RECENT TRENDS IN THE MANAGEMENT OF PELVIC ENDOMETRIOSIS

ESSAY

Submitted in completion of Master Degree in
(Obstetrics and Gynecology)

By

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2007

ABSTRACT

Endometriosis is a common and important clinical problem of women, predominantly those in the reproductive age group. It is classically defined as the presence of functional endometrium outside the uterine cavity; symptoms associated with endometriosis are infertility,dysmenorrhea and pelvic pain.

Laparoscopy is the standard of reference in the diagnosis of endometriosis and the disease can be classified into several degrees during laparoscopy, treatment is by removing the implants via using different techniques e.g. Laser.

(Key Words: Laparoscopy, Endometriosis, Endomertrioma).

ACKNOWLEDGEMENT

Thanks **GOD**, who guided us to his way, and give me the help to do and continue this work. Any good is from him and any bad is from me.

I am greatly indebted and much grateful to ***Prof. Dr. Mohamad Fadel Shaltout,*** Professor of obstetrics and Gynecology, Faculty of Medicine, Cairo University, for his valuable help, close supervision, continuous encouragement, and valuable advice and overall, his moral support and kindness that gave me and this work a life to the scope of light.

I would also like to express my profound gratitude and sincere thanks to ***Prof. Dr.Magdy Ibrahim Mostafa,*** assistant Professor of obstetrics and Gynecology, Faculty of Medicine, Cairo University, for his sincere guidance, valuable encouragement, close supervision and all the efforts that he expressed throughout this work. Words of thanks are so little for his great help in preparation and completing this work.

I must also give my great thanks and respect to ***Dr. Ahmed Mhmoud Sayed ,*** Lecturer of Gynecology and Obstetrics, faculty of medicin, Cairo university. Who revised this work from the beginning , giving me his precious suggestion and time for improvement of this work. Without his honest assistance and guidance, this work could hardly have been done.

I wish to gift this work to ***my father, my mother and my sisters*** to express my thanks and gratitude for their help, support and pray.

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LIST OF ABBREVIATIONS

AAGL	American Association of Gynecologic Laparoscopists
AFS	American Fertility Society
ASRM	American Society for Reproductive Medicine
Bcl-2	B cell lymphoma/leukaemia-2
BMI	Body Mass Index
CA-125	Cancer Antigen-125
CNS	Central Nervous System
CO2	Carbon Dioxide
COX-2	cyclooxygenase type-2
CT	Computed Tomography
DCs	Dentritic cells
EC	Endothelial Cells
GIFT	Gamete Intra-fallopian Transfer
GnRH	Gonadotropin-releasing hormone
GnRH-a	Gonadotropin-Releasing Hormone Agonists
IL	Interleukin
IPC	Intra Peritoneal Cystectomy
IUD	Intra-Uterine Device
IUP	Intra Uterine Pregnancy
IVF	In vitro fertilization
KTP	Potassium-Titanyl-Phosphate
LHRH	Lutinizing Hormone releasing Hormone
LUNA	Laparoscopic Uterosacral Nerve Ablation
MMP	Matrix Metalloproteinases
MPA	Medroxy-progesteron acetate
MR	Magnetic Resonance
MRI	Magnetic Resonance Imaging
Nd:YAG	Neodymium:Yttrium-Aluminum-Garnet
NK	Natural Killer
NSAIDs	Non-steroidal Anti-Inflammatory Drugs
OC	Oral Contraceptives
OCPs	Oral contraceptive pills
PCBs	Polychlorinated biphenyls
PF	Peritoneal fluid
PG	Prostaglandin
PP-14	Placental Protien-14
TNF	Tumor Necrosis Factor
TPC	Trans Peritoneal Cystectomy
US	Ultrasonography
USL	Utero-Sacral Nerve
VEGF	Vascular Endothelial Growth Factor
ZIFT	Zygote Intra-Fallopian Transfer

INTRODUCTION

Endometriosis is a chronic benign gynecologic condition defined by the presence of functioning endometrial glands and stroma outside of the uterine cavity and musculature, it is a histologic diagnosis made at the time of surgery. Endometriosis is estimated to affect 10% of reproductive-age women, and is a leading cause of gynecologic hospitalization and hysterectomy, it is very costly in its effects on the quality of women's lives, expense for medical care and economic impact in the workplace ***(Diane et al., 2001)***.

Endometriosis is found predominantly in women of childbearing age, the mean age at diagnosis is 25–29 years. The most commonly associated pain symptoms include non-menstrual pain, dysmenorrhea, and dyspareunia, but it is often greater in women who present with infertility rather than pelvic pain. Endometriosis is not uncommon among adolescents, approximately half of women under 20 years of age who have chronic pelvic pain or dyspareunia have the disease ***(Dmowski et al., 1997)***.

The prevalence of endometriosis is difficult to determine accurately, laparoscopy or surgery is required for the definitive diagnosis, and endometriosis has been reported in 4.1% of asymptomatic women undergoing laparoscopy for tubal ligation. However, 20% of women undergoing laparoscopic investigation for infertility and 24% of women with pelvic pain had endometriosis ***(Paula et al., 2001)***.

Laparoscopy is generally considered the most appropriate mean to confirm the diagnosis of endometriosis. Once endometriosis is suspected and laparoscopy is planned, preoperative evaluation should be targeted at detecting occult lesions or better planning the surgical approach. For example, ultrasound can be useful for the evaluation of an adnexal mass on pelvic examination or for the detection of an occult endometrioma ***(Georgine et al., 2004)***.

The optimum management of endometriosis remains as problematic as ever, endometriosis can be either asymptomatic or associated with minor symptoms and lesions that are sometimes self-limiting, It can also be associated with very severe symptoms and major pathological lesions involving the vital structures of the pelvis, different levels of symptomatology and pathology that require different levels of therapeutic interventions . Patients with minor disease may inadvertently be subjected to excessive investigations and invasive treatment, while those with major lesions might be under investigated such that appropriate treatment is delayed for years ***(Garry, 2004)***.

Aim of the Work

The objective is to highlight the recent trends in the diagnosis and management of pelvic endometriosis.

EPIDEMIOLOGY OF ENDOMETRIOSIS

Advances in understanding the epidemiology of endometriosis have lagged behind other diseases because of methodological problems related to disease definition and control selection. Nevertheless, a better picture of the epidemiology of endometriosis has emerged over the past few decades. Prevalence estimates of the disease in clinic populations vary from about a 4% occurrence of largely asymptomatic endometriosis found in women undergoing tubal ligation to 50% of teenagers with intractable dysmenorrhea ***(Cramer and Missmer, 2002)***.

Prevalence estimates of endometriosis in clinic populations vary by diagnosis. The prevalence of largely asymptomatic endometriosis found in women undergoing tubal ligation was about 4%, ranging from 1% to 7%. In a multicenter study of infertility, endometriosis was the diagnosis in 17% of women with primary infertility, but in other series the prevalence varied from about 9% to 50%. Among women with pelvic pain, the prevalence of endometriosis ranged from about 5% to 21%, with the larger studies suggesting about 8% ***(Sangi and Poindexter, 1995)***.

A group that appears to be at considerable risk for endometriosis are adolescents with intractable dysmenorrhea or pelvic pain, where about 50% are found to have the diagnosis. This observation suggests that adolescents with severe dysmenorrhea (generally defined as requiring analgesics and bed rest) have a high likelihood of having endometriosis and require particular attention for efforts at early detection or prevention,

suggestion that be offered is that such women be considered for continuous regimens of a progesterone-dominant birth control pill ***(Cramer and Missmer, 2002)***.

Dysmenorrhea is strongly associated with risk for endometriosis, but has generally been interpreted as a symptom of disease. Other menstrual risk factors related to endometriosis are age at menarche and cycle length. Most epidemiologic studies addressing the topic have found that an early menarche, often defined as ≤ age 11, increases the risk for endometriosis ***(Signorello et al., 1997)***.

The risk is also increased with a shorter cycle length, often defined as ≤ 27 days. There is less consistent evidence related to duration and heaviness of menstrual flow. Because early menarche and short cycles appear to be such consistent risk factors for endometriosis, it seems reasonable to predict that, if their physiologic determinants better understood, then the pathophysiology of endometriosis might better understood ***(Arumugam and Lim, 1997)***.

Regarding body habitus, weak inverse associations with weight and BMI have been found and an increased risk with taller height has been reported for endometriosis. Of interest regarding the latter association, taller women may have higher follicular-phase estradiol levels. Conversely, regular exercise, which may lower estrogen levels, has been associated with a reduced risk for endometriosis ***(Dorgan et al., 1995)***.

Most recently, following discovery of a dose-dependent relation between dioxin and severity of endometriosis, exposure to hormonally active environmental chemicals has been studied as a risk factor for endometriosis, consistent with the presumed estrogen-dependent nature of the disease ***(Buck Louis et al., 2005)***.

Hediger et al., 2005 stated that, among women undergoing laparoscopy either for tubal sterilization or as a diagnostic procedure,the follwing were found, women diagnosed with endometriosis on laparoscopy were taller, thinner, and had a significantly lower BMI. Women diagnosed with endometriosis were more likely to be late physical maturers (menarche ≥ 14 y) and late to initiate sexual activity (≥ 21 y), while they were less likely to be gravid, parous, and a current smoker than unaffected women. A higher current BMI was statistically protective for a diagnosis of endometriosis, for every unit increase in BMI (kg/m^2) there was an approximate 12–14% decrease in the likelihood of being diagnosed with endometriosis.

PATHOGENESIS OF ENDOMETRIOSIS

Endometriosis is a complex disorder, and its causes are probably multifactorial. Three theories of histogenesis have been proposed: (*a*) metastatic theory (retrograde menstrual implantation, vascular and lymphatic spread, and intraoperative implantation), (*b*) metaplastic theory, and (*c*) induction theory. In addition, researchers are presently investigating the role of growth factors, immunity, and other mechanisms that may contribute to the development of this disorder ***(Paula et al., 2001)***.

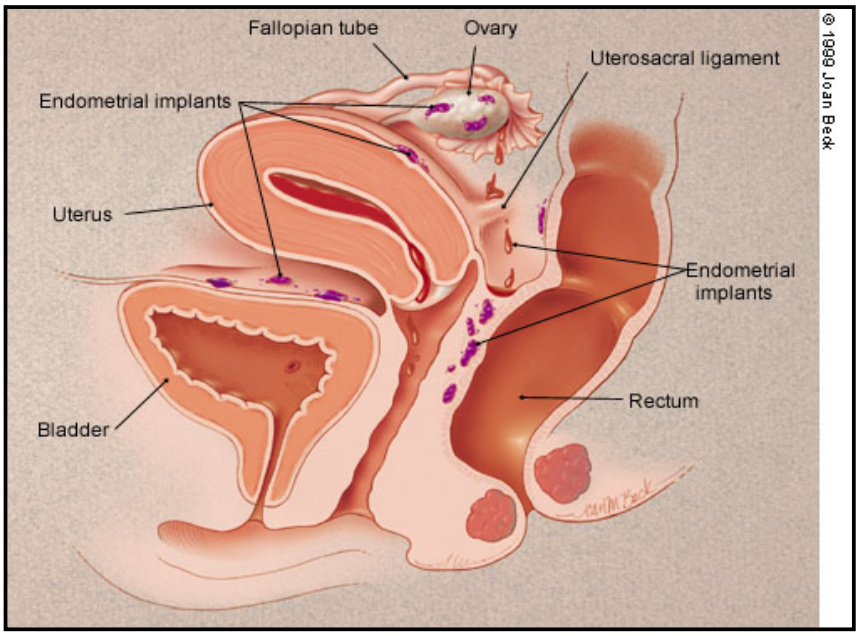

FIGURE 1: Basic anatomy of retrograde menstruation

I- IMPLANTATION AND METASTATIC THEORIES:

The most widely accepted theory is that endometriosis results from metastatic implantation from retrograde menstruation , the theory assumes transportation of endometrial tissue from the uterus in a retrograde fashion into the peritoneal cavity due to abnormal uterine contractility ***(Sampson,1927)***, and enhanced uterine contractility ***(Bulletti et al., 1996)***.

II-COELOMIC METAPLASIA THEORY:

A second theory of histogenesis is that the endometriosis is duo to metaplastic differentiation of serosal surfaces (coelomic epithelium) or müllerian remnant tissue, the theory suggests the possibility of peritoneal cells differentiating into functioning endometrial cells. Both endometrial and peritoneal cells derive from the coelomic wall epithelium, the strongest evidence for this theory is the demonstration of endometriosis in women lacking functional eutopic endometrium (for example, those with Turner syndrome, gonadal dysgenesis and uterine agenesis) ***(Clement1994***

III-INDUCTION THEORY:

A third theory, the induction theory of endometriosis, is a combination of the first two. It suggests that shed endometrium releases substances that induce undifferentiated mesenchyma to form endometriotic tissue ***(Olive and Schwartz 1993)***.