



## HISTOPATHOLOGICAL CHANGES IN ECTOPIC TUBAL PREGNANCY

## Pathology

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## ABSTRACT

**Objective:** The present study was conducted to know the various histopathological changes in the fallopian tubes with ectopic gestation and its correlation with various predisposing factors.

**Material & Methods:** The present study includes 100 resected specimens of fallopian tubes/tubal mass with a clinical diagnosis of ectopic tubal gestation received in the Department of Pathology, Geetanjali Medical College and Hospital, Udaipur (Raj.) in a 2 year period from December 2015 to December 2017.

**Results:** Most of the women were of age group 21-30 (56%). Most women presented in less than 8 weeks gestation (78%). Right side fallopian tube was involved in 64% of cases and left side in 36% of cases. 79% cases presented with ruptured pregnancy. 27% patients had history of using an intrauterine contraceptive device (IUCD). Histopathologically, majority ectopics were in ampul-la (73%) followed by fimbria (16%), interstitium (8%) and isthmus (3%). Chronic salpingitis was found in 62% of cases, SIN in 12% of cases and acute salpingitis in 8% of cases.

**Conclusion:** Histopathological examination of resected fallopian tubal ectopic can provide us information about etiopathogenesis of ectopic pregnancy which can be used to prevent further ectopic pregnancy and thereby benefitting public health.

## KEYWORDS

ectopic pregnancy, fallopian tube, salpingitis

## Introduction

Ectopic Pregnancy is a pregnancy implanted outside the cavity of the uterus. It is well recognised as a life-threatening emergency in early pregnancy. The incidence of ectopic pregnancy has been increasing worldwide. The incidence of ectopic pregnancy in developed countries is about 19.7/1000 pregnancies [1] and that in India is 3.12/1000 pregnancies [2].

It is an important cause of maternal morbidity and mortality especially in developing countries, where the majority of patients present late with rupture and hemodynamic compromise [3].

The early diagnosis and treatment of this condition over the past two decades have allowed a definitive medical management of unruptured ectopic pregnancy even before there were clinical symptoms in these high risk women.[4,5]. The possible contributing factors for increase in ectopic pregnancy incidence are pelvic inflammatory disease (PID), ovulation inducing drugs, previous abdominal-pelvic surgeries and intra-uterine contraceptive device use.[6]

During the last decade the incidence of rupture of pregnancy has declined. This declined is due to quantitative human chorionic gonadotropin measurements, minimally invasive surgeries, and transvaginal ultrasonography (USG).[7] Early diagnosis reduces the risk of tubal rupture and allows more conservative medical treatments to be employed.[8]

The most common site for ectopic pregnancy is fallopian tubes (90-95), majority occur in the ampullary or isthmic portions of the fallopian tubes.[9] About 2-3% occurs as interstitial ectopic pregnancies (arising in the part of the tube which goes through the endometrial cavity). Other sites are cervical, fimbrial, ovarian and peritoneal sites, as well as previous caesarean section scars.

The aim of present study is to assess the histopathological changes in the fallopian tube associated with ectopic pregnancy.

## Material and Methods:

The present study includes 100 resected specimens of fallopian tubes/tubal mass with a clinical diagnosis of ectopic tubal gestation received in the Department of Pathology, Geetanjali Medical College and Hospital, Udaipur (Raj.) in a 2 year period from December 2015 to December 2017.

Specimens were fixed in 10% formalin and processed routinely. Paraffin blocks were made and 4-6 micron sections were taken. These

slides were stained with hematoxylin and eosin stain.

The pathological findings were correlated with clinical data from the case files like age distribution, parity, associated medical conditions, previous pregnancies and history of surgical procedures.

## Results:

A total of 100 specimens of fallopian tubes with ectopic gestation were included in present study. Age of the patients ranges from 18 to 50. Most of the women were of age group 21-30 (56%). Most of the women were multigravidae, maximum cases seen in gravi-da2. Primigravida women with ectopic pregnancy were just 11% of all the cases.

Most women presented in less than 8 weeks gestation (78%). Right side fallopian tube was involved in 64% of cases and left side in 36% of cases.

Most of the cases presented with ruptured pregnancy (79%). 27% patients had history of using an intrauterine contraceptive device (IUCD) at one or other time. 8% cases were having IUCD-in-situ at the time of presentation in the hospital. 8% cases had previous history of ectopic pregnancy. 12% cases had previous history of abortions and medical termination of pregnancy (MTP). 19% cases had history of lower segment caesarean section (LSCS) in their previous pregnancies.

Histopathologically, majority ectopics were in ampul-la (73%) followed by fimbria (16%), interstitium (8%) and isthmus (3%).

On histopathological examination, acute salpingitis was found in 8% of cases. Chronic salpingitis was seen 62% of cases. SIN (salpingitis isthmica nodosa) was seen in 12% of cases.

Two cases showed granulomatous inflammation which was confirmed as tubercular salpingitis and was positive in AFB staining. Calcification was found in 7% of cases. 11% cases had sclerotic vessels.

## Discussion:

Ectopic Pregnancy is a pregnancy implanted outside the cavity of the uterus. It can occur in fallopian tubes, ovary, and abdominal cavity. The most common site is the fallopian tube (90-95%).[10]

Incidence of ectopic pregnancy has increased over the last few decades. This may be due to a number of factors such as increased

frequency of tubal infections, increase in number of tubal surgeries and increased use of intrauterine contraceptive devices. The incidence of ectopic pregnancy in present study was 0.87%. It is consistent with most studies from developing countries where incidence ranged from 0.56-1.5% [3,11-16].

Most of the women in present study were of age group 21-30 years (56%) and maximum incidence occurred between parity 2 and 4 ranging from parity 0-4. This was consistent with various studies done in the past. [17-19]

Most women in present study presented in less than 8 week of gestation. Murray et al [20] showed common gestational age at diagnosis to be 6 to 10 weeks.

Previous studies had shown higher occurrence of ectopic pregnancies in right fallopian tube. [21-23] Findings in the present study were in concordance with the same (64%).

In present study, 79% of patients presented with ruptured pregnancy. Majhi et al [24] in the study had 72% cases presenting as ruptured ectopic. That is why ectopic pregnancy is considered as life threatening emergency condition. The wall of the fallopian tube becomes thinned out due to the invasion of trophoblastic cells and chorionic villi, which in turn is due to the limited ability of the endosalpingeal stroma to undergo decidualization. Unruptured ectopics are seen as irregular sausage-like dilations of the tube, with a bluish discoloration caused by hematosalpinx. Ectopic tubal pregnancy is the most common cause of hematosalpinx.

27% cases of present studies had the history of use of IUCD at one or other time. The incidence of ectopic pregnancy was quoted in relation to the use of intrauterine devices by various authors. [25,26]

Histopathologically, commonest site of ectopic pregnancy in present study was ampulla (73%) followed by fimbria (16%) consistent with previous studies. Dahiya et al [27] estimated 79% cases in ampullary region and 16% in fimbria.

In present study, chronic salpingitis was seen in 62% of cases followed by SIN in 12% of cases, acute salpingitis in 8% cases and tubercular salpingitis in 2% cases. The risk of ectopic is known to increase 7-fold after an episode of acute salpingitis. The incidence of chronic salpingitis in fallopian tubal pregnancy has been variable (29-88%). [28,29]. Previous studies suggested variable incidence of SIN in ectopic pregnancy [30,31]. These findings suggest that there is an indicative contribution of inflammation in causation of ectopic pregnancy.

### Conclusion:

Histopathological examination of resected fallopian tubal ectopic can provide us information about etiopathogenesis of ectopic pregnancy. Inflammatory diseases secondary to postpartum or postabortal or use of IUCD can lead to ectopic pregnancy. With increased knowledge and experience, early diagnosis and prevention of pelvic inflammation can prevent ectopic pregnancy thereby benefiting public health.

### Conflict of interest:

No conflicts of interest exist for these authors. No relevant financial relationship exists between the authors and procedures or products used in this manuscript.

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