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Retrospective Study of Ectopic Tubal Pregnancies – Finding the Missing Link

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Abstract

Background: Ectopic pregnancy is one of the major causes of maternal mortality and morbidity in early pregnancy. Tubal ectopic gestation may occur due to various predisposing factors like chronic salpingitis, salpingitis isthmic a nodosa (SIN) and tuberculosis. Hence histopathological examination of the resected fallopian tube can give an insight into the etio pathogenesis of ectopic pregnancy.

Aims & objectives

1. To analyze the histopathological changes in the fallopian tube associated with tubal ectopic pregnancy.
2. To correlate these changes with age group and other relevant medical/surgical history.

Materials & methods: Ours was a retrospective study of 3 years duration, conducted on fallopian tube specimens resected for ectopic gestation. Relevant clinical and demographic data were obtained from the hospital records. Histopathology sections of fallopian tubes were studied to confirm the existence of tubal ectopic gestation. Other features like presence of chronic salpingitis, SIN and Walthard's rests were documented.

Results: A total of 35 cases were included in ourstudy. The age of the patients ranged from 20 to 35 years, with a peak in the third decade (65%). In most of the cases (80%) the period of gestation was <12 weeks. Salpingitis Isthmic aNodosa was seen in 8 cases (22.85%), Walthard cell rests were seen in 7 cases (20%).

Conclusion: Histopathological examination of resected fallopian tube ectopicscanaid in deducing the etiology of ectopic pregnancies. Thus a few treatable causes can be managed medically to prevent recurrent ectopics.

Keywords: Tubal ectopic gestation, Salpingitis Ishtmica Nodosa (SIN), Walthard's cell rests

Introduction

Ectopic pregnancy is one of the major causes of maternal mortality and morbidity in the first trimester of pregnancy and its incidence has been reported to be

rising dramatically, especially in the industrialized countries.[1] In an ICMR Task Force project in 1990 the incidence of ectopic pregnancy was found to be 3.12 per 1000 pregnancies [2] and in 2007 has been reported to be as high as 16 per 1000 pregnancies.[3]

The most common site of ectopic gestation is the fallopian tube (90-95%).[4] Fallopian tube ectopics have multifactorial pathogenesis with the most important cause being pelvic inflammatory disease (PID). Other causes include tubal deformities and defects, endometriosis, previous surgeries and also treatment for infertility.[5] Chronic salpingitis due to chronic PID has been documented as one of the most important risk factors and various studies have shown that a reduction in rate of PID is associated with a decline in the incidence of ectopic pregnancy.[6] Therefore identification of features of chronic salpingitis with subsequent treatment reduces the risk of recurrent ectopic. [7] Histopathological examination of resected specimens can aid in deducing the etiology of tubal ectopic pregnancies in most cases and thus help in their effective management.

Materials and Methods

Ours was a retrospective study of 3 years duration, conducted on fallopian tube specimens resected for ectopic gestation received at the Department of Pathology.Relevant clinical and demographic data were obtained from the hospital records. After routine processing histopathology sections of fallopian tubes were studied to confirm the existence of tubal ectopic gestation. Presence of other features like chronic salpingitis, SIN and Walthard's rests were documented.

Results

A total of 35 cases were included in the study. The age of the patients ranged from the 20 to 35 years, with a peak in the third decade (65%). In most of the cases (80%) the period of gestation was < 12 weeks. Most of the patients presented with acute pain abdomen (97%) and a few presented with bleeding per vagina (34%). Majority of the cases were ruptured ectopic pregnancies (29/35 cases, 82%), rest of them were unruptured (6/35 cases, 18%).

Salpingitis Isthmica Nodosa (SIN) was seen in 8 cases (22.85%), Walthard Cell rests were seen in 7 cases (20%). (Fig 1) Most of the cases showed chronic inflammation (60%). Muscle splaying was seen mostly in ruptured ectopics (48%). (Fig 2)

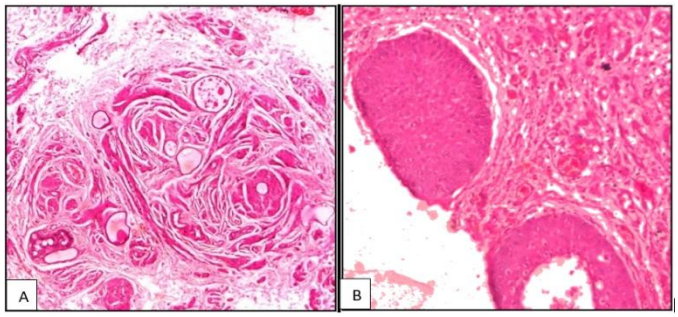

Figure 1: A. Salpingitis Isthmica Nodosa. Epithelial lined tubular structures surrounded by hyperplastic smooth muscle B, Walthard's cell rests. Transitional cell nests in tubal wall. H & E 40X

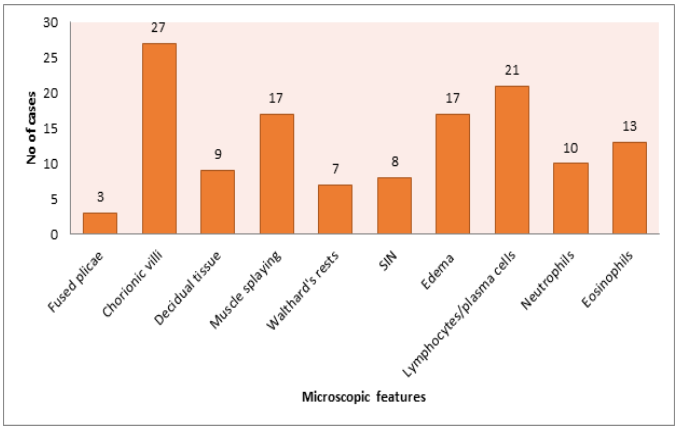

Figure 2: Microscopic features in resected tubal ectopic pregnancies

Discussion

Fallopian tube is the most common site of ectopic gestation.[8] Mufti et al in their study have shown that highest incidence of ectopic gestation is in third decade which is in concordance with our study.[9]

Majority of tubal ectopic pregnancies presented as a medical emergency with rupture of the fallopian tube as in our study (82%), similar to other studies. This is because the endosalpingeal stroma has limited capacity to undergo decidualization and is extremely thinned out if tubal implantation occurs. Most often patients of tubal ectopic pregnancies present with acute pain abdomen and bleeding per vagina.[7]

Diseases of the fallopian tube like chronic salpingitis and Salpingitis Isthmica Nodosa (SIN) have an important role in the aetiology of ectopic pregnancy.[10] Chronic salpingitis shows infiltration of lymphocytes and plasma cells in the mucosa along with plical distortion or adhesions. Occasionally chronic salpingitis involving the fimbrial end may lead to the formation of tubo ovarian adhesions. These tubal adhesions and scarring secondary to repeated inflammation aid in tubal implantation.[7] SIN is often bilateral and seen as a sequelae of chronic salpingitis characterised by distortion of fallopian tube with diverticula of tubal epithelium into the muscular layer.Grossly SIN is seen as solitary or multiple swellings in the isthmus of fallopian tube. The commonly seen complications of SIN are infertility and ectopic pregnancy.[10]

The incidence of SIN in specimens of ectopic pregnancies varies from 10-50% as noted in many studies. [7,10,11,12] The same is reflected in our study where 22.85% of the fallopian tube specimens had Salpingitis Isthmica Nodosa and 60% showed signs of chronic inflammation. Hysterosalpingography or laparoscopy as the method of diagnosis and followed by micro tubal surgery have good outcome in the management of patients with SIN.[11]

The occurrence of Walthard cell rests in our study is 20% which is higher than other studies. Studies by Ravindra S et al and DE onia S et al recorded an incidence of 5 and 6.8% of Walthard cells in fallopian tubes resected for ectopic pregnancy respectively.[7,13] However most of the authors have opined that there is no definitive association between Walthard's cell rests and tubal ectopic pregnancy and that these are observed as incidental findings.[7] It would therefore be of value to further explore the implication or association of Walthard cell rests in the role of Ectopic tubal pregnancy. In a study by Siedman J.D et al it was noted that Walthard nests are quite common and were found in most cases in which 4 or more blocks of fallopian tube were examined. This suggests that when the tubes are extensively sampled, WNs can be found in most women." [14]

Conclusion

Tubal ectopic pregnancy is one of the major causes of maternal mortality. However as shown in our study and supported by many other studies, tubal ectopic gestation can occur as a long-term sequela of pelvic inflammatory disease or chronic salpingitis. Hence early diagnosis and appropriate management of PID can reduce the incidence of tubal ectopic pregnancies. Similarly, salpingitis isthmica nodosa is also strongly associated with ectopic pregnancies. Besides typical histological findings, SIN can be suspected by characteristic changes on Hysterosal pingo graphy (HSG) and adequately treated with tubal microsurgery. Thus, pre emptive management of these contributing factors can help in reducing the burden of tubal ectopic pregnancies.

Acknowledgement

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