Original Article

Laporotomy to laparoscopy in ectopic pregnancies-an analysis of clinical profile and outcome in a tertiary care hospital in south India

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Abstract

Aim: To compare the efficiency of laparoscopic treatment versus conventional abdominal surgery in the treatment of ectopic pregnancy (EP) **Objective:** 1) To study the clinical profile of patients with ectopic pregnancy 2) To evaluate the methods of diagnosis in the above patients, 3)To identify the risk factors in these patients, 4) To study the treatment modalities in these patients, 5) To compare the outcome of all the surgically managed cases (either by laparotomy or laparoscopy). Methodology :This observational study was conducted over five years, retrospectively from 1st July 2009 to 31st December 2012 (Group A) and prospectively from 1st Jan 2013 to 30th June 2014 (Group B) at Gandhi Medical College, a tertiary care hospital located at Secunderabad, Telangana State which caters to both rural and urban population. Risk factors leading to ectopic pregnancy, the clinical presentations, the status at admission, the methods of diagnosis, the treatment modalities(laparoscopy and laparotomy), and the outcome of all the surgically managed cases was studied. A total of 202casesof ectopic pregnancies were diagnosed and treated during this period, of which 140 were in group A and 62 in group B.66 cases were managed laparoscopically and the other 136 had conventional abdominal surgery (laparotomy). **Results:** Laparoscopic surgery gives an overall success rate of 98.9% 1)Linear salpingostomy was the main procedure performed in unruptured ectopic (9.3% in Group A and 10.63%in group B) whereas salpingectomy was the procedure for ruptured ectopic in both groups (81.25%in Group A and 68.08 %in Group B). Milking of the tubes was done in 3.13% and 8.51% women in Group A and Group B respectively 2) Estimated blood loss was significantly lower in the laparoscopy group($P<0.0001$) 3)The duration of hospitalization was significantly shorter in the laparoscopy group($p<0.0001$) 4)Only 8% of the patients in laparoscopy group required blood transfusion whereas 31% of patients in laparotomy group needed blood transfusion. 5) There were no intraoperative complications in either group. 6) Thirty two (32) (48.4%)patients in the laparoscopy group did not need analgesia as compared to the laparotomy group where all patients needed analgesia after surgery. 7)There was no maternal mortality in both groups. **Conclusion:** With high index of suspicion, aggressive and timely management, maternal mortality and morbidity in ectopic pregnancy can be lowered. Moreover the trend in management of ectopic pregnancy is changing from laparotomy to laparoscopy. Laparoscopic treatment (salpingostomy or salpingectomy) of EP's offers major benefits superior to laparotomy in terms of less blood loss, less need for blood transfusion, less need for post operative analgesia and a shorter duration of hospital stay.

Keywords: Ectopic pregnancy (EP), Laparoscopy, Laparotomy, Salpingectomy.

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INTRODUCTION

The incidence of ectopic pregnancy (EP)has increased all over the world from 0.5% thirty years ago to a present day 1-2%,[1].This complication of early pregnancy results in not only fetal loss, but also the potential for maternal morbidity and the risk of maternal death[2,3,4.] Until the risk factors that lead to ectopic pregnancy (EP) are more fully understood, early detection and appropriate management will be the most effective means of reducing the morbidity and mortality associated with this condition[5,6]. Although the incidence of EP increased, with the

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improvement of diagnostic approaches, patients were detected at an early stage and it was possible to treat more conservatively.[7] Surgery remains the mainstay of treatment[8]. Surgical treatments may be radical (salpingectomy), or conservative (usually salpingostomy) and they may be performed by laparoscopy or laparotomy[9]. Improved anaesthesia and cardiovascular monitoring, together with advanced laparoscopic surgical skills and experience, justifies operative laparoscopy for surgical treatment of (EP) even in women with haemodynamic instability[10,11]. Improvements in management have led to fall in the mortality rate from 2.9 per 1000 EP's in the early 1970's to 0.4 per 1000 EP's in the 1994—1996 [6]. This observational study was carried out at Gandhi Medical College over a period of five years to study the risk factors, mode of presentation, management modalities, efficiency of laparoscopy over laparotomy and outcome of patients presenting with ectopic pregnancy. Study of Group A patients was retrospective and study of Group B patients was prospective study.

MATERIAL AND METHODS

The study population included data of women with confirmed diagnosis of ectopic pregnancy during the period from 1st July 2009 to 31st December 2012which was collected from records of patients and this constituted group A, while prospectively from 1st Jan 2013 to 30th June 2014,women with a provisional diagnosis of ectopic pregnancy were studied and this constituted group B. Informed written consent was taken from all the patients and ethical clearance was taken from the Ethics Clearance Committee of Gandhi Medical College, Secunderabad which is affiliated to the NTR University of Health Sciences, Vijayawada. During this period there was a total of 202 patients with a confirmed diagnosis of ectopic pregnancy (EP). There were 140 cases of EP in Group A and 62 cases in Group B. These patients were admitted through emergency or outpatient department. Patients were managed by laparoscopy (66) and by laparotomy (136). The diagnosis of ectopic pregnancy was based on history, clinical symptoms, physical examination, a positive urine pregnancy test, transvaginal or transabdominal ultrasonography'(ultrasound findings of empty uterus with or without adnexal masses),and confirmed at laparoscopy or laparotomy. The selection of operative approach was not based on any defined criteria, but depended on availability of laparoscopic facilities and the surgical team. Once the ectopic pregnancy had been diagnosed, the choice of whether the patient would undergo a laparotomy or be managed laparoscopically depended on the surgeon on call. Those not trained in operative laparoscopy procedures proceeded to perform a laparotomy. All laparoscopic surgeries were performed by senior surgeons who were well trained in operative laparoscopy. Patients were counseled preoperatively about the operative procedures and the risks and complications of operative laparoscopy and conservative procedure for eps and the need for follow up. Surgical procedures were performed after thorough evaluation of the case and the surgical specimen was sent for histopathological examination. Ectopic pregnancy was histologically confirmed in all these specimens. The whole retrospective data and prospective data was compiled and analysed.

OBSERVATIONS AND RESULTS

During the study period, 202 patients presented with an ectopic pregnancy, (all of these were included in the study) and 44901 deliveries (30990and13911) giving a total incidence of 0.45%in this hospital. Patients were further divided into 2 groups:-

Group 1: (n=66) had their EP's removed laparoscopically.

Group 2: (n=136) had a laparotomy.

A comparison of the demographic and clinical data of the two groups is shown in Table 1. There were no differences in mean age, parity, past gynaecological history of pelvic infection, frequency of previous ectopic pregnancy, prior laparotomy, use of IUCD's, and preoperative Hb levels. Most of our patients are within the 21---32 age group. Parous women constituted 64% and nulliparous patients constituted 23% of the study group, previous h/o abortion was found in 26% of patients. History of infertility was found in 14%.Use of IUCD was found in 12%, and history of previous ectopic pregnancy in 3.4%.

Table 1: Demographic and Clinical Data of the study groups

	Laparotomy	Laparoscopic
Age in years (mean+_s.d)	27.6+_5.7	28.5+_4.6
Previous pids (n) (%)	20(10.9%)	3(13%)
Previous ectopic (n) (%)	6(3.8%)	1(4.3%)
Previous laparotomy (n)(%)	28(15.2%)	4(17.4%)
Gestation at diagnosis(in weeks)	8+_1.7	8.5+_1.8
Iucd in situ (n) (%)	22(1.9%)	3(13%)
Preophb levels	10.07+_2.8	10.4+_3.4

History of infertility was found in 14%.Use of IUCD was found in 12%, and history of previous ectopic pregnancy in 3.4%. The presenting symptoms were abdominal pain in 96% patients, short period of amenorrhoea (89%), and vaginal bleeding (79%). The presenting signs were abdominal tenderness (89%) and adnexal tenderness (64%). The diagnosis of ectopic pregnancy was confirmed by ultrasound in 86% of patients. The study showed that 40%of ectopic pregnancies were ruptured at the time of presentation. The operative outcome is

summarized in Table 2. All the EP's were tubal. In 161(79.2%) it was in the right fallopian tube, and in 41 patients (20.8%) it was in the left tube.

Table 2: Operative outcome in the laparoscopy and laparotomy groups

	LAPAROTOMY(n =136)	LAPAROSCOPY(n=66)	P Value
(1)Location of EP			
-Ampullary	129(96.2%)	60(95.7%)	
cornual	2(1.1%)	6(4.3%)	
Fimbrial	5(2.7%)	0(0%)	
(2)Side of EP			
Right	110(79.3%)	52(78.3%)	
Left	26(20.7%)	14(21.7%)	
(3)Size of tubal pregnancy	3.7+_1.3	3.6+_1.5	
(4)Haemoperitoneum (n) (%)	108(58.7%)	37(56.5%)	
(5)Blood loss(ml)	270.7+_138.4	79.62+_96.7	
(6)Procedure performed (n) (%)			
Linear salpingostomy	132(97.3%)	54(82.6%)	
Salpingectomy	2(1.3%)	12(17.4%)	
Milking	2(1.3%)	0(0%)	
(7)Duration of surgery (min)	72.52+_20.01	66.46+_19.97	
(8)Hospital stay(days)	5.25+_3.16	2.14+_1.81	
(9)Patients required blood transfusion	32(23%)	5(7%)	<0.01
(10)No need for analgesia (n)(%)	0(0%)	31(47.3%)	<0.0001

There was no difference in mean diameter of the intact tubal pregnancy. The greatest estimated haemoperitoneum was 2340 ml. Estimated blood loss was significantly. both the laparoscopy and laparotomy groups (96.2% and 73.9% respectively),TABLE 2. The duration of operation in scopy group was 66.46+_19.97 min and 72.52+_20.01 min in the laparotomy group; and the difference between the durations of operations was not considered to be significant. The duration of hospital stay was significantly shorter in the laparoscopy group (P<0.0001). Only 5 (7%) patients in scopy group required blood transfusion, whereas 32 (23%) in the laparotomy group needed transfusion. (P<0.01).There were no intraoperative complications in either group. Postoperatively 4 patients developed bruising over the umbilical wound which resolved spontaneously with routine care, whereas 1 patient had extensive skin infection managed byregular treatment and which resolved after 3 weeks. 80 (47.3%) in the laparoscopy group did not need analgesia after surgery compared to laparotomy where all needed analgesia. On analysis of pathological changes of ectopic pathologic tissue, it was found that 110 (54.59%) specimens were histologically reported as unremarkable decidua and chorionic villi,39 (18.9%) specimens as haemorrhage with degenerated products of conception, 27 (13.53%)as trophoblastic tissue with haemorrhage, and 26 (13%) as trophoblastic tissue with fibrosis.

CONCLUSION

With high index of suspicion, and aggressive and timely management, maternal smorbidity and mortality in ectopic pregnancy can be lowered. Over the years the trend in management of ectopic pregnancy has changed from laparotomy to minimally invasive surgery. Laparoscopic treatment (salpingostomy or salpingectomy)of ectopic pregnancies (EP's)offers major benefits superior to laparotomy in terms of less blood loss, less need for blood transfusion, less need for postoperative analgesia and a shorter duration of hospital stay.

REFERENCES

1. Lehner R, Kucera E, Jirecek S, Egarter C, Husslein P. Ectopic pregnancy. Arch Gynecol Obstet 2000 Feb;263(3):87-92
2. Centres for disease control (CDC).Ectopic pregnancy -- United States, 1988-1989. MMWR 1992; 41:591-4.
3. Centres for disease control (CDC).Ectopic Pregnancies - United States, 1990-1992. MMWR 1995; 44:46-48.
4. Why women die. Report on confidential enquiries into maternal deaths in the United Kingdom 1994-1996. Norwich: Stationery Office, 1998.
5. Leach RE, Ory SJ. Management of ectopic pregnancy. Am Fam Physician 1990; 41:1215-22.
6. Ory SJ. New options for diagnosis and treatment of ectopic pregnancy. JAMA 1992; 267:534-7.
7. Feng W, Cao B, Li Q. Advances in diagnosis and treatment of ectopic pregnancy during the past ten years. Zhonghua Fu Chan KeZaZhi 2000 Jul; 35(7):408-10 (abstract).
8. Tay J I, Moore J, Walker J J. Ectopic pregnancy: Clinical review BMJ 2000;320(1):916-919.
9. Murphy AA, Nager CW, Wujek J J, Kettel JM, TorpVA,Chin HG. Operative laparoscopy versus laparotomy for the management of ectopic pregnancy: a prospective trial. Fertil Steril 1992; 57:1180-5.
10. Sagiv R, Debby A, Sadan O, Malinger G, Glezerman M, Golan A. Laparoscopic surgery for extrauterine pregnancy in hemodynamically unstable patients. J Am Assoc Gynecol Laparosc 2001 Nov; 8(4):529-32.
11. Chapron C, Fernandez H, Dubuisson JB. Treatment of ectopic pregnancy in 2000. J Gynecol Obstet Biol Reprod (Paris) 2000 Jun; 29(4):351-61.
12. Younis MN, Hamed AF, ElTabbakh MN. Effect of antiprostaglandindins, corticosteroids and anticoagulants for prevention of postoperative adhesions after tubal

surgery. Paper presented in the third world conference in Fallopian tube in health and disease,1990;July 3-6,Kiel, Germany.
13. Ghosh S, Mann C, Khan K, Gupta JK. Laparoscopic management of ectopic pregnancy.Semin Laparosc Surg 1999 Jun; 6(2):68-72.
14. Shapiro HL, Adler DH. Excision of an ectopic pregnancy through the laparoscope. Am J Obstet Gynaecol 1973; 117:290.
15. Vasile C, Litta P, Sacco G, Minante M. Laparoscopic surgical approach to ectopic pregnancy. Clin Exp Obstet Gynecol 1999; 26(1):35-8.

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