RECENT TRENDS IN THE MANAGEMENT OF PELVIC ENDOMETRIOSIS

ESSAY

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Abstract

Endometriosis is a chronic benign condition defined by the presence of functioning endometrial glands and stroma outside of the uterine cavity . symptoms include chronic pelvic pain, infertility laparoscopy is the most appropriate mean to confirm diagnosis, treatment of endometriosis either medical treatment including aromatase inhibitor and immunomodulatory agent or laparoscopy.

(Key Words): Endometriosis, - aromatase inhibitor, Immunomodulatory agent

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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 lvmphoma/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
Gn.RH-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-I4	Placental Protein- 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

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 histological 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 symptoms are pain including 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-limited, 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

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

PATHOGENESIS

Pathogenesis

IMPLANTATION THEORY

The implantation theory proposes that endometrial tissue passes through the fallopian tubes, then attaches and proliferates at ectopic sites in the peritoneal cavity. This mechanism of histogenesis is often referred to as Sampson's theory and suggests that endometriotic implants result from menstrual flow through the fallopian tubes. **(Sampson J., 1927)**. Recent studies using laparoscopy have demonstrated that retrograde menstruation is a nearly universal phenomenon in women with patent fallopian tubes**. (Halme et al**., **1984**) found bloody peritoneal fluid in 90% of women having laparoscopy near the time of menses. Liu and Hitchcock (**Liu DT, et al**.,**1986)** reported retrograde spill of menstrual blood in 76% of women undergoing laparoscopy during menstruation. In addition, others have confirmed transtubal passage of endometrial cells into the peritoneal cavity after uterine lavage and hysteroscopy (**Egarter C, et al.,1996) (Nagel T, et al.,1984)** This evidence demonstrates that endometrial cells can access the peritoneal cavity through the fallopian tubes.

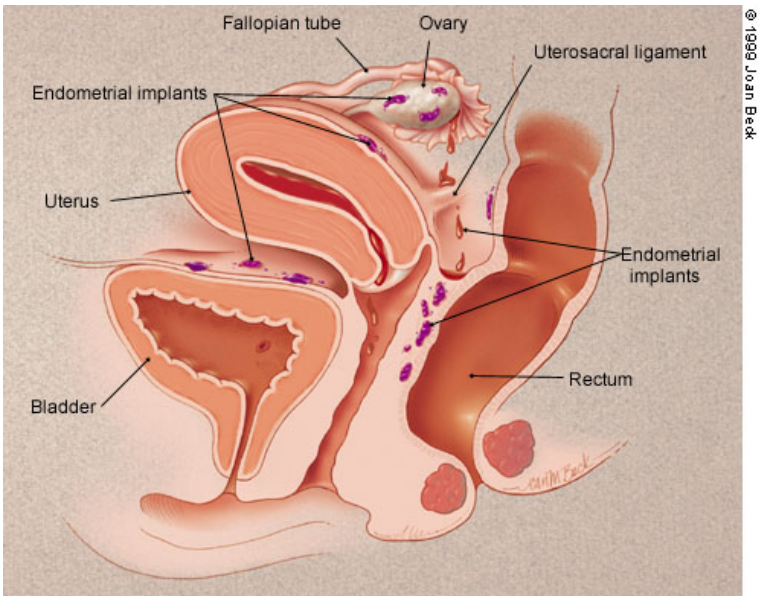

FIGURE 1. Basic anatomy of retrograde menstruation.

DIRECT EXTENSION THEORY

The theory of direct extension proposes that endometriosis results from direct invasion of ectopic endometrium through the uterine musculature. Cullen **(Cullen TS, et al., 1908)** who usually is credited with this theory, demonstrated glandular elements of adenomyosis in direct continuity with eutopic endometrium in 55 of 56%of cases of adenomyosis. Spread of endometrial glands and stroma through muscle fibers or along lymphatic and venous channels may, in fact, be a progenitor of adenomyosis, but the relationship of direct endometrial spread to endome triotic implants into the lumen of the bladder, ureter, urethra, and bowel is well documented. Although endometriosis, once established, may grow and progress through direct extension, there is no conclusive evidence that the eutopic endometrium begets endometriosis by direct extension through the uterine wall

COELOMIC METAPLASIA THEORY

Iwanoff and Meyer are recognized as originators and supporters of the coelomic metaplasia theory **(Ridley JH., 1968)** The theory of coelomic metaplasia holds that endometriosis develops from metaplasia of cells lining the pelvic peritoneum. This is based on embryologic studies demonstrating that mullerian ducts, germinal epithelium of the ovary, and pelvic peritoneum are all derived from the same embryologic precursor **(Gruenwald P., 1942)** A prerequisite of the coelomic metaplasia theory is that germinal epithelium and pelvic peritoneum contain cells capable of differentiating into endometrial cells or that these cells may be differentiate and later acquire the capacity for further development into endometrium.

Induction theory

The induction theory is an extension of the coelomic metaplasia theory. This theory postulates that "sloughed" endometrium produces specific substances that induce peritoneal tissues to form endometriosis. These substances then would affect undifferentiated peritoneal elements or cause dedifferentiation and subsequent metaplasia **(Olive and Schwartz ,1993)**

EMBRYONIC RESTS THEORY

Von Recklinghausen and Russell (**Von Recklinghausen, . 1896, Russell ww.,1899),** are credited with the theory that endometriosis results from embryonic cell rests. This theory suggests that, in the presence of specific stimulus, cell rests of mullerian origin could be activated to form functioning endometrium. In support of the embryonic rests theory, Russell (Russell WW) reported that histologic study of a grossly normal ovary demonstrated scattered foci of uterine glands and interglandular connective tissue." He concluded that the epithelium originated from mullerian duct remnants. Russell's observations, however, are far from conclusive. It is also conceivable that these ovarian "uterine glands and interglandular connective tissue" could have originated from attachment of regurgitated endometrium, from vascular/lymphatic metastasis, or from metaplasia. In addition, although embryonic cell rests are common in the ovary, here is no evidence that they develop into endometriosis.

LYMPHATIC AND VASCULAR METASTASIS THEORIES

Halban (**Halban J., 1924)** usually is credited with the lymphatic metastasis theory. He reported that endometriosis could arise in the retroperitoneum and in sites not directly opposed to peritoneum. Sampson, (**Sampson, JA.,1925)** however, also had suggested that