ORIGINAL RESEARCH PAPER

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COMPARISON BETWEEN ABDOMINAL AND LAPAROSCOPIC MANAGEMENT FOR RUPTURED ECTOPIC PREGNANCY

KEY WORDS: Ectopic pregnancy; Laparoscopic surgery, Laparotomy

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ABSTRACT

To compare the laparoscopic approach with laparotomy in the treatment of ectopic pregnancy, a retrospective analysis involving 155 patients with ectopic pregnancies was done. The aim of this study was to compare the safety and efficacy of laparoscopic surgery for ectopic pregnancies. 65 patients underwent laparoscopic management while 90 patients were managed by conventional laparotomy. In the laparoscopic group, the postoperative morbidity and post-hospital stay were significantly less. Although laparoscopic surgery for ectopic pregnancies is a new approach and it is not widely practised in service hospitals, it has more advantages than open surgery and it has been well accepted by the surgeons and patients. It is a safe and feasible approach.

INTRODUCTION

Extrauterine pregnancy defines a pregnancy where fertilized ovum is implanted and grows outside of the uterine cavity endometrium. An ectopic pregnancy is associated with certain demise of gestation, a threat to a woman's life, and a subsequent successful pregnancy in less than 50% of patients. In India more than 80% of ectopic pregnancies are diagnosed after rupture. With high resolution trans-vaginal sonography, serum β-HCG assay and increased vigilance of the clinician, more and more cases are being diagnosed before rupture.[1]

Both laparotomy and laparoscopic surgery are the common surgical methods for the clinical treatment of acute ruptured ectopic pregnancy. Laparotomy operation is simple, can clearly reveal operation field, and is currently the most widely used way of ectopic pregnancy emergency surgery.[2,3] Laparoscopic surgery is the operation method rising in recent years, the endoscopic equipment enables surgical operation under minimally invasive condition, the vision is clearer and the operation is more delicate, it can choose oviduct excision or embryo removal retaining oviduct, and it is suitable for women at childbearing age and with fertility requirements.[4,5]

The classic triad of amenorrhea, pain, and vaginal bleeding has been strongly associated with the clinical presentation of ectopic pregnancy, however, 50% of patients with ectopic pregnancy present without this triad. They may have symptoms associated with early pregnancy, including nausea, fatigue, lower abdominal pain, painful uterine cramping, recent dyspareunia, and shoulder pain.[6]

MATERIAL AND METHODS

A retrospective analysis involving 150 patients with ectopic pregnancy admitted between June 2020 to July 2022 in GMCH, Miraj. Out of total, 65 patients underwent laparoscopic management while 90 patients were managed by conventional laparotomy.

The initial diagnosis of ectopic pregnancy was made through a combination of clinical examination, βHCG assay and transvaginal ultrasonography. The patients were treated by laparoscopy or laparotomy based upon the haemodynamic status of the patient, experience of the surgeon and the availability of endoscopic equipment. The details of procedure, operating time and hospital stay were noted.

RESULTS

A Retrospective analysis involving 155 patients with ectopic pregnancy admitted between June 2020 to July 2022 in GMCH, Miraj. Out of total, 65 (42%) patients underwent laparoscopic management while 90 (58%) patients were managed by conventional laparotomy.

The mean age of patients was 30.21±5.66. Majority of patients belong to age 20 – 30 years. Among 155 patients 62(40%) were primigravida and 93(60%) were multigravida. The most common clinical signs and symptoms is abdominal pain which is 69 patients (44.44%) patients and 40 of them underwent laparotomy.

The most common site of ectopic pregnancy located in tubal 121 (78.88%); where 71 of them underwent laparotomy. The most common type of surgery is a salpingectomy laparotomy with a total of 79 (87.77%) patients and 55(84.61%) patients underwent laparoscopic salpingectomy.

Data of Demographics and Obstetrics of Woman with Ruptured Ectopic Pregnancy

Variable	No. Of patients	Percentage
Maternal Age		
20 – 30 years old	87	56.13%
30 - 40 years old	53	34.19%
>40 years old	15	9.67%
Mean Age	30.21±5.66	
Parity		
Primipara	62	40%
Multipara	93	60%
Pregnancy Weeks		
< 8 Weeks	42	27.09%
≥8 weeks	113	72.90%

Data of Clinical Signs & Symptoms in Laparotomy and Laparoscopy of Women with Ruptured Ectopic Pregnancy

Clinical Signs & Symptoms	Laparotomy No. (%)	Laparoscopy No. (%)
Vaginal Bleeding	24(26.67%)	18 (27.69%)
Abdominal Pain	40 (44.44%)	29 (44.61%)
Vomiting	21 (23.34%)	18 (27.69%)
Asymptomatic	05 (5.55%)	0
Total	90(100%)	65(100%)

Data of Perioperative Findings in Laparotomy and Laparoscopy of Women with Ruptured Ectopic Pregnancy

Site of Ectopic Pregnancy	Laparotomy No. (%)	Laparoscopy No. (%)
Tubal	71(78.88%)	50(76.92%)
Ovarian	19(21.11%)	13(20.00%)
Cornual	00	02(3.0%)
Total	90 (100%)	65(100%)

Type of Surgery		
Salpingectomy	79(87.77%)	55(84.61%)
Salpingo-oophorectomy	11 (12.22%)	10(15.38%)

DISCUSSION

In this study, there are 90 (58%) patients that underwent laparotomy and 65 (42%) patients underwent laparoscopy. This result is correlated with the study conducted by Kumar et al.,[7] where laparotomy surgery is the preferred method of management of ectopic pregnancy, from a total of 63 patients, 37 (58,7%) patients underwent laparotomy while 26 (41,3%) patient underwent laparoscopy. In another study reviewed by Kumar et al. [9], the surgery is mostly laparotomy, from a total of 101 patients, 76 (75, 3%) patients underwent laparotomy. The result is not compatible with the study conducted by M. Nabil et al., where management of ectopic pregnancy through laparoscopic surgery offers more benefits than laparotomy, as it is the gold standard for direct visualization of ectopic gestation. The benefits are lesser blood loss, less need for blood transfusion, less need for postoperative analgesia and shorter duration of hospital stay.[8] However, not all are suitable for laparoscopy; this includes the contraindication of laparoscopy, the surgeon's laparoscopy's skill, and experience, or severe pelvic adhesion.

In this study, the most common clinical signs & symptoms are abdominal pain which is found in 69 (44%) patients, followed by vaginal bleeding which is 42 (26.67%) patients and. This result is conformable with Shresta et al.,[9] the most common clinical signs & symptoms are abdominal pain which is found in all 32 patients, followed by amenorrhea which is 21 patients and vaginal bleeding which is found in 20 patients. In that study, patients who underwent laparotomy or laparoscopy mostly complained of abdominal pain. As we know, symptoms of ectopic pregnancy are classified into acute, such as short duration amenorrhea, spotting, abdominal and shoulder-tip pain; and chronic, such as amenorrhea, dull aching lower abdominal pain, vaginal bleeding, dysuria, urine retention, and rectal tenesmus.[10] We should consider another diagnosis as presentations often mimics other gynecological disorders and gastrointestinal or urinary tract disease, including appendicitis, salpingitis, ruptured corpus luteum or follicular cysts, threatened or inevitable spontaneous abortion, ovarian torsion, and urinary tract infection.[11]

The most common site of ectopic pregnancy is tubal with 121 (78.06%) patients, followed by ovarian with 32 (20.64%) patients. Laparotomy was done on 71 patients with tubal pregnancy, while the rest underwent laparoscopy.

In a study by Bahat et al., [12] the most common site of ectopic pregnancy is tubal which is 191 (94,5%) from a total of 202 patients, followed by cornual which is 7 (0,03%) and ovarian which is 4 (0, 02%) patients. The study also reports that laparotomy is still the preferred method of ectopic pregnancy in any site. It is the same with the study conducted by Go Udigwe et al.,[13] where the ectopic pregnancy mostly happened in the ampulla of the fallopian tube; this inhibits the function of the fallopian tube thus inhibits normal implantation of a fertilized ovum within the uterine cavity.[14]

For the type of surgery, salpingectomy is the surgery most commonly performed, with 134 (87.77%) patients and 79 among them is done by laparotomy, while the rest underwent laparoscopy. In the study by Bahat et al.,[12] salpingectomy is still dominant, either through laparotomy or laparoscopy, with a total of 174 (86.1%) out of 202 patients. The result is also similar to the study conducted by M Nabil et al., where linear salpingostomy was the main procedure performed in both laparoscopy and laparotomy.[8]

In this study, there is no correlation between the duration of postoperative hospital stay and methods of surgery. This differs from the study by Jahan et al.,[15] which states there is a statistical correlation, where patients who underwent laparoscopy have a shorter duration of postoperative hospital stays compared to laparotomy. This might be caused by the huge difference of patients, wherein this study 19 patients underwent laparotomy and 9 patients underwent laparoscopy. Meanwhile, in the study by Jahan et al.,[15] 70 patients underwent laparoscopy and 19 patients underwent laparotomy.

CONCLUSION

From this study, we conclude that laparotomy is still the preferred method of surgery for managing ruptured ectopic pregnancy in India. This might be caused by a lack of equipment or operator skills in managing ruptured ectopic pregnancy with laparoscopy. Laparoscopy has a smaller incision, therefore minimal bleeding and transfusion are needed compared to laparotomy. Patients undergoing laparoscopy are hemodynamically stable, requires minimal duration of hospital stay.

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