



ORIGINAL ARTICLE

Gynecologic laparoscopy and reproductive failure: Review of 4103 infertile Egyptian women



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KEYWORDS

Primary infertility;
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Abstract Objective: To assess the prevalence and varieties of pelvic pathology found during laparoscopic investigation of infertility in a large cohort of women.

Study design: Retrospective, descriptive study.

Setting: University Hospital.

Materials and methods: The medical records of women who underwent laparoscopy for the investigation of infertility between January 2001 and December 2010 were reviewed.

Results: 4103 cases were reviewed. 2980 (72.6%) were diagnosed with pelvic pathology while 1123 (27.4%) had a normal pelvis. Overall, the most common pathology was PCOS (25.5%), followed by pelvic adhesions (23.5%), tubal pathology (16.0%), endometriosis (7.9%), ovarian cyst(s) (7.0%), congenital anomalies (6.9%), and myoma (5.0%). Among 2944 (71.8%) women with primary infertility, 70.6% had pelvic pathology, the most common abnormality being PCOS (30.6%), followed by pelvic adhesions (16.5%), tubal pathology (14.4%), endometriosis (9.2%), ovarian cyst(s) (6.9%), congenital anomalies (7.9%), and myoma (5.6%). Among 1159 (28.2%) women with secondary infertility, 77.8% had pelvic pathology, the most common abnormality being pelvic adhesions (39.6%), followed by tubal pathology (19.8%), PCOS (13.7%), ovarian cyst(s) (7.2%), endometriosis (4.9%), congenital anomalies (4.8%), and myoma (3.9%).

Conclusion: The high prevalence of pelvic pathology found during laparoscopy confirms its role in the investigation and management of infertile women. While not all infertile women will need IVF, they will still benefit from laparoscopy either to assist natural conception, to direct them to IVF-ET, or to enhance IVF results.

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1. Introduction

Endoscopic surgery is widely considered one of the success stories of the past century. Over the past two decades, laparoscopic surgery has undergone rapid progress in terms of both technique, and its application to a wide variety of gynecological conditions (1).

The gynecological laparoscopic surgery has been progressively and successfully introduced into practice as, this minimally invasive surgery is associated with low morbidity, less postoperative pain, and improved cosmetics (2).

In the past, no work-up of an infertility problem was complete without a diagnostic laparoscopy. More recently, it has been proposed that laparoscopy has its place in certain situations: where the medical history is suggestive of endometriosis or tubal disease (prior operations, infections), when the result of tubal patency test is abnormal, or to remove hydrosalpinges and possibly large endometriomas in patients scheduled for IVF (3).

In addition to diagnostic indications, operative procedures at the time of laparoscopy proved to enhance both spontaneous and assisted conception rate (4).

However, laparoscopy is not without complications. It is an invasive procedure with potential risks of general anesthesia, vascular and gastrointestinal injuries, in addition to financial burden (5). Considering these side effects, laparoscopy is thereby essential only if it would be expected to change management decisions, or to provide direct laparoscopic correction of the abnormality (6).

The aim of the present study was to assess the prevalence and varieties of pelvic pathology found during laparoscopic investigation of infertility in a large cohort of women and to describe our experience with laparoscopy in a University Hospital Setting at Egypt.

2. Materials and methods

A retrospective descriptive study was performed at the Cytogenetic and Endoscopy unit, Obstetric and Gynecology Department, Zagazig University Hospitals, Egypt. Medical records of women who underwent laparoscopy during their infertility work-up between January 2001 and December 2010 were reviewed after approval of the local ethics committee.

As a tertiary care university based infertility center, all infertile women who were referred for laparoscopy as a part of their infertility work-up were included. Various indications included history of pelvic inflammatory disease, history suggestive of endometriosis, previous pelvic surgery, abnormal findings on HSG or those with unexplained infertility.

Laparoscopy was performed under general anesthesia with end tracheal intubation. An umbilical 10-mm port and one or two additional 5-mm operating ports were used. During the procedure, the pelvis was systematically inspected (the uterus, fallopian tubes, ovaries, round ligaments, uterosacral ligaments, uterovesical pouch, and pouch of Douglas). Adhesions, mild moderate or severe were recorded according to AFS classification (7). Endometriosis was recorded according to the revised AFS criteria (8). Myomas, presence of free fluid in the Douglas pouch or any other pathology if present was noted. Tubal patency was checked with a dye test. The laparoscopic findings were reported using the standard method in the operating form list.

Bilateral tubal occlusion, dense adhesions and severe endometriosis would establish a diagnosis of absolute mechanical infertility resulting in referral of patients to IVF.

As regards operative intervention, monopolar electrical laparoscopic drilling was used for PCOS patients. Endometriotic patches were treated with electro-ablation. For endometriotic

ovarian cyst either cystectomy or fenestration was done. Adhesiolysis was performed within sensible limits. Tubal surgery involved adhesiolysis, neosalpingostomy and/or cannulation. After tubal surgery, another dye test was performed. At the end of the procedure, 1000–1500 ml lactated ringer solution was left in the peritoneal cavity for hydro flotation.

3. Results

In this retrospective study, a total of 4103 patients' charts were reviewed. As regards age, 70.5% of women were in the age group of 20–29 years, Table 1. 2944 (71.76%) of infertile women had primary infertility and 1159 (28.23%) had secondary infertility. Abnormal findings were found in 2079 (70.6%) patients with primary infertility and 901 (77.79%) patients with secondary infertility, Table 2.

PCOS ($n = 759$, 25.46%) was the highest abnormality found among infertile women followed by pelvic adhesion ($n = 699$, 23.45%), tubal factor ($n = 478$, 16.04%), endometriosis ($n = 235$, 7.88%), ovarian cyst ($n = 209$, 7.01%), congenital anomalies ($n = 207$, 6.94%), Uterine fibroid ($n = 151$, 5.06%), and combined lesions were found in ($n = 242$, 8.12%), Table 3.

In women with primary infertility, PCOS was the most common cause identified ($n = 636$, 30.59%), followed by pelvic adhesions ($n = 342$, 16.45%), tubal factor ($n = 299$, 14.38%), endometriosis ($n = 191$, 9.1%), ovarian cyst ($n = 144$, 6.92%) and uterine fibroid ($n = 116$, 5.57%), Table 4.

Pelvic adhesions were the most common pathology found among women with secondary infertility ($n = 357$, 39.6%), followed by tubal factor ($n = 179$, 19.8%), PCOS ($n = 123$, 13.65%), ovarian cyst ($n = 65$, 7.21%), endometriosis ($n = 44$, 4.88%) and myoma ($n = 35$, 3.8%). So, tubo-peritoneal factor represented 59.4% of all pathologies found among women with secondary infertility, Table 5.

As regards laparoscopic operative intervention, monopolar electrical laparoscopic drilling was used for all PCOS patients. Endometriotic patches were treated with electro-ablation in 32/116 (27.58%) patients. For endometriotic ovarian cyst, cystectomy was performed in 27/119 (22.68%) fenestration was done for 76/119 (63.86%), and no interference in 16/119 (13.44%). For patients with ovarian cyst, cystectomy was done in 77/209 (36.84%), fenestration in 76/209 (36.36%), drainage in 65/209 (31.1%) and no interference in 6/209 (2.87%). Adhesiolysis was performed within rational limits and was successful in 474/699 (67.81%) patients with adhesions. Tubal surgery involved; neosalpingostomy for hydrosalpinx (123/207, 59.13%) and cannulation. Myomectomy was performed in 32/151 (21.19%).

Table 1 Age distribution among infertile women.

Age (years)	<i>n</i> (%)
<20	191 (4.65%)
20–24	1567 (38.19%)
25–29	1324 (32.26%)
30–34	571 (13.9%)
35–39	326 (7.94%)
≥40	124 (3.02%)

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