

More than one thirds of endometriosis cases occur after menopause, a space that is the most underserved aspect of traditional health care even by gynaecologists, as they typically deal with reproduction. There are estimated 150 million women {the Indian Menopause Society (IMS), India} as against 1 million women in USA, and 40% of such women (60 million in India and 400,000 in USA) have menopause symptoms, that disrupt their work performance. In India hardly 10% of women access services only when the conditions become severe and not amenable to medical management. Therefore, access to early diagnosis and effective treatment of endometriosis is important public health responsibility of the state. However, it is limited in many settings, worst in low- and middle-income countries.

Materials and Methods: This article is based on managing with requisite specialists' consultations and surgical interventions of three different varieties of endometritis cases in the last 2 years, supported by literature research and global good practices of managing endometritis.

Keywords: Endometrium, Endometritis, Endometrial hyperplasia, Endometrial adenocarcinoma, Hormone therapy (HRT) Progesterone, Oestrogen, Salpingectomy, Salpingo-Oophorectomy, Oophorectomy, Hysterectomy, Total Hysterectomy with Salpingo-Oophorectomy.

Citation: Suresh K. Enigma of Endometriosis- Diagnosis and Management Dilemma. J Clin Med Img Case Rep. 2023; 3(6): 1599.

Introduction

The endometrium is the tissue that lines internal surface of the uterus and is made up mostly of mucosal tissue in two layers. The first layer, called stratum basalis, attaches to the layer of smooth muscle tissue (myometrium) of the uterus and serves as an anchor for the endometrium and stays relatively unchanged. The second layer called the stratum functionalis, is dynamic as it changes in response to the monthly flux of hormones that guide the menstrual cycle. It's the part of the endometrium where a fertilized egg will implant if conception occurs. This mucous membrane thickens in anticipation of a possible pregnancy in each menstrual cycle. If a fertilized egg is implanted, the lining stays in place. If not, it thins and sheds as a menstrual period. During menstruation endometrium appears as a thin, echogenic line of 1–4 mm in thickness and in the proliferative phase of cycle (day-5–14), it develops a trilaminar and measures 12–13 mm and further to 10–16 mm at ovulation [1].

Endometriosis is a condition when the endometrial lining deposits outside of the lining of the uterus, can grow under hormonal influence, wherever it is displaced like on the ovaries, fallopian tubes, or tissue that lines the pelvis, and the blood and tissue have nowhere to exit the body and become trapped. When it breaks down it sheds as if the person is menstruating even after menopause. Sometimes, endometriosis can lead to cysts on the ovaries called endometriomas, as well as scar tissue and adhesions that cause structures in the pelvis to stick together [2].

Prevalence estimates of the disease in clinic populations vary from about a 4% of asymptomatic endometriosis in women undergoing tubal ligation to 50% among teenagers with dysmenorrhea. It has a prevalence of 0.5-5% in fertile and 25-40% in infertile women. Endometriosis is a public health disorder affecting ~247 million women globally and ~42 million women in India [2]. All three phenotypic subtypes of endometriosis; superficial peritoneal, ovarian endometrioma, and deep infiltrating endometriosis are being reported in Indian women. Quiet often women with endometriosis have no symptoms, but some women suffer from dysmenorrhea, chronic pelvic pain, dyspareunia, dyschezia, fatigue, depression, and infertility leading to significant morbidity and socioeconomic impact. It can start at a girl's menarche and last until menopause or manifest after menopause. Neither the cause nor the ways to prevent or cure are known [3, 4].

Endometriosis was first described by Rokitsansky in Vienna in 1860 and was later given the name endometriosis by Sampson in 1925. Thomas Cullen was the first to describe endometriosis and adenomyosis as one disease characterized by the presence of endometrium-like tissue outside the uterine cavity. With the introduction of laparoscopy in the early 1960s three different clinical presentations of endometriosis were distinguished into three phenotypes: superficial peritoneal, deep adenomyotic (DE) and cystic ovarian. Deep endometriosis (DE) has been associated with more severe pain symptoms

and infertility. The identification of endometriosis and its management has been a subject of debate over the last 2 decades. Pioneering Obstetricians started using Synthetic steroids to replace radical surgery by a medical treatment. While hormonal therapy gives relief to some, in most cases a combination of hormonal & surgical therapy is more successful [4]. Therefore, it is important to diagnose as early as possible and treat for prevention of complications. While the pathogenesis of endometriosis is still enigmatic and complex, there is increasing evidence that endometriosis is part of a uterine reproductive dysfunction syndrome and is a transitional form from benign disease to tumour, though the mechanism of this conversion is not yet established [5]. This article is based on three cases of different manifestations of endometriosis facilitated by this author since 2021 and as recent as months of September to November 2023.

Case reports

Endometriosis from Menarche

One of my mentored MPH scholars now aged 28 years, struggled to get diagnosed and attended for over a decade. In 2010, at age 15, she began experiencing heavy menstrual bleeding, severe menstrual cramp, and dyschezia with menarche menstruation. Between 2010-2020 (ages 15-25), She was treated with a variety of progesterone-only oral contraceptive pills (OCPs) for five years and then a low-dose Oestrogenic-progesterone combination pill for another 5 years, but none of them controlled pain or menorrhagia, though they gave some relief. Combined hormone therapy had to be stopped as she developed migraine flare with headaches and nausea without much symptomatic relief. The she was advised to take non-steroidal anti-inflammatory drugs (NSAIDS) during menstruation for pain. In 2014, an episode of syncope led her to seek further evaluation, when she was found to have iron-deficiency anaemia with a haemoglobin of 8.0G/DL and was started on Weekly injectable iron. The tests for a panel of bleeding disorders were negative. In 2016, She consulted an Obstetrician who recommended a diagnostic laparoscopy, but did not get done due to ear and financial constraints. In 2020, while in her second year of Nursing course, her pelvic pain not only increased dramatically, but also became intermenstrual and more diffuse, spreading to her lower back and thighs. She also noticed a lower abdominal mass and sought a gastroenterologist's opinion of the medical college Hospital, where she was training. He ordered a pelvic ultrasound (USG), which showed complex cystic masses on both ovaries. An exploratory laparoscopy was done, and a stage IV endometriosis was diagnosed as endometriotic tissue was found on the anterior abdominal wall, bilateral ovaries, vaginal wall, appendix, bladder, bowel, rectum, and diaphragm. The ovaries were repaired with good anastomosis and haemostasis and was subsequently treated with leuprolide and progesterone for a year. The doctors alerted her to get married early and try to have a child as her fertility period will be short and possible

recurrence in 3-5 years. She got married and has a child of 1 year now.

Nulliparous Women with Hip Pain

A 35-year-old nulliparous woman presented to the orthopaedic clinic with continuous right hip pain, exacerbated by hip adduction and flexion. Her medical and surgical history was unremarkable. She had discontinued combined oral contraceptive pill 4 years prior to presentation after 5 years of use. Orthopaedic examination was normal. There was a 2x3 cm tender tense swelling lateral and superior to the pubic tubercle in the right groin. The patient had been aware of the lump for 1 year and said the size was unchanged over 6 months. Genital tract examination was normal.

Full blood count, inflammatory markers and CA125 (10 IU/mL) were normal. HIV was negative. Ultrasound (US) demonstrated a hypoechoic lesion with some internal flow on colour Doppler. MRI of the pelvis showed a soft tissue mass intimately related to round ligament. Transvaginal ultrasonogram of pelvis was normal.

Fine-needle aspiration of the lesion revealed endometrial gland tissue.

Diagnostic laparoscopy showed mild endometriosis on the uterosacral ligaments. The groin lesion was excised intact with an attached portion of round ligament through a small inguinal incision. Histopathology confirmed a focus of endometriosis within the round ligament. She was pain free at follow-up. She was planning to conceive soon.

Recurrent Endometriosis as Huge Ovarian Cyst

Pragati a 45-year-old lady complained of abdominal distension for the last 3 months and started having post-menopausal bleed since March 2023, 4 years after the menopause. She sought the opinion of a gynaecologist on 12th September 2023, as she started getting exhausted during her routine Badminton games for 3 months along with abdominal distension. Gynaecologist's report read- the lady short, a bit overweight, but pleasing personality. The abdominal bloating was visible more to the left side. Basic investigations done were- Complete Blood count (CBC), Pap smear and CT scan of abdomen and Pelvis were done. Results were:

1. CBC indicated Leucocytosis 11.65cell/microliter (normal=4-10), Lymphocytes 44% (N=40%), Hb%=12.4 g/Dl (N=12-5). CA-125-68, CEA-2.4 CA 19-9:240, Serum Albumin 4.2mg/Dl, Glibulin-2.7 g/Dl Alb; Glob Ratio=1.6

2. PAP smear: Cervix bled minimal on touch. Microscopy saw - Plenty of Coccobacilli and clue cells were seen. No epithelial cell abnormalities were reported.

3. USG & CT scan -Abdomen and Pelvis 914/09/23): USG revealed large left adnexal cyst more in favour of Ovarian malignancy. CT scan of abdomen and Pelvis revealed large (127 X 154 X 191 mm sized) ovarian neoplasm. A complex predominantly cystic lesion with multiple thick enhancing internal septations in the pelvis and lower abdomen. No Ovaries were seen. Uterus size was normal. All other abdominal organs were normal. Posterior -displacement and compression of the left lower ureter by the pelvic lesion, causing mild left obstructive hydronephrosis, with no significant enlargement

lymph nodes or ascites.

History: Married life for 22 years and a daughter of 20 years old. She had undergone Right partial Ovariectomy and Salpingectomy and Left salpingo-oophorectomy for endometriosis in 2012. The current condition was provisionally diagnosing as recurrent endometritis ovarian cyst and possible malignancy. An exploratory Laparotomy was recommended in a facility with Frozen section histopathology facility, to go for extended surgical dissection if needed.

The family had to change 2 hospitals in search of a facility, with a surgical team of an Obstetrician, a General cum Laparoscopic surgeon, an Onco-surgeon, and an anaesthetist to handle expected extensive adhesion and back-end team of Physician, radiologist and histopathologist with frozen section examination facility. First anterior abdominal wall opened in layers, a large solid cyst noted with dense extensive adhesions completely distorting the anatomy. Gradual dissection done and ovarian mass in left adnexa (18x13x12 cm) was removed and sent for frozen section. The cyst had to be drained partially of thick brownish haemorrhagic fluid. Then the posterior rectal adhesions to uterus were released and ovary were dissected with great difficulty separating the adhesions by both surgeons and the gynaecologist and were also sent for histopathology. The summary of surgery reads Exploratory Laparotomy +Extensive adhesiolysis + Left Ovary Cyst removal +Frozen section + Total abdominal Hysterectomy under spinal Anaesthesia.



Figure 1: The cyst 1/3 of original size after removal of fluid.



Figure 2: Uterus & Ovary.

The Histopathology report

1. Frozen section: Benign endometrial cyst- received in an hours' time to limit surgical intervention to releasing adhesions and removal of utters and the Cyst.
2. The Uterus and Cervix revealed i) Endocervical lining sowing papillary hyperplasia with focal squamous metaplasia. There was no evidence of dysplasia or Malignancy in sections studied.

Final Diagnosis: Endometrioid Cyst Adenofibroma

Post-operative recovery was uneventful. The abdominal suture was removed in two stages on days 10 and 16 after surgery and the recovery was with no post-operative complications. Pragati has fully recovered after 4 weeks. As of today, 15 November 2023, she is doing fine.

A case of Atypical endometrial Hyperplasia (AEH)

A 35-year-old woman presented to a Govt. Medical College Hospital, (GIMS) in March 2021, with Complaints of distension of lower abdomen for 6 months & irregular vaginal bleeding for 1 year. On physical examination the patient was nulliparous and overweight (body mass index = 30.2), with a 15-year history of primary infertility. History: Her age at menarche was 14 years, and the menstrual period lasted for 6 days. She got married at 20-years. Personal history revealed limited sexual activity (intercourse 1-2 times a month in first 2 years after marriage and once-twice a quarter later in recent years, as her husband used to be on travel for work). She reported irregular spotting or vaginal bleeding for 2 years but did not consult any doctor. In September 2020, she felt a mass in lower abdomen over pubic symphysis when lying flat, without any pain or tenderness. By February 2021, the mass increased in size, and she started experiencing lower abdominal pain and discomfort, that brought her to hospital.

There was no significant history of past illnesses like hepatitis, tuberculosis, typhoid fever, hypertension, diabetes, coronary heart disease, or any other chronic diseases. Born in the neighbouring district of Koppal, she did not smoke or indulged in alcohol drinking. Her occupation was housewife, no opportunity of a contact with toxic chemicals, poisons, or radioactive substances. She reported her experience of sexual frequency in recent years as approximately every quarter with her husband. On taking in confidence, she denied any extra-marital sex or using contraception and confirmed never having been pregnant.

Physical examination: Her gynaecological examination revealed an enlarged uterus with a size of 20 weeks pregnancy, and the uterine wall was relatively hard but not tender.

Laboratory examinations: Her WBC count was $7.5 \times 10^9/L$, neutrophils of 64%, Hb%= 11.0 g/DL, platelet count of $375 \times 10^12/DL$, and HCG level of 1.91 IU/DL.

Imaging: A Transvaginal Sonography (TVS) and MRI of the intrauterine cavity revealed a lump of 9 cm diameter with a partial honeycomb-like appearance. As MRI revealed abnormal signal (8 cm \times 9 cm \times 10 cm), a provisional diagnosis of

hydatidiform mole made.

Intervention: A dilatation and Curettage was performed. The intrauterine tissue was soft, and no typical phenotype of a hydatidiform mole was sent to Histopathology test.

Histopathology: The histopathological examination showed an abnormal epithelial structure and inhomogeneous nuclei, typical of AEH.

Treatment: Then the patient was treated with high-dose progesterone for 3 months and AEH was confirmed as cured in a follow-up in July 2021.

Endometrial Hyperplasia due to drugs

A 58-year-old woman, a mother of single daughter aged about 30 years of age, menopausal for 10 years, presented to GIMS in 2018 with complaints of menorrhagia for last 2 months. Six years ago, she was diagnosed having breast cancer and after simple mastectomy, was on chemotherapy (tamoxifen) for the last 5 years and was doing well.

Sonography: A Sonography of pelvis and abdomen revealed 15 mm thick endometrial lining and some fluid inside. After a routine clinical examination, a diagnostic hysteroscopy and dilatation and curettage was done under general anaesthesia.

Operation: An endometrial polyp was also removed. A minimal endometrial lining was collected, along with the polyp were sent for histological examination. Post-operative recovery was eventless.

Histopathology: The Histology revealed that there were no cancerous changes, only atrophic endometrium, and polyp. She was then referred to the oncologist who advised her to continue the tamoxifen safely for another year for her breast cancer therapy.

Discussions

The physiological functions of the uterine endometrium are preparation for implantation, maintenance of pregnancy if implantation occurs, and menstruation in the absence of pregnancy. The endometrium thus plays a pivotal role in reproduction and continuation of our species. Menstrual flow is made up of the cells that slough away from the functional layer of the endometrial lining, mixed with blood from the little blood vessels that surrounded the uterine glands [6].

Epidemiology: Endometriosis is a condition when the endometrial lining deposits outside of the lining of the uterus, can grow under hormonal influence, wherever it is displaced. Sometimes, endometriosis can lead to cysts on the ovaries called endometriomas, as well as scar tissue and adhesions that cause structures in the pelvis to stick together. The current understanding of the endometriosis can be summarised as [6]:

1. Retrograde menstruation: Menstrual blood containing endometrial cells flows back through the fallopian tubes and into the pelvic cavity, endometrial cells implanting and growing over time, at the time of menstrual periods through cervix and vagina.

2. Cellular metaplasia: When Stem cells outside the uterus change into endometrial-like cells and start to grow, then spread through the body via blood and lymphatic vessels.

3. Other factors: Oestrogen dependent endometriosis, which increases the inflammation, when they are high, but the absence of oestrogen does not mean no endometriosis.

A recent study lists Early age at menarche, shorter menstrual length, and taller height as higher risk factors of endometriosis while parity, higher body mass index (BMI) and smoking are associated with decreased risk. Endometriosis often presents as infertility or continued pelvic pain despite treatment with analgesics and cyclic oral contraceptive pills [7]. Despite a range of symptoms, diagnosis of endometriosis is often delayed due to lack of non-invasive, definitive, and consistent biomarkers for diagnosis. Hormone therapy and analgesics are used for treatment of symptomatic endometriosis. However, the efficacy of these treatments is limited as endometriosis often recurs [7].

Most women with endometriosis may have no symptoms. But in some women following Symptoms may become explicit:

- i) Pain the Pelvis: Severe pain in the pelvis, especially during menstrual periods, or during sex or when urinating or defecation is the commonest symptom. Sometime only a mild chronic pelvic pain may bother as was in Roopa’s case.
- ii) Post menopausal Bleeding as was seen in Roopa and Pragati’s cases.
- iii) Starting with post-menopausal spotting and leading to heavy bleeding during periods or between periods or even after menopause as was in Roopa’s case.
- iv) An abdominal mass, bloating or nausea, as was seen in Pragati’s case and our second case either due to a cyst or a Polyp.
- v) Fatigue, depression, or anxiety, Symptoms improve after menopause, but not always.
- vi) Infertility: Some women have trouble in getting pregnant (Primary or Secondary infertility)

Endometriosis classification systems:

Endofound endometriosis classification:

Category I: Peritoneal endometriosis: The most minimal form of endometriosis in which the peritoneum, the membrane

Table 1: ARSM endometriosis stages.

Endometriosis Stage	Manifestation of the Condition
Stage I (1-5 points)	Minimal
	Few superficial implants
Stage II (6-15 points)	Mild
	More and deeper implants
Stage III (16-40 points)	Moderate
	Many deep implants
	Small cysts on one or both ovaries
Stage IV (>40 points)	Presence of filmy adhesions
	Severe
	Many deep implants
	Large cysts on one or both ovaries
	Many dense adhesions

that lines the abdomen, is infiltrated with endometriosis tissue.

Category II: Ovarian Endometriomas (Chocolate Cysts): Endometriosis that is already established within the ovaries. These forms of ovarian cysts are of particular concern due to their risk of breaking and spreading endometriosis within the pelvic cavity.

Category III: Deep Infiltrating Endometriosis I (DIE I): The first form of deep infiltrating endometriosis involves organs within the pelvic cavity, including ovaries, rectum, uterus, and can significantly distort the anatomy of the pelvic organs.

Category IV: Deep Infiltrating Endometriosis II (DIE II): The other more extreme form of DIE involves organs both within and outside the pelvic cavity, including the bowels, appendix, diaphragm, heart, and lungs among others.

ASRM Classification

The most used and best-known system was developed by the American Society for Reproductive Medicine (ASRM), which divides into four stages or grades according to the number of lesions and depth of infiltration: minimal (Stage I), mild (Stage II), moderate (Stage III) and severe (Stage IV).

The ARSM classification also uses a point system to try to quantify endometriotic lesions. This point system allows for a way to numerically scale the disease. A score of 15 or less indicates minimal or mild disease. A score of 16 or higher may indicate moderate or severe disease, However, the severity or the score of the disease does not necessarily correlate to the level of pain or presence of other symptoms.

Situation in India: In India endometriosis is estimated to bother about 42 million women in their lifetime. Using the proteomics approach, anti-endometrial antibodies (AEAs - tropomyosin 3 (TPM3), stomatin-like protein2 (SLP-2), and tropomodulin 3 (TMOD3)) were detected in Indian women with endometriosis [7].

Diagnosis

A careful history of menstrual symptoms and acute or chronic pelvic pain provides the basis for suspecting endometriosis. Current guidelines recommend that the histological examination of specimens collected from the suspicious areas during the visual inspection of the pelvis at laparoscopy, or through D&C is the gold standard for endometriosis diagnosis. Many studies have evaluated the diagnostic value of biomarkers for endometriosis but to date there is no reliable recommended biomarkers in endometrial tissue, menstrual or uterine fluids and immunologic markers in blood or urine for clinical use as a diagnostic test for endometriosis. Ovarian endometrioma, adhesions and deep nodular forms of disease often require ultrasonography or magnetic resonance imaging (MRI) to detect. Histologic verification, after surgical excision help management but must not prevent commencement of empirical medical treatment [2, 7].

Treatment

Treat the pain [3, 4]:

a) Non-steroidal anti-inflammatory drugs (NSAIDs) and analgesics (painkillers) like ibuprofen and naproxen are often used to treat pain.

b) Hormonal medicines like GnRH-analogues and contraceptive tablets help control pain. e.g., pills, hormonal intrauterine devices (IUDs), vaginal rings, implants, injections, and patches. However, these methods are not suitable for women wanting to get pregnant.

c) Fertility Facilitators: Fertility medicines and procedures are used for those having difficulty in getting pregnant due to endometriosis. Laparoscopic Surgery is used to remove endometriosis lesions, adhesions, and scar tissues, followed ovarian stimulation drugs. Intrauterine insemination (IUI), and in vitro fertilization (IVF), are also done with varied success rates.

d) Secondary changes of the pelvis, including the pelvic floor, and central sensitization may benefit from physiotherapy and complementary treatments.

d) Appropriate advice, counselling and emotional assistance will go a long way.

Endometriosis recurrences: Although surgery for endometriosis can improve pain and fertility, the risk of disease recurrence is high. Even after surgical / Laparoscopic removal of lesions, partial Oophorectomy, and affected side Salpingectomy they may recur, and pelvic floor muscle abnormalities can contribute to chronic pelvic pain. Recurrent endometriosis has been associated with the presence of residual ovarian tissue following oophorectomy as was in the case of Pragati. Reactivation of disease secondary to endogenous hormone secretion from this ovarian tissue is called 'ovarian remnant syndrome'. The recurrence rate of endometriosis is between 20 and 40% within five years following conservative surgery.

A meta-analysis of 17 studies (13 RCTs and 4 cohort studies), with 2137 patients (1189 receiving post-operative suppression and 948 controls). The study looked at post-operative endometriosis recurrence, determined by imaging or recurrence of symptoms, at least 12 months post-operatively and change in endometriosis-related pain. Mean follow up ranged from 12 to 36 months, and outcomes were assessed at a median of 18 months. It reported, a significantly decreased risk of endometriosis recurrence and significantly lower pain scores in patients receiving post-operative hormonal suppression compared to controls [7]. Pragati our case did not get any post-operative hormone therapy.

Public health importance: A meta-analysis of studies published from January 1990 to December 2018 reporting the prevalence of endometriosis estimates the overall prevalence of endometriosis as 18% and by stage ranged from 4 to 20 % stage 1 and 2% for stage for stage 4. The prevalence of endometriosis in women with infertility -31%, chronic pelvic pain -42% and asymptomatic -23 % respectively. Thus, driving the message that Endometriosis has significant social, public health and economic implications. It can decrease quality of life due to severe pain, fatigue, depression, anxiety, and infertility. For some it prevents from going to school, college, or work. Painful sex due to endometriosis can lead to interrup-

tion or avoidance of intercourse and affect the sexual health of affected individuals and their partners. Therefore, addressing endometriosis is key public health intervention as it supports the highest human right of sexual & reproductive health, quality of life & overall well-being.

Prevention & cure: At present, there is no known way to prevent or cure for endometriosis or Endometrial Hyperplasia or Cancers. Early diagnosis and management may slow or halt the natural progression and reduce the long-term burden.

Endometrial hyperplasia: Endometrial hyperplasia is thickening of the uterine lining, causing heavy or abnormal bleeding as was in our second case report. AEH is uncommon reproductive age group. Endometrial hyperplasia is identified as a precancerous pathological change Atypical endometrial hyperplasia raises the risk of endometrial cancer and uterine cancer. The condition tends to occur during fertility period (our 2 case) or after menopause as in Roopa's case it occurred a decade after menopause. It is advised that women who have any of the symptoms like Heavy or abnormal bleeding, Vaginal bleeding after menopause, Dysmenorrhea (Painful cramping), Dysuria (Painful urination), dyspareunia (Painful intercourse), Pelvic pain, unusual vaginal discharge or frequently missed menstrual periods, must consult a Gynaecologist [9, 10].

The root cause of endometrial hyperplasia is an imbalance between oestrogen and progesterone, leading to the lining not fully shredded each month. After an unusual accumulation of thickening of the uterine lining, it results in endometrial hyperplasia.

Management and treatment of endometrial hyperplasia:

1. Treatment for most cases of endometrial hyperplasia involves taking progestin, which is the human-made version of progesterone, the hormone patients' body is lacking. Hormone therapy- If after menopause, irregular periods or menorrhagia occurs, maintaining a healthy weight and Quitting smoking are some of the ways to minimize the risk of endometrial hyperplasia and using a pill containing progesterone along with oestrogen as treatment [9, 10]. Progestin comes in forms of ii) IUD -Intrauterine device containing progesterone iii) Injection Depo-Provera®, iv) Vaginal cream or gel.

2. A hysterectomy (removal of the uterus) is recommended if the condition worsens or doesn't improve with progestin treatment or cancerous cells develop as was in Roopa's case. In a study, among women 18–90 years the overall incidence of endometrial hyperplasia was 133 per 100,000 woman-years, most common in women ages 50–54, and was rarely observed in women under 30. Simple and complex hyperplasia incidences peaked in women ages 50–54 [10].

Conclusion

Endometriosis is a chronic disease associated with severe, life-impacting pain during periods, sexual intercourse, bowel movements and/or urination, chronic pelvic pain, abdominal bloating, nausea, fatigue, and sometimes depression, anxiety, and infertility. It affects roughly 10% (250 million) of reproduc-

tive age women globally. In India endometriosis is estimated to bother about 42 million women in their lifetime. While the pathogenesis of endometriosis is still enigmatic and complex, it is part of a uterine reproductive dysfunction syndrome and is a transitional form from benign disease to tumour, though the mechanism of this conversion is not yet established. Recent studies point to Early age at menarche, shorter menstrual length, and taller height as higher, while parity, higher body mass index (BMI) and smoking as decreased risk factors. Endometriosis often presents as infertility or continued pelvic pain despite treatment with analgesics and cyclic oral contraceptive pills. Given its public health importance, access to early diagnosis and effective treatment is important, However, it is limited in many settings, worst in low- & middle-income countries. The National and Provincial Governments and Professional organizations like Federation of Obstetrics and Gynaecology, Endocrinology, etc must rise to the occasion.

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