

## Diagnostic Significance Of Laparoscopy In Infertility & Identification Of Various Unsuspected Factors Associated With Infertility In Females

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### Abstract:

Diagnostic laparoscopy is normally the standard procedure performed as the final test in the infertility work up before progressing to infertility treatment. Aim was to evaluate the diagnostic significance of laparoscopy for fertility outcomes and identification of various unsuspected factors associated with sub fertility in females of Pakistan. This was a retrospective study, which was carried out in different hospitals. Method; A total of 35 patients with complaints of in diagnostic laparoscopy were observed. These patients either presented in gynae out patient department or infertility clinical gynae units of Lady Willingdon Hospital, Sir Ganga Ram hospital and Hameed Latif Hospital Lahore between the period of 7 June 2009 to 27 July 2009. Results; Out of 35 patients (65.71% were for primary infertility and 34.28% were for secondary infertility) 34.28% patients were observed with tube blockage after laparoscopic technique. Tuboperitoneal disease alone or combined with tubal blockage was responsible for major factors for infertility followed by endometriosis and fibroids. 23 patients were found to have no pelvic abnormality. Conclusion; Diagnostic laparoscopy is invaluable technique it must be carried out for complete assessment of female infertility factors. Studies have shown major benefits to the patient in terms of reduced postoperative pain, increased postoperative comfort, reduced hospital stay and quicker return to normal physical activities.

**Key words:** *Diagnostic laparoscopy, endometriosis, and infertility*

### Introduction:

Infertility has become nowadays not only a medical, but a social problem as well. The diagnostic laparoscopy with hysterosalpingography (HSG) can be helpful to diagnose the tubal pathology (Kanal pretty et al., 2006). The percentage of bilateral tubal blockage in infertile female patients was observed. Methylene blue dye was injected with a catheter through the external cervical os and its spill into the peritoneal cavity was visualized using laparoscopic technique. The result shows the high incidence of tuberculosis in both Primary and Secondary infertility but the main point to be noted is the prevalence of PID in secondary infertility 41% showing infection in previous deliveries Instrumentation abortion and sexual transmission (Tanvir Jamal., 2004). Hysterosalpingography may be a screening test for tubal patency. Routine use of diagnostic laparoscopy should be delayed for asymptomatic women. It is expected hysteroscopy and transvaginal hydro laparoscopy for asymptomatic

women may decrease indications for diagnostic laparoscopy with complete visualization of the pelvic cavity (Streda R., 2008).

Laparoscopy was usually performed for evaluative purposes. No major complications occurred. Improved visualization of the fallopian tube is a major advantage of laparoscopic investigation (Gold itch IM., 1971). Minimal or mild endometriosis is frequently diagnosed in infertile women. During diagnostic laparoscopy the women were randomly assigned to undergo resection or ablation of visible endometriosis or diagnostic laparoscopy only. So it is concluded that laparoscopic resection or ablation of minimal and mild endometriosis enhances fecundity in infertile women (Marcoux S et al., 1997). Laparoscopic surgery is appropriate for managing various gynecologic diseases and has an acceptable complication rate. However, operative laparoscopy should be performed carefully because its rate of complications is significantly higher than that of diagnostic laparoscopy,

especially for laparoscopic -assisted vaginal hysterectomy (Dr.Peng Hui Wang M.D et al., 2000).

The successful introduction of microsuturing and microinstruments for operative laparoscopy has allowed the convergence of laparoscopy and traditional microsurgery, resulting in the evolution of the 'new microsurgery'. This more dynamic approach overcomes the limitations of open microsurgery by providing continuous magnification and the benefits of a closed environment, making laparoscopy a complete surgical tool (Charles H et al., 1999). Prospective comparative study for evaluation of difficulties and complications of laparoscopy operation in obese women versus non-obese women showed that minor technical difficulties are more common among obese women during diagnostic and operative laparoscopy. Laparoscopy operation can be considered as safe in obese women as in non-obese women (Sherif El Sayes et al., 2003). Complications after laparoscopy are uncommon but among them major vascular injury is potentially the most fatal, with recognition or mortality typically occurring intra-operatively or in the immediate post-operative period (C.Moore).

Recent advances in laparoscopic surgery have enabled the gynecologic surgeon to treat an increased number of diseases of the reproductive organs by using the laser through the laparoscope. The results indicate that videolaseroscopic treatment of endometriosis associated with infertility, in surgically experienced hands, is at least as efficacious as other forms of therapy for mild and moderate cases of disease, but appears to be more successful than laparotomy for the more severe and extensive stages of disease (Nezhat C et al., 2008). Diagnostic

laparoscopy is normally the standard procedure performed as the final test in the infertility work up before progressing to infertility treatment. Therefore, further prospective studies should be performed to assess whether delaying, or bypassing entirely, diagnostic laparoscopy is more cost effective and if laparoscopic interventions for intra-abdominal abnormalities are effective in terms of higher pregnancy rates after treatment with IUI (S.J. Tanahatoc et al 2003).

#### **Materials and Methods:**

Thirty-five patients with complaints of infertility (primary or secondary) who presented in out patient department or infertility units of Lady willingdon Hospital, Lahore; Hameed Latif Hospital, Lahore and Sir Ganga Ram Hospital Lahore from 7 June 2009 to 25 July 2009 were studied. After detailed history including menstrual history, obstetrical history, medical history of patient and her husbands and thorough clinical examination, few first line investigations including height, B.P, pulse, weight, breast and accessory hairs were carried out. Other investigations if indicated were also done.

Most of the laparoscopies were carried out as day case operation. After informed consent, patients were called in operation theatre in the morning on day of operation. The patient was called empty stomach after 8 hours fast. The bladder was emptied prior to operation.

Dorsal lithotomy position was used. After the patient is under general anesthesia, a needle is inserted through the navel and the abdomen is filled with carbon dioxide gas. The gas pushes the internal organs away from the abdominal wall so that the laparoscope can be placed safely into the abdominal cavity to decrease the risk of injury to surrounding organs such

as the bowel, bladder, and blood vessels. The laparoscope is then inserted through an incision in the navel. Occasionally, alternate sites may be used for the insertion of the laparoscope based upon physician experience or the patient's prior surgical or medical history.

#### **Results:**

Thirty-five patients underwent diagnostic laparoscopy for infertility and various aspects of patients were studied.

Figure 3 reveals that maximum number (45.71%) of patients presented after 2-5 years of failure to conceive and 37.14% of patients had duration of infertility of 5-10 years, while 17.14% had failure of conception of more than 10 years. Figure 4 shows that almost 51.42% patients were observed with H/O dysmenorrhoea, 37.14% with H/O dyspareunia, 17.14% with H/O vaginal discharge, 11.42% with weight gain while 8.57% patients were observed with hirsutism. Figure 5 reveals that out of 35 patients 65.71% patients had normal tubes while 25.7% patients were observed with either right or left tube blockage.

Figure 6 Various associated factors with infertility are shown in this figure. Almost 50% patients were affected by peritoneal factors, cause of infertility in 25% of patients was endometriosis and in 16.66% patients it is fibroids.

#### **Discussion:**

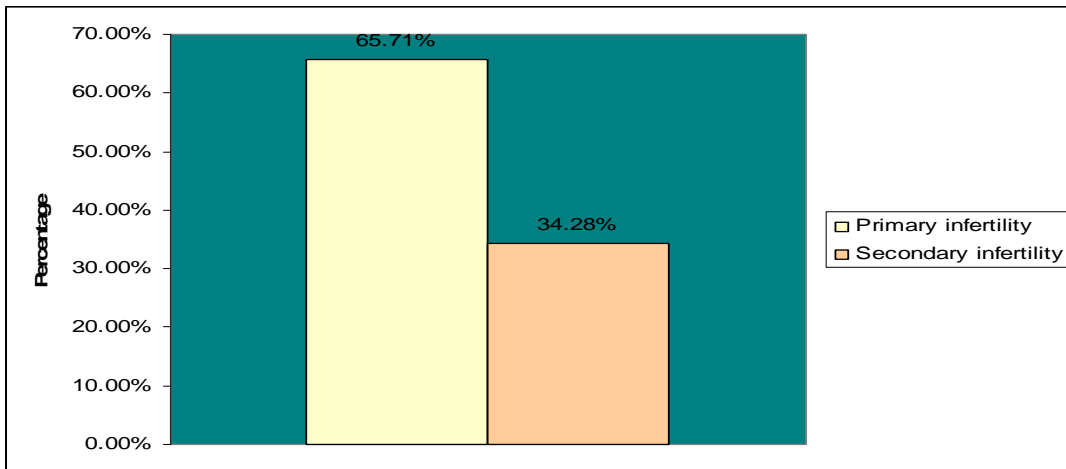
During the past decade there has been a dramatic increase in the number of women seeking infertility evaluation. A complete examination of a woman's internal pelvic structures can provide important information regarding infertility and common gynecologic disorders. Frequently, problems that cannot be discovered by an external physical examination can be discovered by laparoscopy and hysteroscopy, two procedures which provide a direct look

Figure 1 shows that primary infertility was present in 65.71% of the patients while secondary infertility was present in 34.28% cases. Figure 2 reveals that the age range for patients was between 20 to 49 years. Maximum number of patients (48.57%) were present in the group of 20-29 years. While 45.71% of patients were in age group of 30-39 years and 5.71% were above the age of 40 years.

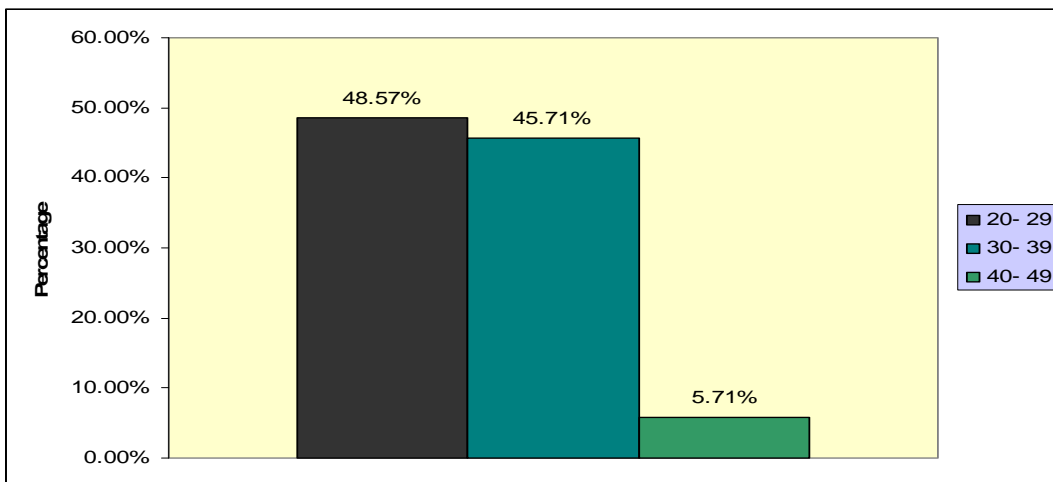
at the pelvic organs. These procedures may be recommended as part of your infertility care, depending on your particular situation. Laparoscopy and hysteroscopy can be used for both diagnostic (looking only) and operative (looking and treating) purposes. Diagnostic laparoscopy may be recommended to look at the outside of the uterus, fallopian tubes, ovaries, and internal pelvic area. Laparoscopy can help physicians diagnose many gynecological problems including endometriosis, uterine fibroids and other structural abnormalities, ovarian cysts, adhesions (scar tissue), and ectopic pregnancy.

Recently, there has been a growing tendency to bypass diagnostic laparoscopy after a normal hysterosalpingogram and instead to start direct infertility treatment [intrauterine insemination (IUI) or IVF] for indications such as unexplained infertility, male subfertility and cervical hostility. Most infertile couples require a diagnostic laparoscopy for complete evaluation of their infertility.

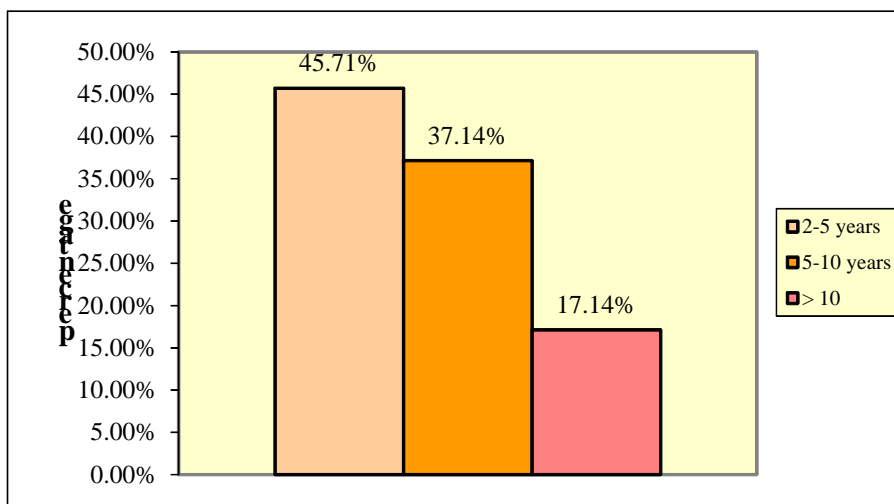
After laparoscopic technique postoperative findings showed that only 12 patients out of 35 were found with tubal blockage. Although significantly high no. Of patients have massive adhesions with tubal damage in my study. This might be due to fact that most of the women in our country take treatment by Dais who



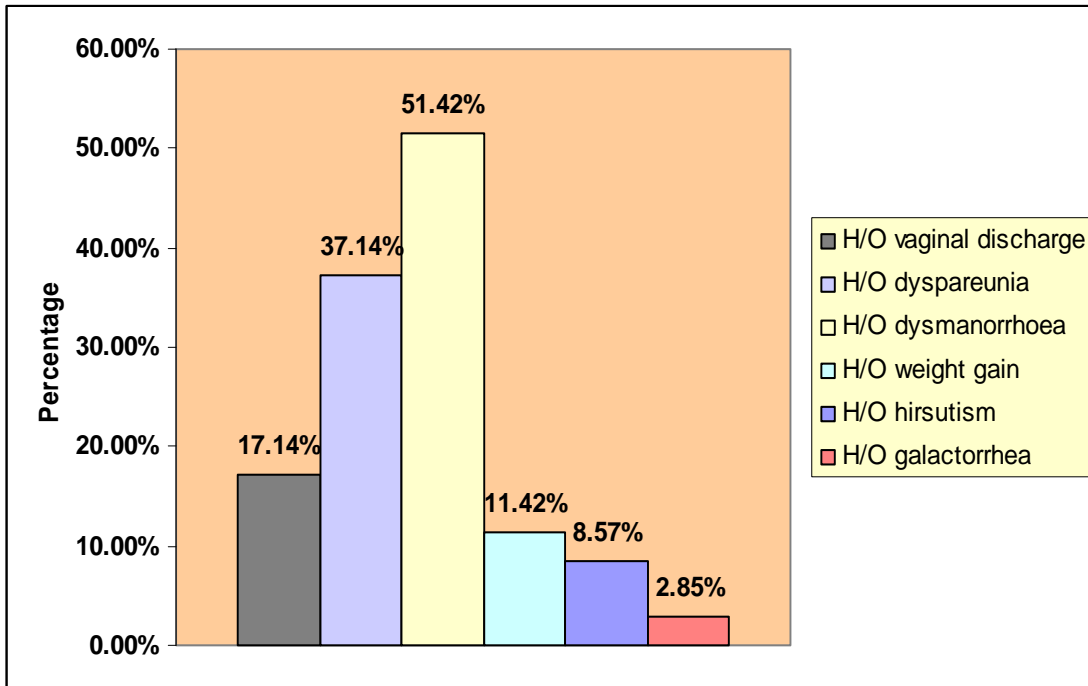
**Fig 1:** Frequency of infertility



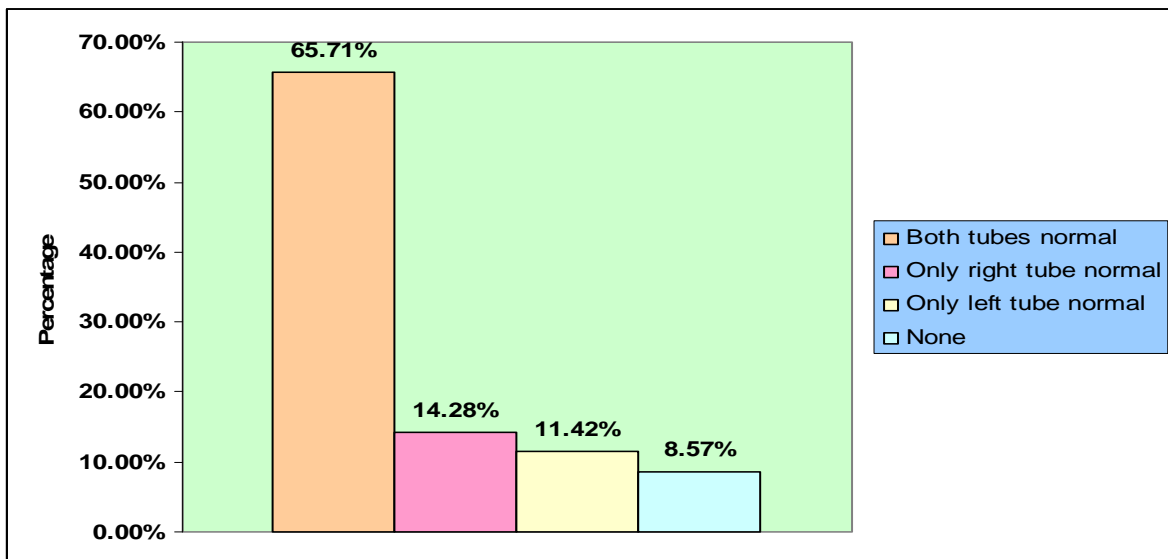
**Fig 2:** Age distribution of patients



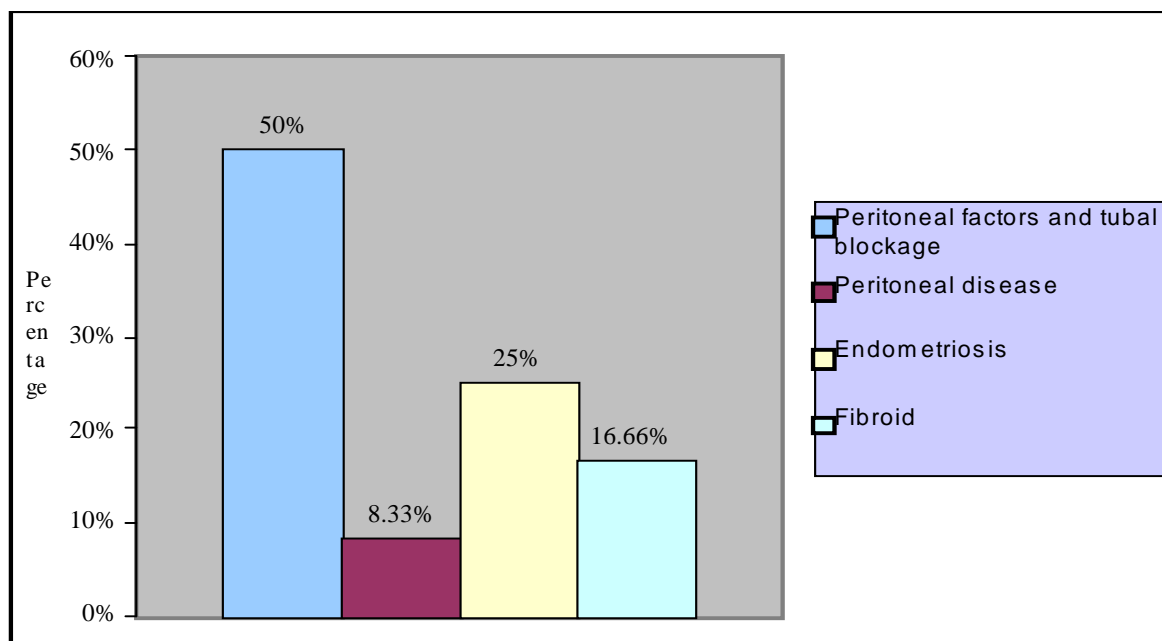
**Fig 3:** Duration of infertility



**Fig 4:** Common complaints of patients



**Fig 5:** Postoperative findings (tubes)



**Fig 6:** Causative factors for tubal blockage

inserts local medications into vagina without any aseptic measures which may lead to overt or subclinical ascending genital tract infection, chronic PID, tubal blockage. Hence the malpractice by paramedics should be discouraged & evaluation of infertile patients should be carried out in specialized centers only.

Study has shown major benefits to the patient in terms of reduced postoperative pain, increased postoperative comfort, reduced hospital stay, quicker return to normal physical activities. Besides these, 5.71% patients suffered with postoperative complications and 8.57% patients with immediate pain.

Laparoscopy is an important diagnostic adjunct in gynecology. Because of the cost and invasive nature of laparoscopy it should not be the first test in the couples diagnostic evaluation. In general, semen analysis, hysterosalpingogram, assessment of ovarian reserve and documentation of ovulation should be assessed prior to consideration of laparoscopy. For example, if the woman has a clear ovulation problem or her

male partner has a severe sperm defect then it is unlikely that laparoscopy will provide additional useful information that will help them conceive.

#### **Conclusion:**

Diagnostic laparoscopy is invaluable technique it must be carried out for complete assessment of female infertility factors. Studies have shown major benefits to the patients, while due to the risk of complications, laparoscopy is frequently postponed to the final stage of infertility evaluation or even after treatment trials have failed. Although utilizing HSG, it may be possible to minimize the use of invasive procedures like laparoscopy while laparoscopy was found to be more useful than HSG in demonstrating pelvic adhesions, peritoneal diseases, endometriosis and fibroids. Diagnostic laparoscopy is very safe and successful procedure. Complications are rare but may occur. Although it is potentially hazardous procedure and may give severe complications but meticulous attention minimize the dangers.

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