

Original Research Article

A Study on Histopathological Findings in Ectopic Tubal Pregnancies and Evaluation of Associated Risk Factors

Mohd Irshad Ahmed¹, Zeenath Begum²

¹Associate Professor ²Professor, Department of Pathology, Khaja Banda Nawaz Institute of Medical Sciences, Kalaburagi, Karnataka 585104, India.

Abstract

Background/Introduction: An ectopic pregnancy occurs when an embryo implants somewhere other than uterus such as in one of the fallopian tubes. Ectopic pregnancy can occur in any extrauterine location in the abdomen but fallopian tube is one of the most frequent site for ectopic implantation. The risk factors associated with ectopic pregnancies varies and includes pelvic inflammatory diseases, previous pelvic or abdominal surgeries and Intrauterine contraceptive device (IUCD). Chlamydia trichomatis is associated with 30-50% cases of ectopic pregnancy.

Aim: The aim of the study is to know the various histopathological changes in ectopic pregnancies in the fallopian tube and the predisposing factors for ectopic pregnancies

Materials And Methods: It is a comparative cross sectional study where 115 fallopian tubes having clinical diagnosis of ectopic gestation and 20 cases of fallopian tubes received after sterilization procedure which is taken for comparison.

Results: Out of 115 specimens of fallopian tubes pelvic inflammatory diseases including acute salpingitis 35% [40 cases], chronic salpingitis 54% [62 cases], salpingitis isthmica nodosa (SIN) [10.4%] 12 cases. 0.6% [1 case] of granulomatous diseases was identified as cause of ectopic pregnancy.

Conclusion: Early diagnosis [A Greatest Challenge], identification of risk factors and timely intervention will help in reducing morbidity and mortality associated with ectopic pregnancy.

Keywords: Ectopic Pregnancy; Fallopian Tubes; Pelvic Inflammatory Disease (Pid).

Corresponding Author:

Zeenath Begum, Professor,
Department of Pathology, Khaja
Banda Nawaz Institute of Medical
Sciences, Kalaburagi, Karnataka
585104, India.

E-mail: drzeenta@yahoo.com

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Introduction

An ectopic pregnancy occurs when an embryo implants somewhere other than uterus such as in one of the fallopian tubes [1]. Ectopic pregnancy can occur in any extra uterine location in the abdomen but fallopian tube is one of the most frequent site for ectopic implantation. An ectopic pregnancy is

the result of blockage or slowing of movements of fertilized egg from fallopian tube to uterus. The risk factors associated with ectopic pregnancies varies and includes pelvic inflammatory diseases, previous pelvic or abdominal surgeries and IUCD [2]. Any pathologic process that distorts tubal architecture or interferes with normal tubal transport of the fertilized ovum can cause tubal pregnancy [3].

Chlamydia trichomatis is associated with 30-50% cases of ectopic pregnancy [4]. Hence this study was taken up to know the pathological process that are occurring in the fallopian tube and leading to ectopic pregnancy.

Objectives:

1. This study was conducted to know histopathological changes occurring in fallopian tubes in ectopic pregnancies.
2. To know the associated risk factors or conditions predisposing for ectopic pregnancies.

Methodology

The study was conducted from 2016-2018 march, in department of pathology Khaja Banda Nawaz Institute of Medical sciences, Gulbarga, Karnataka, India. A cross sectional study was taken up to study

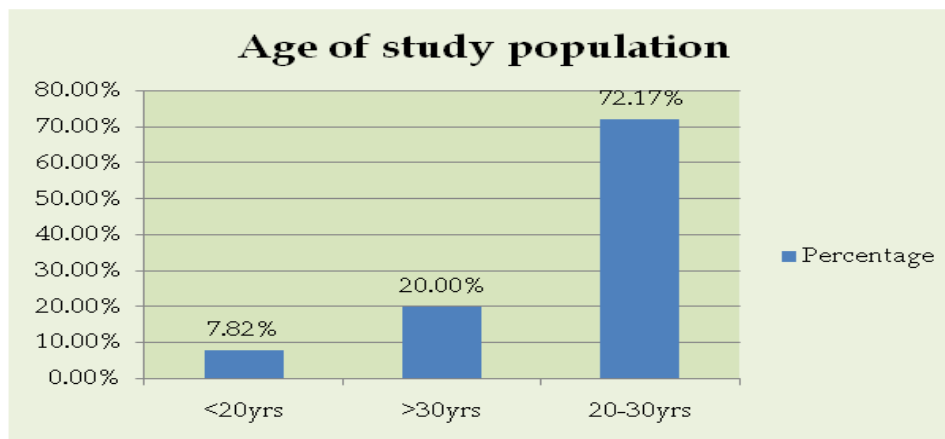
Table 1: Age of study population

Age	Number	Percentage
<20 yrs	9	7.82%
>30 yrs	23	20.00%
20-30 yrs	83	72.17%
Total	115	99.99%

the pathological changes in fallopian tubes and they were later compared with specimens of fallopian tubes obtained after permanent sterilization procedures. A total of 115 fallopian tubes diagnosed clinically as ectopic pregnancies and 20 cases of sterilization procedure specimens were taken. Brief clinical histories were recorded for past history and clinical presentation. The routine grossing procedure and hematoxylin and eosin stained sections were prepared from the specimens submitted and examined. Data was entered in Microsoft Excel and analyzed by using Epi info software. Univariate analysis was done.

Results

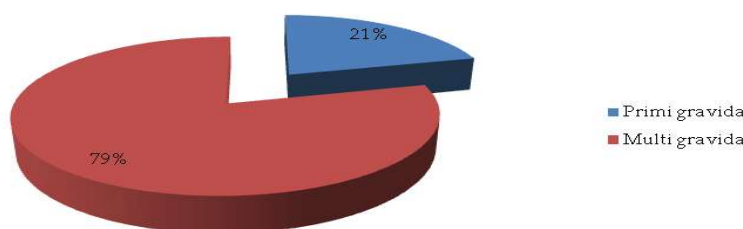
The Most Common incidence of ectopic pregnancy are seen in age group of 20-30 yrs which was 72.17%, followed by age group of >30 years (30%) and <20 years (7.82%) (Table 1 and Graph 1).



Graph 1:

Out of 115 cases, 79% were multigravida and only 21% were primigravida among the study population (Graph 2)..

Distribution of the population according to the no. of pregnancies



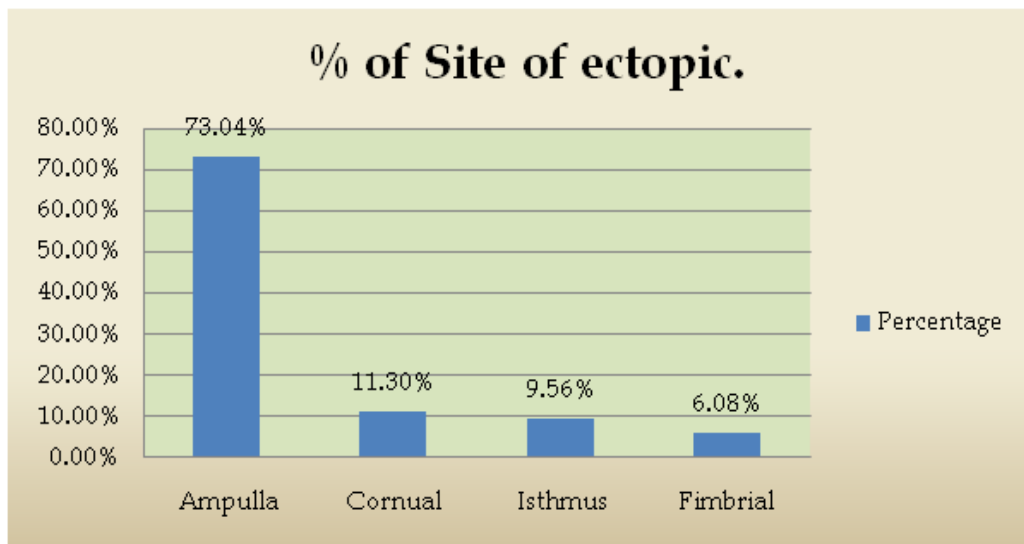
Graph 2:

The most common anatomical site was in ampullary region of fallopian tube with frequency

of 73.04%. 11.30% are observed in Cornua. 9.56% in Isthmus and 6.08% in Fimbrial, as illustrated in Table 3. and Graph 3

Table 3: Site of ectopic.

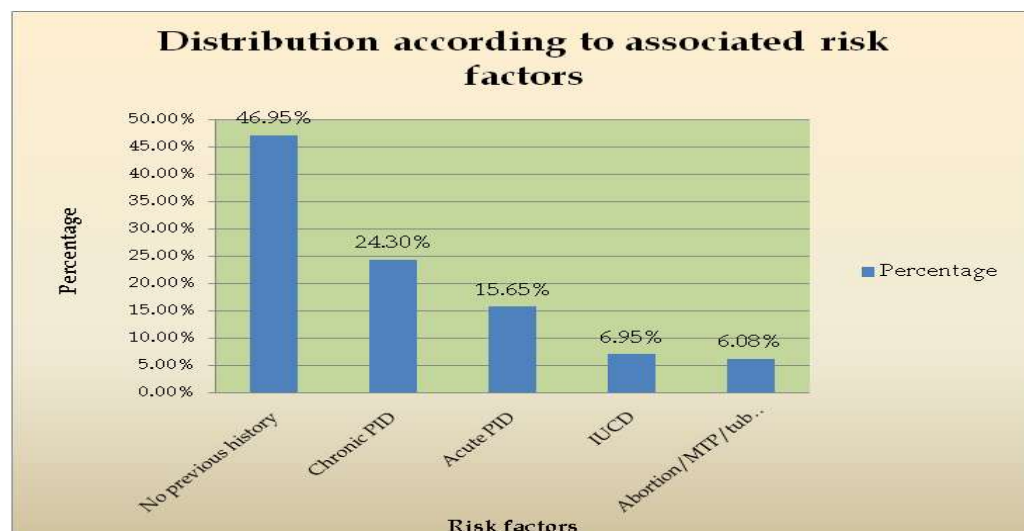
Site of ectopic	Percentage	No
Ampulla	73.04%	84
Cornual	11.30%	13
Isthmus	9.56%	11
Fimbrial	6.08%	7
Total	99.98%	115



Graph 3: Past history of associated conditions in patients presenting with ectopic pregnancies.

Table 4: Distribution according to associated risk factors.

Risk factors	Number	Percentage
No previous history	54	46.95%
Chronic PID	28	24.30%
Acute PID	18	15.65%
IUCD	8	6.95%
Abortion/Medical termination of pregnancy(MTP)/tubectomy	7	6.08%
Total	115	99.93%

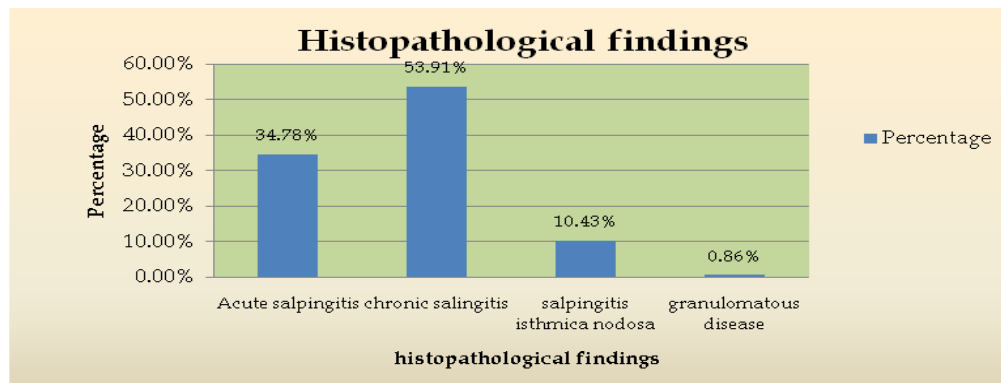


Graph 4:

Histopathological findings observed in patients of ectopic pregnancy mentioned in table 5.

Table 5: Histopathological findings

Condition	Number of patients	Percentage
Acute Salpingitis	40	34.78%
Chronic Salingitis	62	53.91%
Salpingitis Isthmica Nodosa	12	10.43%
Granulomatous Disease	1	0.86%
Total	115	99.98%

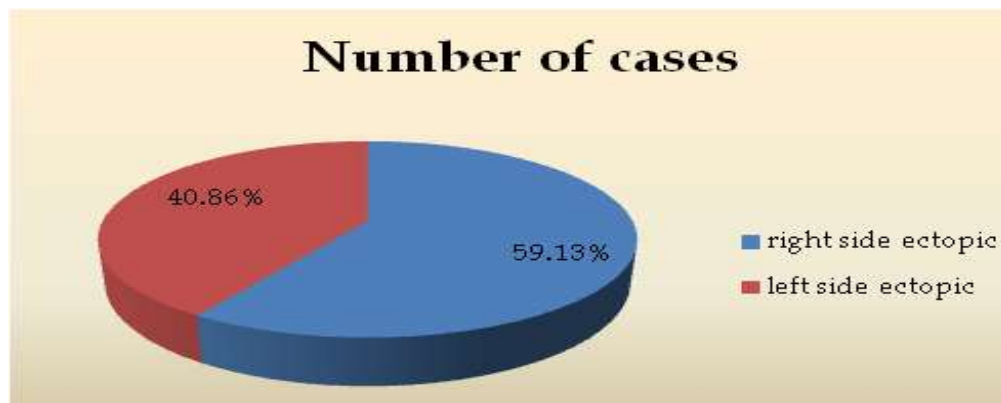


Graph 5:

Location of ectopic pregnancy – Right sided ectopic 68 cases and left sided were 47 cases, as shown in table 6.

Table 6: Location of ectopic pregnancy

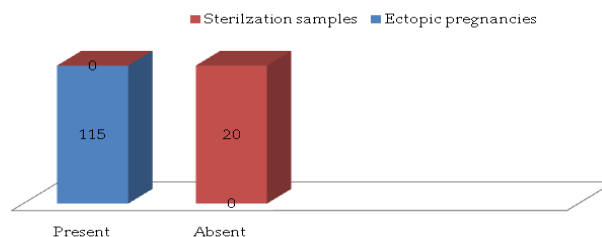
S.No	Location	Number of Cases
1	right side ectopic	68 [59.13%]
2	left side ectopic	47[40.86%]



Graph 6:

In Control group of 20 fallopian tubes obtained from permanent sterilization procedure no pathological changes were observed.

Pathological changes in the ectopic pregnancy samples and normal sterilization procedure samples.



Graph 7:

Discussion

Ectopic pregnancy is the complication of pregnancy where embryo implants outside the uterine cavity. Most of the cases were observed between the age of 20-30 i.e. 72% in our study and it is correlating with other studies [5,15].

Right fallopian tube [60 cases] 52% has high occurrence rate of ectopic than in left tube (55 cases) 48%. Our study is in concordance with other studies [6 & 7].

Histopathological examination studies of fallopian tubes shows chorionic villi trophoblastic cells, fibrinoid necrosis, and immature foetal tissue with areas of haemorrhage. There is also infiltration of lymphocytes and plasma cells into muscularis diagnosing as chronic salpingitis. Present study showed 62 patients of chronic salpingitis i.e. 53.91%. Chronic salpingitis is the most common predisposing condition leading to tubal pregnancy [9,10] Ectopic pregnancy in our study are closely associated with chronic salpingitis (62 cases) 53.91% and are correlating with many studies [11,12,13].

The other histopathological abnormality was neutrophilic infiltrates in muscular layers and classifying as acute salpingitis and 40 cases (34.78%) were recorded. Kutluay et al reported acute salpingitis in 34.8% cases.

There were 12 cases (10.43%) of Salpingitis isthmica nodosa. SIN is a known etiological factor for ectopic pregnancy. It is a well described pathological lesion of unknown etiology [16]. Chlamydia trichomatis [6] and mycoplasma infections are the commonest causes of PID, early screening for such infections and antibiotic therapy will decrease the incidence of PID.

One of the important causative agent causing PID is tuberculosis in India. In India incidence of genital tuberculosis is high.

India has high burden of tuberculosis accounting for 2 million cases when compared to 9.4 million cases globally in year 2009 [8]. In India one in eight women suffering from pulmonary tuberculosis develops genital tuberculosis [8]. In present study, we have seen one case of granulomatous associated disease with ectopic pregnancy [7].

Ectopic pregnancies observed was 6.95% of cases following surgical procedures and IUCD, which correlates with the studies done by Shraddha Shetty K et al 6.4%, Shrestha et al 5%, and WM Fageeh 5.8%. IUCD has no effects on ovulation; it prevents intrauterine pregnancy but not tubal and ovarian pregnancy [17,18,19]. Association of ectopic pregnancy with PID was seen in 39% of

cases which is in concordance with study of Rose et al; (2002).

The commonest site for ectopic pregnancy in fallopian tube is ampullary portion [20]. 73% of the cases were observed in ampullary region of fallopian tube, 11% are observed in fimbrial, cornua 9% and isthmus 7%.

The fallopian tube specimens that are obtained after permanent sterilization process did not show any pathological changes. It clearly implies that ectopic pregnancy is associated with pathological conditions like Salpingitis both acute and chronic etc. Adequate treatment with early diagnosis can prevent ectopic pregnancies in such cases.

Conclusion

Chronic PID and SIN remains highly associated incidence for ectopic pregnancy. Early recognition of sign and symptoms of PID and adequate antibiotics treatments can prevent ectopic pregnancy. Early diagnosis (A Greatest Challenge), identification of risk factors and timely intervention will help in reducing morbidity and mortality associated with ectopic pregnancy.

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