



ROLE OF LAPAROSCOPIC SURGERY IN ECTOPIC PREGNANCIES

Obstetrics & Gynaecology

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ABSTRACT

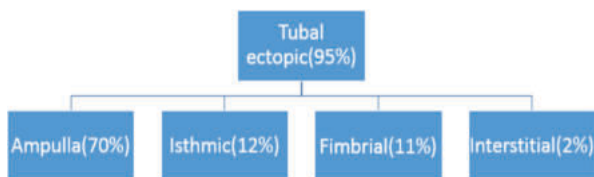
Objective: The main aim of this study was to evaluate the role of laparoscopy in the diagnosis and management of ectopic pregnancy. **Materials and Methods:** The study was Prospective observational study, conducted in the department of obstetrics and gynecology, Lalla Ded hospital Srinagar, from February 2021 to February 2023. Patients with USG documented ectopic pregnancies and who were haemo-dynamically stable, were included in the study. Total of 90 patients were recruited in the study who were admitted in our hospital as out-patient or emergency basis. Complete history, clinical examination, routine blood investigations, beta-hCG and ultra-sonography were carried out. Data was analyzed using Epi Info. Categorical variables were summarized as percentages and continuous variables were summarized as mean $\pm$ SD. **Results:** Majority of the patients of ectopic pregnancy belonged to the age group of 27-30 years. 38 patients (42.22%) were nulliparas. 77 patients (85.55%) presented with pain abdomen. 62 patients (68.88%) in this study had no history of previous abortion. Only 9 patients (10%) had history of previous ectopic. 74 patients (82%) had ectopic pregnancy in the ampulla. 30 (33.33%) patients had ruptured pregnancy, 54 patients (60%) had un-ruptured and 6 patients (6.66%) had tubal abortion. Only 13 patients (14.44%) had adhesions in the pelvic organs. Salpingectomy was the most common procedure done in 43 patients (47.77%), salpingostomy was done in 36 patients (40%) while milking was done in 11 patients (12.22%) of the patients. In patients with ruptured ectopic pregnancy, salpingectomy was the most common procedure done in 25 patients (83.33%) while in un-ruptured pregnancy, salpingostomy was the most common procedure done in 33 patients (61%). **Conclusion:** This study shows that majority of the patients with ectopic pregnancy are primi-gravidas who are in their late 30's. Majority of the patients had ectopic pregnancy in the ampullary region of the fallopian tube. Laparoscopy is not only beneficial in the un-ruptured group but it has advantages over laparotomy in case of ruptured ectopic pregnancy also provided the patient is haemo-dynamically stable.

KEYWORDS

laparoscopy, ruptured and un-ruptured pregnancy and haemo-dynamic stability.

INTRODUCTION:

Ectopic pregnancy means implantation of a fertilized ovum outside the endometrial lining of the uterus.



Remaining 5% are in the ovary, peritoneal cavity, cervix or prior scar.¹

Risk factors include fallopian tube related factors [abnormal fallopian tube anatomy, surgeries for a prior pregnancy, previous tubal ectopic², congenital fallopian tube anomalies, salpingitis isthmica nodosa³], STDs, ART^{4,5} and contraceptive failure.

Potential outcomes from this include tubal rupture, tubal abortion, or pregnancy failure with resolution. Another possible outcome is chronic ectopic where trophoblasts die early, and thus serum beta hcg levels are negative or are low and static.

Clinically patients present varied presentation. On one extreme patient can be perfectly alright while as on the other extreme patient can have the features of shock.

Diagnosis of ectopic is by estimation of serum beta hcg, adnexal mass identified by sonography and combination of beta hcg and ultrasonography. Serum progesterone level $>25\text{ng/ml}$ is suggestive of viable intrauterine pregnancy whereas $<5\text{ng/ml}$ suggests an ectopic or abnormal intrauterine pregnancy⁶. Laparoscopy is the gold standard-direct visualization of fallopian tubes and pelvis by laparoscopy offers a reliable diagnosis in most cases of suspected ectopic pregnancy.

Ectopic pregnancy is managed by either medical or surgical modality depending on the clinical circumstances. Surgical management is done by laparotomy or laparoscopy. Laparoscopy is preferred surgical

approach for ectopic pregnancy unless a Women is hemodynamically unstable.

This is supported first by comparable subsequent uterine pregnancy rates and tubal patency rates in those undergoing salpingostomy completed either by laparoscopy or by laparotomy⁷. Second, laparoscopy has lower infection, adhesion, and thromboembolism risks and faster recovery times than laparotomy.

Two procedures- salpingostomy or salpingectomy_ are options. Several randomized trials compared laparoscopic outcomes between two procedures and found that subsequent cumulative rates of ongoing pregnancy rates by natural conception did not differ significantly between two procedures.

Persistent trophoblast is rare following salpingectomy but complicates 5 to 15% of salpingostomy cases^{8,9}. Incomplete trophoblast removal can be identified by stable or rising beta hcg levels¹⁰.

METHODOLOGY

This study was a prospective observational study conducted over a period of two years from February 2021 to February 2023 in the department of Obstetrics and Gynecology LD hospital Srinagar. A total of 90 patients presenting with clinical features of ectopic pregnancy and later diagnosed by USG as adnexal mass and positive serum beta hCG who were hemo-dynamically stable were included in the study.

RESULTS

Majority of the patients in our study belonged to the age group of 27-30 years-33 patients (36.6%). Minimum and maximum age was 22 and 38 years respectively (Table 1). Majority of the patients were nulli-para-38 patients (42.22%) while others were having parity between para 1 and para 3 (Table 2). Most common presenting complaint was pain abdomen (77) associated with either bleeding per vagina or spotting (Table 3). 62 patients (68.88%) had no previous history of abortions while 28 patients (31.12%) had 1-3 previous abortions (Table 4). In this study only 9 patients (10%) had a history of previous ectopic

pregnancy (Table 5). On laparoscopy it was seen that 74 patients (82%) had ectopic in ampullary region of fallopian tube, 9 patients (10%) had ectopic in isthmus, 6 patients had ectopic at fimbrial end and only one patient had ectopic in interstitial part of the tube (Table 6). 54 patients (60%) in this study had un-ruptured ectopic on laparoscopy, 30 patients (33.33%) had ruptured ectopic and 6 (6.66%) had tubal ectopic confirmed by laparoscopy (Table 7). Adhesions were seen in only 13 patients (14.4%) in our study (Table 8). In our study, salpingectomy was the most common procedure done in 43 patients (47.77%), salpingostomy was done in 36 patients (40%) and milking was done in 11 patients (12.22%- Table 9). Salpingectomy was also the most common procedure done in 25 patients who presented with ruptured ectopic pregnancy (83.33%) whereas the patients in un-ruptured group salpingostomy was the most common procedure. Salpingostomy was done in 33 patients (61%- Table 10)

Table 1: Age distribution of study patients

Age (years)	Number of patients	Percentage
22-26	21	23.3
27-30	33	36.6
31-34	24	26.6
35-38	12	13.3
Total	90	100

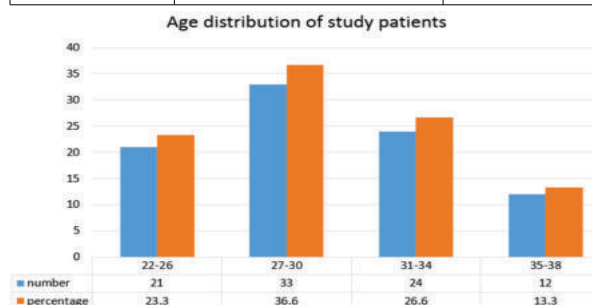


Table 2: Distribution of study patients as per parity

Parity	Number of patients	Percentage
Nullipara	38	42.22
Para 1	31	34.44
Para 2	14	15.55
Para 3	7	7.77
Total	90	100

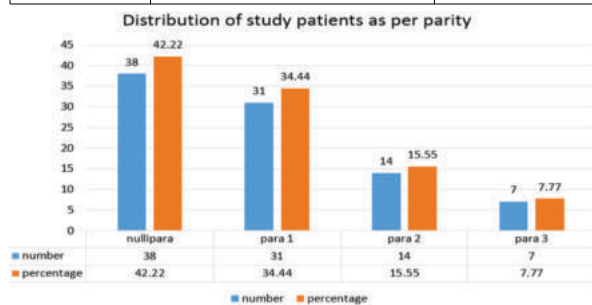


Table 3: Showing chief complaints at presentation among study patients

Chief complaint	Number of patients	Percentage
Bleeding PV	36	40
Spotting	43	47
Pain abdomen	77	85.55

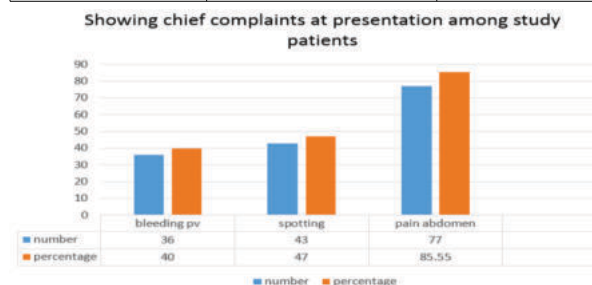


Table 4: Showing the number of abortions among study patients

Number of abortions	Number of patients	Percentage
0	62	68.88
1	18	20
2	7	7.77
3	3	3.33

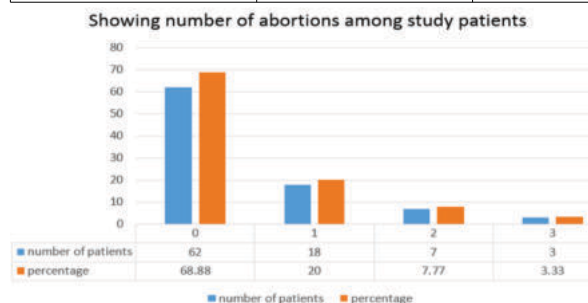


Table 5: Showing patients with previous ectopic pregnancy

History of previous ectopic	Number of patients	Percentage
Yes	9	10
No	81	90
Total	90	100

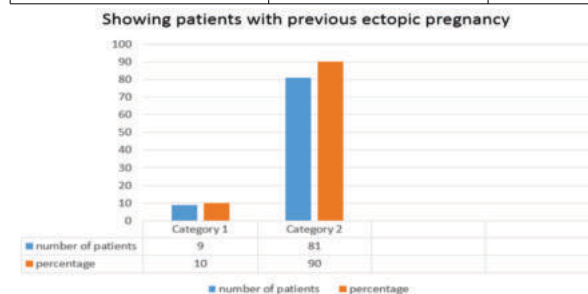


Table 6: Showing the site of ectopic pregnancy by laparoscopy in study patients

Site	Number of patients	Percentage
Ampullary	74	82
Isthmic	9	10
Fimbrial	6	6.66
Interstitial	1	1.11

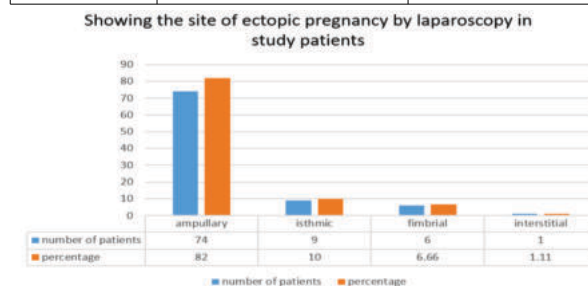


Table 7: Showing the type of ectopic pregnancy by laparoscopy in study patients

Type of ectopic	Number of patients	Percentage
Ruptured	30	33.33
Un-ruptured	54	60
Tubal abortion	6	6.66

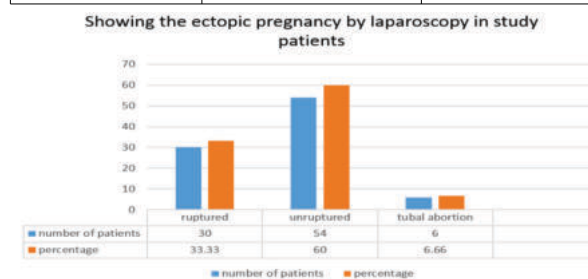
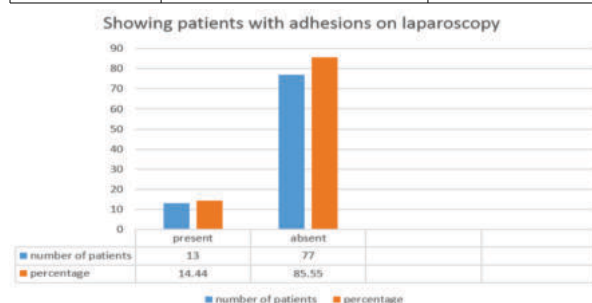
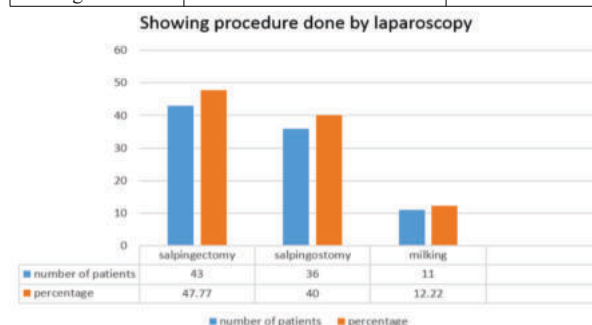


Table 8: Showing patients with adhesions on laparoscopy

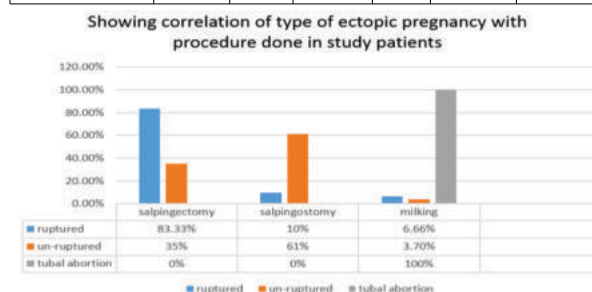
Adhesions	Number of patients	Percentage
Present	13	14.44
Absent	77	85.55

**Table 9: Showing procedure done by laparoscopy in study patients**

Procedure	Number of patients	Percentage
Salpingectomy	43	47.77
Salpingostomy	36	40
Milking	11	12.22

**Table 10: Showing correlation of type of ectopic pregnancy with procedure done in study patients**

Procedure	Ruptured		Un-ruptured		Tubal abortion	
	Number	%age	Number	%age	Number	%age
Salpingectomy	25	83.33	19	35	0	0
Salpingostomy	3	10	33	61	0	0
Milking	2	6.66	2	3.7	6	100
Total	30	100	54	100	6	100



We had 5 patients in our study who had one sided salpingectomy in their previous ectopic. They had usg documented ruptured ectopic second time also, however, during laparoscopy they was small rent on the fallopian tube which was bleeding. Preoperatively patients and attendant did not give consent for salpingectomy. So decision for conservative surgery [salpingostomy and milking] was taken after properly explaining the outcome. Of the 5 patients, 2 patients have conceived, 2 patients after evaluation for secondary infertility have HSG documented tubal block.

Laparoscopic image of right sided tubal ectopic. Tube was distended with products and blood and it was bleeding from fimbrial end. Left sided tube was absent (removed in previous ectopic)

Laparoscopic image of the same patient after procedure (Milking and Salpingostomy)

DISCUSSION

Laparoscopy is the standard surgical treatment of ectopic pregnancy nowadays. Patients managed laparoscopically have lesser blood loss, less post operative pain with less need for analgesia, less post-operative adhesions and early recovery in comparison to laparotomy. The benefits of laparoscopy were illustrated in a systematic cochrane database review of 35 randomized trials that compared laparoscopic Salpingostomy with open surgical approach⁷. Laparoscopic Salpingostomy resulted in significantly shorter operative time (73 vs 88 min), less operative blood loss (79 vs 195 ml), shorter duration of hospital-stay (1-2 vs 3-5 days), shorter convalescence time (11 vs 24 days) and thus lower cost.

In our study hemo-peritoneum was managed by suction with suction canulla. All cases were managed by laparoscopy without conversion to laparotomy and it was possible to conserve tube in 52.22% of cases. The decision for salpingectomy was taken intra-operatively and the contributing factors for the same were severely damaged tube and large tubal pregnancy of >5cm.

Mean age in our study was 29 years. This was similar with the study conducted by Junu Shrestha and Rachana Saha¹¹ and PN Yen et al¹² and Samsad jahan et al¹³, mean age of patients presenting with ectopic pregnancy was 28 years. Majority of the patients were nulli-paras (42.22%). The most common clinical presentation was pain abdomen followed by spotting and bleeding PV which is correlated with the study conducted by Wafaa M. Fageeh¹⁴ in which the most common presentation of ectopic pregnancy was pain abdomen (69.2%) followed by vaginal bleeding (25%). Majority of the patients had no previous abortion. Only 10% of the patients had previous ectopic pregnancy.

With reference to the operative findings different types and sites of ectopic pregnancy were also reviewed. Among the study patients majority presented as un-ruptured ectopic. The site of ectopic pregnancy in majority of the patients was Ampullary (82%) followed by Isthmic (10%) followed by Fimbrial (6.66%) followed by Interstitial (1.11%) which is comparable to the study conducted by Rajita S. jani et al¹⁵ and study conducted by Brumsted et al¹⁶. Salpingectomy was performed in majority of the patients (47.77%) followed by conservative surgeries in the form of Salpingostomy and Milking (40% and 12.2% respectively). These results were comparable with the study of Gajewska M et al¹⁷ in which salpingectomy was performed in 53.5% of the patients. Salpingectomy was the most common procedure done in patients presenting with ruptured ectopic pregnancy while as those presenting with un-ruptured pregnancy, Salpingostomy was the most common procedure.

Massive haemoperitoneum is not a contraindication for laparoscopic management of ectopic pregnancy. With adequate experience in laparoscopy, most if not all of the patients with ectopic pregnancy can be managed successfully by laparoscopy.

CONCLUSION

Laparoscopy permits diagnosis and treatment to be combined in the same procedure and ectopic pregnancies can be diagnosed and treated at an early stage. In fact, laparoscopy is not only suitable for early ectopic pregnancies but it is also safe and feasible in instances where there is tubal rupture and haemo-peritoneum, provided the haemodynamic stability is not severely compromised. The Laparoscopic approach is now the gold standard for the treatment of ectopic pregnancy more reliable and safer approach than laparotomy.

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