LAPAROSCOPY;
ITS ROLE IN DIAGNOSIS OF VARIOUS GYNECOLOGICAL CONDITIONS

ORIGINAL
PROF-1817

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ABSTRACT... Introduction: Diagnostic Laparoscopy is considered to be the gold standard for the evaluation of the pelvis and is considered a safe procedure. Diagnostic Laparoscopy is a technique in the routine investigation and treatment of infertility as well as other gynecological problems. **Objectives:** To determine, Laparoscopic findings in different gynecological conditions, different causes of infertility and complications of laparoscopy Design: Retrospective, descriptive study. **Material And Methods:** We reviewed case records of all patients who underwent laparoscopy for their different Gynecological problems. Data were collected from patient case records in a data entry sheet **Results:** In our study a total of Thirty patients under went laparoscopy for investigation of different gynecological problems. There were 17 patients who have primary infertility and 6 have secondary infertility while 7 presented with Lower abdominal pain. In our study the leading cause of primary infertility was Polycystic Ovarian Disease(29%).Other causes were bilateral tubal blockade (23.53 %) ,17% has PID and fibroid uteri, While one patients shown Endometriosis as well as one patient had no obvious pathology.(5.88 %).On laparoscopic examination of secondary infertility 50% shown Tubal blocked while 16.67 shown Fibroid uterus and PID.One patient had normal pelvic findings(16.67). Regarding patients presented with pain lower abdomen 57.15% has ovarian cyst,28.58% has Ectopic pregnancy while one case(14.29%) had hetrotropic pregnancy. In 24 patients had no complication and recovery was smooth. laparoscopy had to be converted into Laparotomy due to significant hemorrhage in two patient and wound infection was observed in two patients. One patient presented with post operative fever and one presented with abdominal pain. **Conclusions:** Laparoscopy is a valuable diagnostic tool for females in different gynecological problems. The benefit of the laparoscopy to open surgery include less pain, less scarring, less disability and quicker recovery.

Key words: laparoscopy, Infertility.

INTRODUCTION

The laparoscope is a valuable clinical tool that has changed the practice of gynecology. It can confirm a clinical impression, establish a definite diagnosis, follow the course of a disease, and modify therapy.

During the last 35 years, gynecologic laparoscopy has evolved from a limited surgical procedure used only for diagnosis and tubal ligations to a major surgical tool used to treat a multitude of gynecologic indications. Today, laparoscopy is one of the most common surgical procedures performed by gynecologists.

Diagnostic Laparoscopy is considered to be the gold standard for the evaluation of the pelvis and is considered a safe procedure. It may improve pregnancy rates and quality of life. Diagnostic Laparoscopy is a technique in the routine investigation and treatment of infertility as well as other gynecological problems. It allows a complete and detailed examination of the pelvic organs, peritoneum and superficial examination of the bowel, liver and diaphragm. We performed diagnostic Laparoscopy for suspecting different genealogical problems that includes infertility, Chronic Pelvic pain of uncertain cause, pelvic mass, Chronic PID, endometriosis, Acute PID. Ectopic pregnancy, Torsion of tube or ovary.

Determination of tubal patency may also be an issue. If tubal patency is a concern, use of a uterine manipulator with a cannula allows a dilute dye to be injected transcervically (chromopertubation).

Tuboperitoneal factors are responsible for about 30-40% of female infertility. The incidence of tubal disease in infertility varies from country to country. In Pakistan it has been estimated to be about 40%[1].

The prevalence of pelvic inflammatory disease, genital tract tuberculosis, and chronic infection is quite common in our country and hence the incidence of tubal factor in infertile women is high. Ever since Rubin described the tubal insufflation test in 1920 by using CO2 numerous methods have been developed for evaluation of tubal factors. Hysterosalpingography (HSG) and laparoscopic chromopertubation are widely employed[2].

Pelvic pain another problem observed in patients attending gynea opd and it causes includes adhesions, Ectopic pregnancy, PID and other nongyneacological causes. A thorough clinical examination no doubt provides a gynecologist with considerable information but that is not sufficient in arriving at the diagnosis or pinpointing the cause of pelvic pain in all cases. Ancillary aids like imaging studies and direct visualization of the pelvic organs by laparoscopy are often required. In this study we made an endeavor to find out the role of laparoscopy in the evaluation of pelvic pain[3].

Laparoscopic peritubal adhesiolysis and salpingostomy as a laparoscopic procedure as effective as microsurgery but with out the disadvantages of major abdominal surgery[4].

Ovarian endometriosis can be excised or opened, drained by laparoscopy. The main advantages of this technique are shorter hospitalization, decreased morbidity, less post-operative pain, early recovery and better aesthetic results. The main goal of the therapy is to eradicate the endometriotic lesion, to reconstruct normal pelvic anatomy, and to restore the peritoneal environment in order to cure infertility. There are different methods and techniques for testing endometriosis by laparoscopy either electro coagulation or laser may be used. In the surgical approach laparoscopy has proven its worth over laparotomy[5].

Complication of laparoscopy are major vessel trauma, bladder perforation, gut perforation, incisional hernia, wound infection, surgical emphysema, ureteric damage, and pulmonary embolism[6].

Objectives

1. To review important findings on laparoscopy in different gynecological conditions.
2. To determine different causes of infertility on laparoscopy.
3. To determine complications of laparoscopy.

MATERIAL AND METHODS

Design

Retrospective, descriptive study.

Place & Duration

Department of Obstetrics & Gynecology, Independent University Hospital & Independent Medical College, Faisalabad From 1st May 2009 to 31st June 2011.

We reviewed case records of all patients who underwent laparoscopy for their different Gynecological problems between1st May 2009 and 31st June2011. Data were collected from patient case records in a data entry sheet. Intraoperative findings, surgical interventions, intra-operative and post-operative complications during laparoscopy were noted. Presence of tubal obstruction, periadnexal adhesions, ovarian cysts, PID, Fibriods, Ectopic pregnancy and endometriosis were recorded.

Because this was a retrospective cohort study, informed consent by the patients was not needed. Specific approval by the institutional review board was taken before starting the study.

All patients who underwent Laparoscopy for infertility and pain lower abdomen were included in study while patients presented with peritonitis or heamo dynamically unstable were excluded from study.

Blood examination include Hb%,TLC, DLC, ESR. Routine urine examination was performed to rule out diabetes mellitus and UTI. Blood grouping for ABO and Rh, types, screening for lungs (X-ray chest PA view) was also performed.

All patients were admitted one day before procedure and they were instructed to take light evening meal. Fitness for general anesthesia was assessed by anesthesiologist in the evening. Consent from the patient and husband was taken. After midnight they were kept.

NPO. Perineum were shaved. Dress was changed early in the morning. General anesthesia with endotracheal incubation was needed in all of them. Modified lithotomy position was made. Abdomen, perineum and vagina were cleaned. The patients were drapped in towel. Bimanual examination was performed following anesthesia. Surgeon stood on the left of the patient. An assistant held anterior lip of the cervix with tanaculum and uterine elevator was introduced. A 2mm small nick was given at inferior margin of the umbilicus. Abdominal wall was lifted up with the left hand . Laparoscope introduced by open mathod. Pneumoperitoneum apparatus was attached through a rubber tubing and gas source was turned on. Pressure less than 15mmHg indicated free flow of gas and about 2 liters of gas was introduced .The fiber optic light cable was attached to the laparoscope and it was introduced through the canula into the peritoneal cavity. All the pelvic organs were inspected thoroughly starting from anterior surface of uterus, uterovesical space, both ovaries with tubes, both surfaces of broad ligaments, posterior surface of uterus, pouch of Douglas and uterosacral ligaments. Adhesions were also noted. In patients in which visualization of inferior aspect of ovaries and fimbrial end of tube was not possible with single puncture, a double puncture laparoscopy was done. The second incision of 5mm was made in midline above the pubic hair line.

To evaluate the patency of the tubes, 10 to 15ml of methylene blue was injected by the assistant and surgeon inspected the dye entering in the tubes and its free spill through fimbrial end.

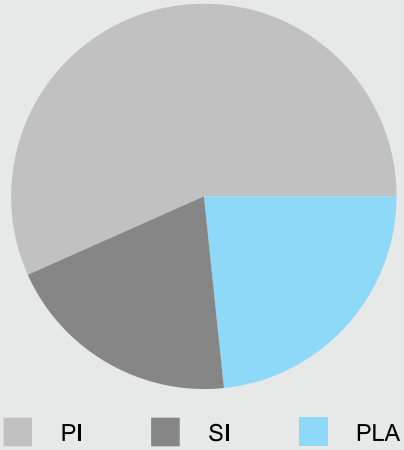
RESULTS

In our study a total of Thirty patients under went laparoscopy for investigation of different gynecological problems from 1st May 2009 to 31st June 2011.

Infertility (primary and secondary) and Pain lower abdomen were two major indications for laparoscopy.

There were 17 patients who have primary infertility and 6 have secondary infertility. Therefore the percentage of patients in case of primary infertility was 56% and in case of secondary infertility it was 20% while 23% presented with Lower abdominal pain.(Figure 1).

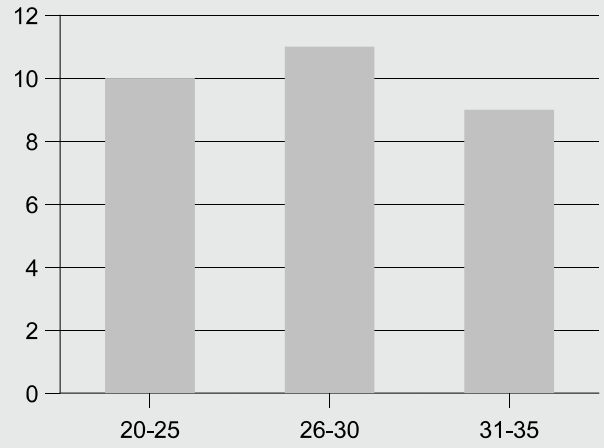
Fig-1. Gynecological problems



PI (Primary Infertility) SI (Secondary infertility)

Regarding the ages of patients on which laparoscopy was performed as shown in figure no 2. Minimum age was 20 years and maximum age was 35 year. Most of patients presented between the ages of 26 to 30 years.(Figure 2)

Fig-2. Ages of patients



In our study the leading cause of primary infertility was Polycystic Ovarian Disease (PCOD)(29%).Other causes were bilateral tubal blockade (23.53 %), 17% has PID and fibroid uteri, While one patients shown Endometriosis as well as one patient had no obvious pathology.(5.88 %)(Table No I).

Table-I. Laparoscopic findings in primary infertility

Laparoscopic findings	No. of pts.	%age
PCOD	05	29.42
Tubal blockde	04	23.53
Fibroid Uterus	03	17.64
PID	03	17.64
Endometriosis	01	5.88
Normal pelvis	01	5.89

On laparoscopic examination of secondary infertility 50% shown Tubal blocked while 16.67% shown Fibroid uterus and PID. One patient had normal pelvic findings (16.67).(table-II).

Table-II. Laparoscopic findings in secondary infertility

Laparoscopic findings	No. of Pts.	%age
Tubal blockde	03	50
PID	01	16.67
Fibroid uterie	01	16.67
Normal pelvis	01	16.67

Table-III. Laparoscopic findings in pts of pain lower abdomen

Lap. Findings	No. of pts	%age
Ovarian cyst	04	57.15
Ectopic pregnancy	02	28.58
Heterotropic pregnancy	01	14.29

Regarding patients presented with pain lower abdomen 57.15 % has ovarian cyst,28.58 % has Ectopic pregnancy while one case(14.29) had hetrotropic pregnancy.

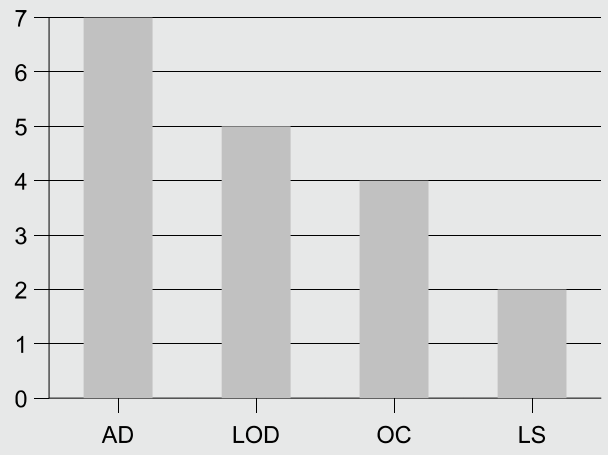
Different therapeutic procedures were perfomed 1n total 18 patients. During which laparoscopic ovarian drilling(LOD) in (5), adhesiolysis (7), salphingostomy (2) and ovarian cystectomy (4) was be performed in women while having minimal complications, short hospital stay and no mortality.

On chromopertubation, unilateral tubal blockage was in two patients and bilateral tubal blockage in four patients in case of primary infertilty. While four patients bilateral tubal blockage in case of secondary infertility.

As illustrated in Table-IV, 24 patients had no complication and recovery was smooth. laparoscopy had to be converted into. Laparotomy due to significant hemorrhage in two patient and wound infection was observed in two patients.

One patient presented with post operative fever and one presented with abdominal pain.

Fig-3. Therapeutic procedures performed



AD (Adhesiolysis) LOD (Laparoscopic Ovarian Drilling) OC (Ovarian Cystectomy) LS (Laparoscopic Salphingostomy)

Table-IV. Complications of laparoscopy

Complications	No. of pts.	%age
Wound infection	02	6.66
Fever	01	3.33
Abdominal pain	01	3.33
Conversion to laparotomy	02	6.66
No complication	24	80

DISCUSSION

Infertility and pelvic pain are common complaints that warrant evaluation, and oftentimes necessitate scrutiny by laparoscopy[7,8].

As this paper demonstrates, more than one disorder may be identified at evaluation of infertility. The most prevalent disorders were PCOD(29.42%) and Tubal Blockage(23.53 %), followed by fibroid uteri (17.64%) and PID(17.64%) in our community.

Laparoscopy is the best technique for diagnosing different gynecological diseases. It allows visualization of all the pelvic organs and permits detection of uterine fibroids, ovarian cysts, pelvic adhesions and pelvic endometriosis. Laparoscopy also allows careful assessment of the external architecture of the tubes and in particular the visualization of the fimbria. . Compared with laparotomy, multiple studies have shown laparoscopy to be safer, to be less expensive, and to have a shorter recovery time. When a laparoscopic procedure involves minimal intra-abdominal surgery (eg, diagnostic laparoscopy), both postoperative discomfort and the risk of complications may more closely resemble a minor procedure than a major procedure. Among the many investigations available to evaluate the female partner of the infertile couple, laparoscopy is relatively recent. It has often been used in the evaluation of patients with infertility where other diagnostic methods have failed to come up with a cause. In addition, it has the advantage of being a 'see and treat' modality.

Our study included patients from urban and rural areas Of Faisal Abad . In our study PCOD and tubal factor were the most common causes of primary infertility and PCOD Was 29.42% while tubal blocked contribute (23.53%) in cases of primary infertilty.While in case of secondary infertility bilateral tubal blocked(50%) most common cause. So in our study Tubal factor as well PCOD (primary infertility) are most common causes as compared to one study conducted at Mayo Hospital Lahore and another at Holy Family Hospital Rawalpindi [9,10] where the incidence of tubal factor was 30% and 47.8% respectively to be important causes of infertility.

As our study shown that PCOD And Tubal Blockage are important factors in primary and secondary infertility our results are similar to study conducted by Aziz N. As well as in study of Naz T et al[11,12].

The incidence of unexplained infertility was 5.89% in case of primary infertility and 16.67% in case of secondary infertility. These patients had normal tubes and ovaries and they had no sign of pelvic pathology. The incidence of unexplained infertility was 0.26% in a study conducted by Collins and Rowe[13].

In patients suspected of Ectopic pregnancy, laparoscopy was found to be a useful and quicker procedure in establishing a definite diagnosis.

There is a significant amount of high quality evidence regarding the role of laparoscopic surgery in Ectopic pregnancy (EP). In confirmed EP, laparoscopy should be performed unless hemodynamics instability is present. It is fast, cheaper and fertility outcome is comparable to laparotomy.

Furthermore, hospitalization and sick leave times are shorter and adhesion development reduced when compared to laparotomy[14].

If tubal rupture has occurred, a laparoscopic salpingectomy should be performed. However, in cases of unruptured tubal pregnancy, a tube preserving operation should be considered[15].

In our study out of three cases of Ectopic pregnancy one case was of hetrotropic pregnancy in natural conception. This is a rare situation with a reported prevalence of 0.08% in normal conception.

Any ovarian cysts found during laparoscopy can be treated laparoscopically. Laparoscopic surgery to repair ovarian torsion is superior to open surgery and is suitable even in pregnancy[16].

In conclusion, if gynecological disorders are the suspected cause of pain, diagnostic laparoscopy should be performed, as frequently simultaneous therapy will be possible.

We performed various Laparoscopically therapeutic procedures that includes LOD, Adhesiolysis, Ovarian cystectomy, Lap.Salphingectomy.

Regarding the therapeutic efficacy of LOD for poly cystic ovarian disease is much better option than other non laproscopic modities as shown in study conducted by Flyckt RL et al,[17] And Cleemann L et al[18].

Similarly laparoscopic Ovarian cystectomy has better result as compared to other treatment strategies. A study conducted by Carmnoa F et al Shown that Laparoscopic Ovarian cystectomy versus laser vaporization in the treatment of ovarian endometriomas shown low recurrence rate in pts of endometrosis undergoing Laparoscopic Ovarian cystectomy[19].

Lap. Salphingectomy was done in cases of Ectopic pregnancy. A study conducted by Yoon DS et al shown no difference single-port versus conventional lap.salphingectomy[20].

Adhesioolysis was done for treatment of adhesions due different etiologies like in PID While in some cases they were definitely postoperative or endometriotic in origin. Adhesions were the most frequent finding in the review by Mara et al[21].

As far as the complication of laparoscopy are concerned,24 patients had no complication. After the procedure only 06 patients had minor problems which were resolved in short period of time. The complication rate for the procedure for diagnostic laparoscopy was (1.81%,), minor (1.37%,), major (1.82%) and advanced (4.82%) laparoscopic procedures in a study conducted by Tarik A et al[22]. In another study by Chapron et al[6] the incidence of complications was 28.6%.The complication rate is high in cases of major laparoscopic procedures in which laparoscopic surgery is associated with significant morbidity and mortality.

CONCLUSIONS

Laparoscopy is a valuable diagnostic tool for females in different gynecological problems. Laparoscopy is less invasive and more convenient. The benefit of the laparoscopy to open surgery include less pain, less scarring, less disability and quicker recovery. It has more advantages than disadvantages for complete assessment of female infertility and lower abdominal pain. Almost any thing can be done by mean of laparoscopy but we must not forget the golden rule that good clinical judgment is always more important than technical skill.

REFERENCES

1. Kore S, Hegde A, Nair S et al. **Sonoghraphy for assessment of tubal potency: our experience.** J Obstet and Gynecol India 2000;50 (2);63-6.
2. Randolph JR, Ying YK, Maier DB et al. **Comparison of real-time ultrasonography, hysterosalpingography and laparoscopy/ hysteroscopy in the evaluation of utetine abnormalities and tubal patency.** Fertil Steril 1986;46:828-32.
3. Newham AP, van der Spuy ZM, Nugent F. **Laparoscopic findings in women with chronic pelvic pain.** S Afr Med J 1996;86:1200-3.
4. Fatum M, Rojansky N. **Laparoscopic surgery during pregnancy.** Obstet Gynaecol Surv 2001; 56:50-59. Ovarian.
5. Admson DG, Gurd SJ, Pasta DJ, Rodriguez DB.CravelloL, Devictor B, Durif L, Sambuc R, Blane B. **Evaluation of cost of laparoscopic surgery in Gynaecology.** Gynaecol Obstet Fertil 2001; 29:21-27.
6. Chapron C, Pierre F, Querlen D, Dubinson JB. **Complication of laparoscopy in Gynaecology.** Gynaecol Obstet Fertil 2001; 29605-12.
7. Lundberg WI, Wall JE, Mathers JE. **Laparoscopy in evaluation of pelvic pain.** Obstet Gynecol 1973; 42:872-876.
8. Portuondo JA, Irala JP, Ibanez E, Echanojauregui AD. **Clinical selection of infertile patients for laparoscopy.** Int J Fertil 1984; 29:234-238.
9. Shagufta S, Saad R. **Prevalence of infertility factors in Pakistan.** Pak J Obstet Gynaecol 1993; 6:17-34.
10. Tabinda Rana. **Role of laparoscopy in Gynecological diagnoses.** Pak J Obstet & Gynaecol 1992; 5 (2):31-43.
11. Aziz N. **Laparoscopic evaluation of female factors in infertility** J Coll Physicians Surg Pak. 2010

Oct;20(10):649-52.

12. Naz T, Hassan L, Gulmeen, Nighat F, Sultan S. **Laparoscopic evaluation in infertility.** J Coll Physicians Surg Pak. 2009 Nov;19(11):704-7.

13. Collins JA, Rowe TC. **Age of the female partner is a prognostic factor in prolonged unexplained infertility a multi center study fertile steril** 1989; 52:15-20.

14. Lundorff P, Thorburn J, Hahlin M, Kallfelt B, Lindblom B. **Laparoscopic surgery in ectopic pregnancy. A randomized trial versus laparotomy.** Acta Obstet Gynecol Scand. 1991;70:343–348.

15. Vermesh M, Silva PD, Rosen GF, Stein AL, Fossum GT, Sauer MV. **Management of unruptured ectopic gestation by linear salpingostomy: a prospective, randomized clinical trial of laparoscopy versus laparotomy.** Obstet Gynecol. 1989;73:400–404.

16. Yuen PM, Yu KM, Yip SK, Lau WC, Rogers MS, Chang A. **A randomized prospective study of laparoscopy and laparotomy in the management of benign ovarian masses.** Am J Obstet Gynecol. 1997;177:109–114.

17. Flyckt RL Goldberg JM . **Laparoscopic ovarian drilling for clomiphene-resistant polycystic ovary syndrome.** Semin Reprod Med. 2011 Mar;29(2):138-46.

18. Cleemann L, Lauszus FF, Trolle B. **Laparoscopic ovarian drilling as first line of treatment in infertile women with polycystic ovary syndrome.** Gynecol Endocrinol. 2004 Mar;18(3):138-43.

19. Carmona F, Martínez-Zamora MA, Rabanal A, Martínez-Román S, Balasch J. **Ovarian cystectomy versus laser vaporization in the treatment of ovarian endometriomas: a randomized clinical trial with a five-year follow-up.** Fertil Steril. 2011 Jul;96(1):251-4. Epub 2011 May 14.

20. Yoon BS, Park H, Seong SJ, Park CT, Jun HS, Kim IH. **Single-port versus conventional laparoscopic salpingectomy in tubal pregnancy: a comparison of surgical outcomes.** Eur J Obstet Gynecol Reprod Biol. 2011 Jul 7. [Epub ahead of print]).

21. Mara , Kresch Kresch AJ, Seifer DB, Sachs LB . **Laparoscopy in 100 women with chronic pelvic pain.** Obstet Gynecol1984;64:672-4.

22. Tarik A, Fehmi C. **Complications of gynaecological laparoscopy--a retrospective analysis of 3572 cases from a single institute.** J Obstet Gynaecol. 2004 Oct;24(7):813-6.

Article received on: 23/07/2011 Accepted for Publication: 05/10/2011 Received after proof reading: 03/01/2012

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Article Citation:
Mussarat N, Qureshi S, Shuja A, Roohi M. Laparoscopy; its role n diagnosis of various gynecological conditions. Professional Med J Feb 2012;19(1): 033-039.

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- Viqar Ashraf, Shehla M. Baqai, LAPAROSCOPY; DIAGNOSTIC ROLE IN INFERTILITY (Original) Prof Med Jour 12(1) 74-79 Jan, Feb, Mar, 2005.