It has been said that "Man endures pain as an undeserved punishment; woman accepts it as a natural heritage". The pain of endometriosis is endured and ignored by many women due to the intangible nature of pain and the common acceptance that monthly pain for a woman is to be accepted. Endometriosis is a painful, chronic disease that affects millions of women and girls worldwide. Endometriosis has been estimated to affect up to 10% of women. Approximately four out of every 1,000 women are hospitalized as a result of endometriosis each year. Women ages 25–35 are most affected, with 27 being the average age at diagnosis. The incidence of endometriosis is higher among white women and among women who have a family history of the disease (Georgia reproductive specialists).

Endometriosis occurs when tissue like that which lines the uterus (endometrium) is found outside the uterus, usually in the abdomen, on the ovaries, fallopian tubes, and ligaments that support the uterus; the area between the vagina and rectum (cul-de-sac of Douglas); the outer surface of the uterus; and the lining of the pelvic cavity. Other sites for these endometrial growths may include the bladder, bowel, vagina, cervix, vulva, and in abdominal surgical scars. Less commonly, they are found in the lung, arm, thigh, and other locations such as the nose (Endometriosis Association).

This misplaced tissue develops into growths or lesions that respond to the menstrual cycle in the same way that the tissue of the uterine lining does: each month the tissue builds up, breaks down, and sheds. Menstrual blood flows from the uterus and out of the body through the vagina, but the blood and tissue shed from endometrial growths has no way of leaving the body. This results in internal bleeding, breakdown of the blood and tissue from the lesions, and inflammation -- and can cause pain, infertility, scar tissue formation, adhesions, and bowel problems (Endometriosis Association).

The most common symptoms of Endometriosis are pain before and during periods, pain with intercourse, chronic pelvic pain throughout the month, low back pain, heavy and/or irregular periods, painful bowel movements (especially during menstruation), painful urination (especially during menstruation), fatigue, infertility, diarrhea and/or constipation. Other symptoms, which are common with Endometriosis, include headaches, low-grade fever and depression. As Endometriosis develops, a woman's immune system becomes more and more impaired and this leads to further health problems. Due to increased research, as well as surveys of Endometriosis patients, it is becoming clear that women with the disease are susceptible to other serious health problems including: Chronic Fatigue Syndrome (100 times more common in women with endometriosis (Endometriosis Association)), Myalgic Encephalomyelitis, Hypothyroidism (7 times more common in women with endometriosis), Fibromyalgia, Rheumatoid arthritis, Hypoglycemia, Anxiety and susceptibility to infections and allergies.
In the later stages of Endometriosis, adhesions usually develop in the pelvic cavity which can ‘glue’ pelvic organs together. These adhesions will seriously interfere with normal functions of organs in the pelvis, causing bowel obstructions, digestive problems, infertility, urinary problems, agonizing pains when the adhesions are pulled, causing mobility problems. (see figure 1)

There is no simple test used to diagnose endometriosis, which may be why there is a diagnostic delay of up to 12 years in some healthcare settings with an average delay of 6.9 years and an increase in the delay correlating with younger age of patient. At present, the only reliable way to definitively diagnose endometriosis is by performing a laparoscopy and to take a biopsy of the tissue (see figures 2, 3 & 4). However, this is an expensive, invasive procedure. Furthermore, if the surgeon is not a specialist in endometriosis he may not recognize the disease, which can result in a "false negative" result. This makes diagnosing endometriosis a challenge, and therefore an experienced gynecologist should be able to begin by recognizing symptoms suggestive of Endometriosis through talking with the woman and obtaining a history of her symptoms. Unfortunately, some of the symptoms will mimic those of other health problems, including: ovarian cysts, ectopic pregnancy, Pelvic Inflammatory Disease, irritable bowel syndrome, ovarian cancer, fibroid tumors, colon cancer and appendicitis (all of which can be excluded by laparoscopic examination).
Figure 2: yellow, white & black endometrial lesions with nearly complete obliteration of the Cul-de-sac of Douglas

Figure 3: Histological evidence of Endometriosis, sample taken from uterosacral ligament

Figure 4: Stereotypical “powder burn lesions” indicative of Endometriosis
There are other tests, which the gynecologist may perform. These include ultrasound, MRI scans, CA125 (CA-125 is the cell surface antigen expressed by derivatives of coelomic and müllerian epithelia, including endocervix, endometrium, fallopian tube, peritoneum, pleura, and pericardium and elevated CA-125 levels have also been observed in serum, menstrual effluent, and the peritoneal fluid of women with endometriosis), and gynecological examinations. None of these can definitively confirm endometriosis (though they can be suggestive of the disease), nor can they definitively dismiss the presence of endometriotic lesions/cysts. The fact is that there is no non-invasive, definitive diagnostic method for endometriosis. Recently however, there has been promising research on a new non-invasive test for endometriosis. This is based on detecting nerve fibers in the endometrium of women with Endometriosis. However, this research has not been validated, and there is not yet a test on the market.

There are many suspected causes of Endometriosis but no definitive answer. The retrograde menstruation theory (transtubal migration theory) suggests that during menstruation some of the menstrual tissue backs up through the fallopian tubes, implants in the abdomen, and grows. Some experts believe that all women experience some menstrual tissue backup and that an immune system problem or a hormonal problem allows this tissue to grow in the women who develop endometriosis (possible correlation with accompanying illnesses such as CFS and Fibromyalgia?). Another theory suggests that endometrial tissue is distributed from the uterus to other parts of the body through the vascular system. A genetic theory suggests that it may be carried in the genes in certain families or that some families may have predisposing factors to endometriosis (research is currently being conducted by Juneau Biosciences among others) (Juneau Biosciences, LLC). Surgical transplantation has also been cited in many cases where endometriosis is found in abdominal scars, although it has also been found in such scars when accidental implantation seems unlikely. Another theory suggests that remnants of tissue from when the woman was an embryo may later develop into endometriosis, or that some adult tissues retain the ability they had in the embryo stage to transform into reproductive tissue in certain circumstances.

Most startling of all possible causes is that of environmental toxicity, which impairs the immune system, allowing endometrial tissue to implant outside of the uterus and become symptomatic. In 1992, German scientists reported an association between heavy PCB contamination and endometriosis. Then in 1993, researchers from the Harlow Primate Center at the University of Wisconsin published dramatic and previously unexpected findings. Their study was of monkeys used in research on the long-term reproductive effects of dioxin. The study found a dose-dependent relationship between dioxin and endometriosis. Animals with more exposure were more likely to develop the disease, and the greater a female monkey's exposure to dioxin, the greater the severity of the disease (Our Stolen Futures). Furthermore, research by the Endometriosis Association confirms the link between dioxin (TCCD) exposure and the development of endometriosis. Dioxin is a toxic chemical byproduct of pesticide manufacturing, bleached pulp and paper products, and medical and municipal waste incineration (this may explain why there has been such a sharp increase in the prevalence of endometriosis in recent years). The EA discovered a colony of rhesus monkeys that had developed endometriosis after exposure to dioxin.
79% of the monkeys exposed to dioxin developed endometriosis, with a correlation between amount of exposure and severity of symptoms (Association).

Because pain is the most prevalent symptom of Endometriosis, the management of pain is often the first treatment (often before a definitive diagnosis is reached). In our pharmaceutical dependent society the most common form of pain management is prescription and OTC pain killers, these include: simple analgesics (i.e. aspirin and paracetamol), compound analgesics (a combination of either aspirin or paracetamol), mild narcotics (i.e. codeine), narcotic analgesics (similar to morphine) and non-steroidal anti-inflammatory drugs (i.e. nurofen, ponstan, voltaren, etc).

Endometriosis is thought to be exacerbated by estrogen. Therefore, hormonal treatments for endometriosis are designed to attempt to temper estrogen production in a woman’s body and such treatments may subsequently relieve her of symptoms. Hormonal therapies may include: The combined oral contraceptive pill (OC), Progestogens / progestins, Mirena (IUD), GnRH-analogues (agonists and antagonists), Danazol and Aromatase inhibitors. Hormonal therapies have varying degrees of side effects and, unfortunately, whatever pain relief that is achieved may be only temporary for many girls and women. Side effects of hormone therapy such as preventing pregnancy, ovarian deficiency and osteoporosis may deter some women from considering these treatments. Imene Benayache, M.D., Director and Manager of the Clinical Research Center at Saint Agnes said in 2009 “Many of the treatments currently available for women suffering from endometriosis result in a combination of more than one treatment over a long period of time with multiple side effects,” and “As a result, we are conducting two ongoing studies to determine the efficacy of alternative medications in subjects with endometriosis.” These studies were conducted to determine both the efficiency of the drugs and the extent of the side effects such as decreased bone density (PHYSICIAN UPDATE, V7N1). Dr Rafi of Saint Agnes stated that “Through clinical trials, patients have the opportunity to begin medication therapies that will benefit not only them but also future patients.”

Laparoscopic surgery is the only definitive way to diagnose endometriosis and fortunately, in many cases, the disease can be diagnosed and treated in the same procedure. The success of surgery depends greatly on the skill of the surgeon and the thoroughness of the surgery. The aim is to remove all endometriotic lesions, cysts, and adhesions. Most endometriosis surgery is done through the laparoscope, although a full abdominal incision called a laparotomy may still be required in rare cases for extensive disease or bowel resections. Although women with endometriosis are often told that hysterectomy is the “definitive” solution for endometriosis, the disease can recur even after a hysterectomy (possibly due to estrogen mimicking substances such as those found in soy products and toxins such as PCB and Dioxins). A number of patients have had hysterectomy but have not had all the disease removed, and for a variety of reasons that disease can continue. It can persist as severe symptoms: there can be pain, bleeding, bowel obstruction, or problems with the urinary tract. David Redwine MD author of Surgical Management of Endometriosis believes that the incomplete removal of implants, tumors, lesions and any other suspect tissue is the reason for the high rate of reoccurrence with both laparoscopic surgery and Hysterectomy. Dr Redwine, though
controversial makes a convincing point for his established protocol for treating Endometriosis. Over many years he has refined his technique of using a monopolar electrical cord attached to 3 mm scissors to completely excise all suspect tissue (yellow, white, and powder burn lesions as well as cysts and adhesions). These results certainly indicate that endometriosis can be effectively and permanently eradicated in most patients by surgery alone. This disproves the notion that endometriosis "always comes back," that it increases in geographical extent over time, or that at best surgery is only "debulking" since "you can't remove all the disease." He believes that the incidence of reoccurrence of Endometrial symptoms after Hysterectomy point to the fallacy of the idea that Endometriosis is "cured" by pregnancy and Menopause. In his opinion this is merely an asymptomatic phase of the disease and the treatment of the symptoms rather than removal of diseased tissue of Endometrial patients hinders progress (David B. Redwine MD, ). Conversely, Dian Shepperson Mills Cert Ed BA believes that nutritional treatment to lessen the symptoms of Endometriosis is the best and least harmful course of treatment. She suspects that "a lot of the pain which we get with endometriosis, I don't know that it's necessarily caused by the endometriosis itself. I think there are a lot of immune products in the peritoneal fluid, which are increasing inflammation, which are causing the bowel and bladder to go into spasms. Also you can look at digestion because if a person is not absorbing the nutrients correctly, due to whatever reason, that could also lead to more higher levels of pain perception in the body because they are not taking in the nutrients that would help dampen down the pain pathways." (DipION). She believes that an increase in consumption of Vitamin C, Vitamin E and the B vitamins, especially B1, B6 and B12 when taken in combination, work as well as any analgesic when they are in the right level in the body. Essential fatty acids, like omega-6 fatty acids from linseed oil and fish omega 3, evening primrose oil, borage oil, star flower oil and magnesium are important at the cell membrane as they are seen from research to stop cancers attaching. Also, she says "if we think about this logically, all the hormones, so if you are using the correct oils and they're being metabolized into prostaglandins series one and three, which are anti-inflammatory and you reduce the oils in dairy and meat which are pro-inflammatory, series two prostaglandins, you can possibly, or we see this happening, reduce pain levels" (DipION). She also suggests a link between wheat and gluten sensitivity. She states, "when I've taken wheat out of the diet, in 80% of the women with endometriosis, their pain subsides (DipION)". Although her findings may seem to contradict Dr Redwine’s conclusion that it is more beneficial to remove all suspect tissue rather than treating Endometriosis symptomatically, in reality they are in agreement that there is a specific (if not agreed upon) reason that there are many women with asymptomatic Endometrial implants. Perhaps in the future these two treatment options can be used to complement each other and make the need for hormone therapy and complete hysterectomy (essentially female castration) obsolete.

Although Endometriosis is not a Cancerous disease per se it has very similar involvement of dis-functioning immune system that allows unchecked growth of Endometrial cells just as they would in malignant neoplastic disorders. Like cancerous growth, endometrial implants metastasize locally and distally attaching to and invading other tissues causing great damage. The implants and lesions are often deeply penetrating showing the “tip of the iceberg” phenomenon that is common in skin and other cancers. These metaplasic cells show decreased apoptosis while the mass, cyst or
lesion shows an increase in vascularization. There is also a common mutation of genes between Endometriosis and both endometrial and clear cell carcinomas. Because of these similarities it would stand to reason that research into the treatment and prevention of Cancer could help us gain insight into the treatment and prevention of Endometriosis and vice versa. Considering that Endometriosis research could be used to fight Cancer is a valid way to increase funding for this often debilitating and under-researched disease.

Works Cited


