

Incidence of endometriosis in infertile women by laparoscopy

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Abstract: Objective: To detect incidence of endometriosis among infertile women by laparoscopy. **Methods:** A prospective cross sectional observational study. This study was done from May 2015 to May 2016. Included women admitted at Woman's Health Hospital of Assuit University, Assuit, Egypt. **Results:** In this study we detect endometriosis in (19.8%) of infertile patients were diagnosed with endometriosis by laparoscopy this is near to study of **Nousheen Aziz (2010)** who found endometriosis in (23.6%) of infertile women who subjected to laparoscopy. And our result differ from **Prasanta Nayak et al (2013)** who detected endometriosis in (12%) of infertile patients by laparoscopy. This difference may be due to large sample size in **Prasanta Nayak et al** study as he recruited 300 infertile patients. **Conclusion:** From this study, it is concluded that: Endometriosis is a common pathology among patients with infertility either primary or secondary, laparoscopy is the gold standard for detection of endometriosis as ultrasonography sensitive only in endometrioma.

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Keywords: Incidence; endometriosis; infertile; women; laparoscopy

1. Introduction

Study Background and Rationale:

The World Health Organization defines infertility as follows:

Infertility is “a disease of the reproductive system defined by the failure to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse (and there is no other reason, such as breastfeeding or postpartum amenorrhoea). Primary infertility is infertility in a couple who have never had a child. Secondary infertility is failure to conceive following a previous pregnancy. Infertility may be caused by infection in the man or woman, but often there is no obvious underlying cause (**WHO, 2013**).

Thus, infertility is a common condition, affecting 10 to 15 percent of reproductive-aged couples. Of note, even without treatment, approximately half of women will conceive in the second year of attempting. This information can be reassuring to a couple (**Yao,2002**).

Although the prevalence of infertility is believed to have remained relatively stable during the past 40 years, there is no doubt that the demand for infertility evaluation and treatment has increased considerably (**Abma, 1997**) (**Hull, 1985**) (**Stephen, 2000**) (**Yao, 2002**). The World Health Organization defines infertility as follows:

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Infertility is a distressing symptom associated with endometriosis, and the optimal choice of management in the context of this disease remains obscure. Endometriosis is in itself a multifaceted pathology, Although infertility and endometriosis are clearly connected, uncertainty persists over the causal relation between the two.

It is somewhat easy to understand how moderate–severe endometriosis is associated with infertility, as it is a destructive disorder that results in

considerable pain and anatomical distortion of pelvic organs (*OLIVE. et al. 2001 and Cahil. 2002*).

Yet it is less clear how mild–minimal endometriosis might impair fertility without pelvic distortion (*GORDTS et al. 2003 and SURREY & SCHOOLCRAFT. 2003*).

Endometriosis is defined as the presence of endometrial tissue (gland and stroma) outside the uterine cavity. the most frequent sites of implantation are the pelvic viscera and the peritoneum.

Endometriosis varies in appearance from a few minimal lesions, on otherwise intact pelvic organs, to massive ovarian endometriotic cysts that distort tubo-ovarian anatomy, and extensive adhesions often involving bowel, bladder, and ureter. It is estimated to occur in 7% of reproductive age-women in the United States and often is associated with pelvic pain and infertility (*Comiter, 2002*).

There are no sufficiently sensitive and specific signs and symptoms or diagnostic tests for the clinical diagnosis of endometriosis, and no diagnostic strategy is supported by evidence of effectiveness (*Mounsey et al., 2006*).

However, a complete history and detailed physical examination assist in the identification of symptoms and signs highly suggestive of endometriosis.

Laparoscopy

Laparoscopy is the gold standard for the diagnosis of endometriosis (*Ametzazurra et al 2009*). It is the most sensitive examination, because only laparoscopy can identify superficial peritoneal implants (*Kocakoc et al., 2008*).

However, laparoscopy is an invasive technique. The diagnosis is made by noting the presence of the classic lesions which have a blue-black or a powder-burned appearance. However, some lesions may lack this typical brown or black appearance but show histologic evidence of endometrial glands and stroma; these lesions can be red, white, or non pigmented and require biopsy for confirmation of diagnosis. Peritoneal defects and adhesions are also indicative. Microscopic evidence of endometriosis may be found in normal-appearing peritoneum (*Lobo., 2007*).

Other peritoneal lesions that grossly appear similar to endometriosis, but on histological examination are not, include necrotic areas of an ectopic pregnancy, fibrotic reactions to suture, hemangiomas, adrenal rest Walthard's rest, breast cancer, ovarian cancer, epithelial inclusions, residual carbon from laser surgery, peritoneal inflammation, psammoma bodies, peritoneal reactions to oil-based hysterosalpingogram dye (*Lobo, 2007*).

Endometriosis may develop anywhere within the pelvis and on other extra pelvic peritoneal surfaces. Most commonly, endometriosis is found in the

dependent areas of the pelvis. The ovary, pelvic peritoneum, anterior and posterior cul-de-sac, and uterosacral ligaments are frequently involved (*Markham, 1989*).

Additionally, the recto vaginal septum, ureter, and rarely the bladder, pericardium, surgical scars, and pleura may be affected. One pathologic review revealed that endometriosis has been identified on all organs except the spleen (*Markham, 1989*).

Ovarian endometriomas are a common manifestation of endometriosis. These smooth-walled, dark-brown ovarian cysts are filled with a chocolate-appearing fluid and may be unilocular or when larger, multilocular. Ovarian endometriomas are thought to form through invagination of ovarian cortex and subsequent incorporation of menstrual debris that had been adherent to the ovarian surface (*Hughesdon, 1957*).

Histology and Pathological Examination

Positive histology confirms the diagnosis of endometriosis; negative histology does not exclude it. Visual inspection generally is adequate, but histologic confirmation of at least one lesion is ideal; histology is obtained to demonstrate endometriosis and to exclude rare instances of malignancy (*Kennedy et al., 2005*).

2. Materials and Methods

Study Setting:-

Woman's Health Hospital of Assuit University, Assuit, Egypt.

Study Design:-

A prospective cross sectional observational study.

This study was done from May 2015 to May 2016.

Study population:

Recruitment of 116 participating women were from the Gynecology Outpatient Clinics and inpatients of Woman's health hospital of Assuit university. We planned to recruit 116 infertile patients who were subjected to laparoscopy with normal semen analysis of husband.

Inclusion criteria include:

1. Age: in reproductive period.
2. Infertile Patients with primary or secondary infertility.
3. Duration of infertility of at least one year of infertility without use of contraceptive method or lactation.

We planned to recruit 116 infertile patients.

The exclusion criteria include:

1-Patients with contraindication for laparoscopy:

- Haemodynamic instability.
- Gynecological malignancy.

2-Patients with contraindication for anaesthesia.

- A) heart diseases eg ischemic heart diseases-

patient at risk of congestive heart failure.

- B) pulmonary diseases.

3-Male factor of infertility.

Sample size:

The sample size for cases was calculated using EPI info 2000 statistical package. The calculation was done using the expected frequencies of different risk factors among cases and or the calculated odds ratio from previous studies using 95% confidence interval and 80% power of the test and taking one control for each case. The sample size calculated according to the above criteria was 116 for study group. However 116 cases were attempted in this research work.

Women met the inclusion criteria were subjected to the following:

Clinical assessment:

- History & physical examination.
- Investigations: serum level of FSH, LH, prolactin hormone and trans-vaginal sonography.
- Laparoscopy.

3. Results

This study population recruited 116 infertile women who attending to the outpatient's clinic and inpatient of women's health hospital of Assuit university and subjected to laparoscopy.

Table (1): Showing incidence of endometriosis by clinical assessment, by laparoscopy and by histopathology:

	(n= 116)
Endometriosis by clinical assessment:	
Present	16 (13.8%)
Absent	100 (86.2%)
Endometriosis detection by laparoscopy:	
Present	23 (19.8%)
Absent	93 (80.2%)
Endometriosis by histopathology:	
Present	23 (19.8%)

4. Discussion

This study was conducted at Women's health hospital of Assuit university to assess the incidence of endometriosis found during laparoscopic investigation of infertility.

In this prospective cross sectional observational study a total of 116 infertile patients all patients underwent laparoscopy as apart of their infertility work-up.

As regard the age of infertile women most of them presented between 20-30 years represent about (57.8%) of patients. This differ from **Nousheen Aziz;**

(2010) who detected (67.6%) of infertile patients were between 20-30years.

We detected (19.8%) of infertile patients were diagnosed with endometriosis by laparoscopy this is near to study of **Nousheen Aziz; (2010)** who found endometriosis in (23.6%) of infertile women who subjected to laparoscopy. And our result differ from **Prasanta Nayak et al; (2013)** who detected endometriosis in (12%) of infertile patients by laparoscopy. This difference may be due to large sample size in **Prasanta Nayak et al** study as he recruited 300 infertile patients.

As regards operative intervention, in this study, electrical ablation was performed in (11.2%) of infertile patients who were diagnosed with endometriotic implants.

Ablation of endometriotic lesions together with adhesiolysis has been proven to improve both spontaneous pregnancy rate, but not IVF (**Jacobson et al., 2004**).

Ovarian endometrioma can be treated by fenestration (the ovarian cyst wall is left in situ) and ablation or by excision or stripping the ovarian cyst wall (**Beretta et al., 1998**).

In this study, fenestration was performed in (1.7%) of infertile patients with ovarian endometrioma, cystectomy (excision of endometrioma) was performed in (1.7%) of infertile patients.

Laparoscopy is an ideal procedure for diagnosing and staging endometriosis because of magnification provided (**Kennedy et al., 2005**).

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