



Histopathological Study Of Lesions Of Fallopian Tube

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Abstract

Background: Fallopian tubes are common surgical specimen in the histopathology laboratory. There is a lack of data to describe the frequency of various histological findings in fallopian tube. Only a few attempts have been made to publish the data in the literature.

Aim: The aim of the present study is to analyze the frequency and different histopathological patterns of fallopian tube lesions

Materials and Method: The present study was a retrospective study, conducted for a period of 4months. A total of 120 cases were included in the present study. Clinical data and histopathology slides along with request were collected retrospectively. H&E slides were reviewed. Histopathological findings were recorded. Statistical Analysis was carried out using SPSS 20.0 version.

Results: Of the 120 fallopian tube specimens, 30% showed normal histological changes and 70% had tubal pathology. The age group of the study population ranges from 26 to 71 years. Mean age group was 46 years. Of the non-neoplastic lesions 27(22.5%) were post ligation changes. Among the inflammatory lesions, Chronic salpingitis was seen in 7(5.9%). Primary neoplastic lesion of fallopian tube was rare.

Conclusion: Although the fallopian tubes remain unremarkable in a majority of the surgical pathological specimens, they must be subjected for histopathological examination. It is essential to section the fallopian tubes serially and submit representative tissue for microscopic examination so that the diagnosis of these pathological entities is not missed.

Keywords: Adenomatoid tumor, Ectopic pregnancy, Fallopian tube, post ligation, Salpingitis.

Introduction

The fallopian tubes are a pair of hollow structures that connect the uterine cornua and the ovaries. Their functions include picking up ovum, providing a physical environment for conception, transporting, and feeding the fertilized ovum. They range in length from 7 to 12 cm.¹

The fallopian tube received little attention in histopathology for a very long time. The rare non-neoplastic conditions can present as obvious lesions in the fallopian tube include metaplasia, inflammation, Hydrosalpinx and ectopic tubal

pregnancy. Tumors can also occur in fallopian tube very rarely.²

Most common cause of secondary infertility is due to occlusion or stenosis of fallopian tube, caused by an inflammatory condition of the tube (salpingitis). Ectopic pregnancy still remains a matter of major concern because of the high number of maternal deaths due to this condition.³ It is a common sample at a pathology lab and can be analyzed separately as a salpingectomy specimen or as a component of a more

complex sample from a hysterectomy and/or oophorectomy procedure.⁴

The fallopian tube is likely the cellular source of ovarian high grade serous carcinoma (HGSC). Increasing number of studies indicate that women who had bilateral salpingectomy and tubal sterilisation performed alongside surgery for benign gynaecological conditions had a lower risk of developing epithelial ovarian cancer and peritoneal cancer, with a higher reduction in clear cell and endometrioid ovarian cancer.⁵Therefore, research on fallopian tube lesions is important.

Aim:

To analyze the frequency and different histopathological patterns of fallopian tube lesions.

Materials And Methods:

Study setting: Present study was conducted for a period of 4 months in Department of Pathology, SreeMookambika Institute of Medical Sciences, Kulasekharam

Study Design: Retrospective cross sectional study (Data collected from September 2021 to August 2022).

All the specimen of Salpingectomy either done for total abdominal hysterectomy with bilateral Salpingoophorectomy (TAH with BSO), unilateral

Salpingectomy, Salpingoophorectomy or Ligation with / without MTP were included in the study. Post chemotherapy specimens, inadequate biopsies were excluded from the study. 120 cases that satisfy the inclusion criteria were selected based on random sampling technique.

Clinical data and histopathology slides along with request were collected retrospectively. H&E slides were reviewed. Histopathological details were recorded. Data entered in Excel sheet. Statistical Analysis was carried out using SPSS 20.0 version.

Results:

The age group of the study population ranges from 26 to 71 years. Mean age group was 46 years. Most common age group of tubal lesions was 41-50 years seen in 44% (44) cases followed by 31-40 years of age group in 29% (29) cases.

Among the 120 cases included in the study 57 cases were TAH with BSO, 33 were Salpingoophorectomy specimens, 4cases of ectopic pregnancies and remaining 26 were tubectomy (sterilization) specimens. Normal morphology was seen in 41(34.2%) cases, 76(63.3%) were non neoplastic lesions and 3(2.5%) cases showed were neoplasm (benign or malignant). Gross morphology of fallopian tube was described in Table 1.

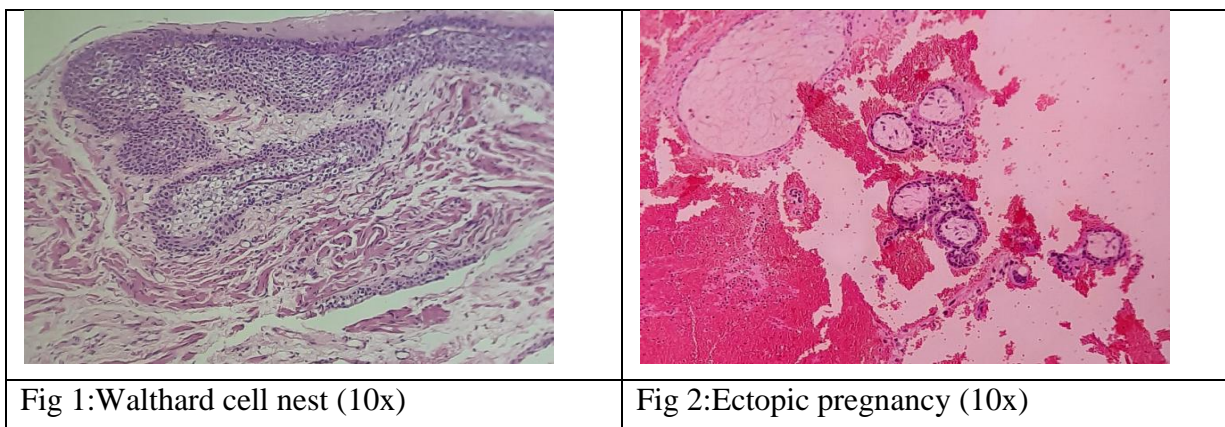
Table 1: Gross findings

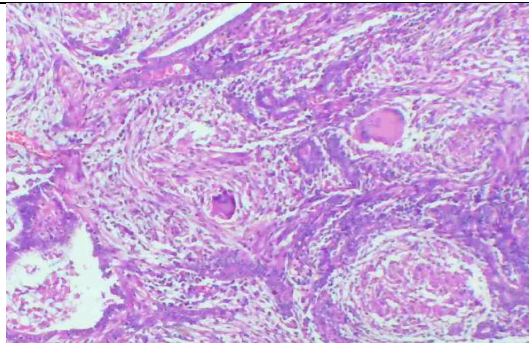
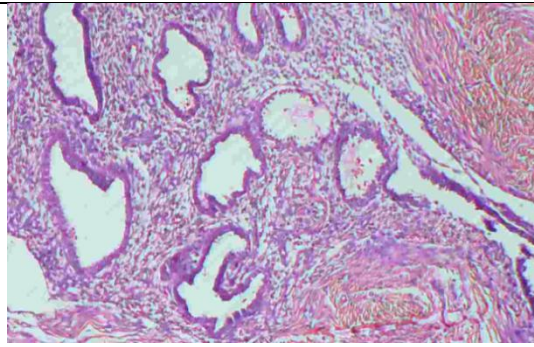
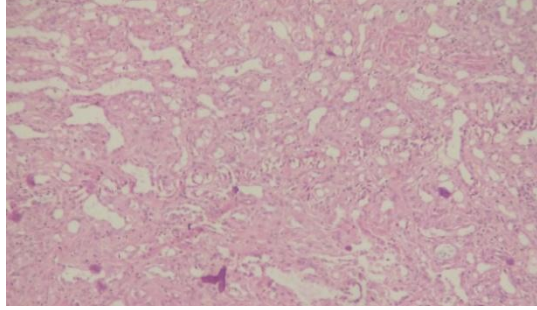
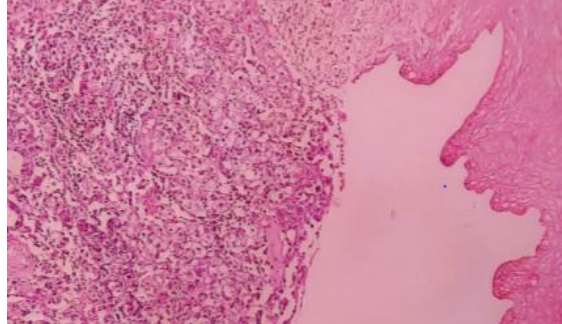
| Gross findings | Frequency | Percentage % |
|------------------------------|-----------|--------------|
| Normal morphology | 41 | 34.2 |
| Narrowed lumen | 34 | 28.3 |
| Dilated tubes | 4 | 3.3 |
| Congestion | 11 | 9.2 |
| Dilated tube with blood clot | 4 | 3.3 |
| Tubal cysts | 23 | 19.2 |
| Solid mass | 2 | 1.7 |
| Friable growth | 1 | 0.8 |

Out of 120 fallopian tubes, 30% were normal histological changes of fallopian tube. The remaining 70% had pathology ranging from non-neoplastic and inflammatory lesion to neoplasia. Histopathology diagnosis was described in Table 2.

Table 2: Histopathology Diagnosis

| Histopathology diagnosis | Frequency | Percentage % |
|--|-----------|--------------|
| Normal fallopian tube | 36 | 30 |
| Post ligation changes | 27 | 22.5 |
| Hydrosalpinx | 4 | 3.3 |
| Walthard cell nest | 8 | 6.7 |
| Paratubal cyst | 20 | 16.7 |
| Ectopic pregnancy | 4 | 3.3 |
| Inflammation | | |
| Acute Salpingitis | 3 | 2.5 |
| Chronic Salpingitis | 7 | 5.9 |
| Granulomatous Salpingitis | 1 | 0.8 |
| Tumour like lesions | | |
| Endometriosis | 3 | 2.5 |
| Endosalpingosis | 3 | 2.5 |
| Premalignant lesions | | |
| Serous tubal intraepithelial carcinoma | 1 | 0.8 |
| Neoplastic | | |
| Adenomatoid tumor | 2 | 1.7 |
| Malignant | 1 | 0.8 |



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| <p>Fig 3:GranulomatousSalpingitis (10x)</p> | <p>Fig 4:Endometriosis (10x)</p> |
|  |  |
| <p>Fig 5: Adenomatoid tumor (4x)</p> | <p>Fig 6: Clear cell carcinoma (4x)</p> |

One patient had papillary serous carcinoma in ovary and fallopian tube showed precursor lesion (serous tubal intraepithelial carcinoma). 2 cases had adenomatoid tumour in the fallopian tube and one case had carcinoma of fallopian tube which was of clear cell type.

Discussion:

Fallopian tubes are rare sites of primary disease and their most common afflictions are inflammation and non-neoplastic lesions. Out of 120 fallopian tubes included in the study 36(40%) were normal histological changes and remaining 84(70%) had tubal pathology. The finding in the present study was comparable to Kujur et al.⁶ in their study tubal pathology was seen in 118 (63.78%) cases.

In this study, hydrosalpinx was seen in 4 (3.3%) cases. The incidence of Hydrosalpinx was comparable to Kujur et al.⁶ showed 1.62% cases.

Walthard cell nests are benign epithelial cell clusters seen commonly in the serosal layer of fallopian tube, mesovarium, mesosalpinx and ovarian hilus. It is a common incidental microscopic finding. In our study 8(6.7%) cases had walthard cell nests. Bagwan IN et al.⁷ found Walthard cell nest in 10(1.45%) cases.

Paratubal cysts was noted in 20(16.7%) of the cases. Even though it is a common finding it do not have

much clinical significance. Kujur et al.⁶ and Bagwan IN et al.⁷ found paratubal cyst in 11.35% and 4.9% of their study population respectively.

The incidence of ectopic tubal pregnancy has increased markedly in recent times and was due to chronic salpingitis. The usual outcome is hematosalpinx and tubal rupture resulting in intraabdominal haemorrhage. In the current study ectopic tubal pregnancy accounted for 4(3.3%) of the total cases studied. Ampulla was the common site of ectopic gestation. Kujur et al.⁶ in their study found ectopic pregnancy in 10.27% and Andersen AM et al.⁸ showed 1.4% of ectopic pregnancy in younger age group. These findings were comparable to the current study.

Salpingitis is inflammation of the fallopian tubes, most commonly caused by sexually transmitted micro-organisms in adolescent and adult women. It is rarely found in adolescent girls and generally as the result of a blood-borne or genitourinary infection.⁹ In our study acute and chronic salpingitis was seen in

8.4% of the cases. This was comparable to the study done by Pattel J *et al.*¹⁰ which had 8.29% of salpingitis. Gon S *et al.*¹¹ in their study found that acute and chronic salpingitis in 12.66% cases.

Tuberculosis of fallopian tube develops usually from a primary pulmonary infection by hematogenous spread of the organism and rarely by direct extension from adjacent organs or lymphatic spread from intestinal tuberculosis. In this study, tuberculous salpingitis is seen in 1 (0.8%) case. Kujur *et al.*⁶ Gon S *et al.*¹¹ and Lakshmi *et al.*¹² observed almost equal incidence of tuberculous salpingitis with 0.54%, 0.19% and 0.59% respectively.

Endometriosis is defined as the presence of ectopic endometrial glands and stroma outside uterine cavity. This condition frequently involves fallopian tubes in the form of nodules located in the serosal surface. Placental adhesions and tubal fibrosis was also noted in these cases. 3(2.5%) cases in the present study had endometriosis. This was similar to studies done by Kujur *et al.*⁶ Bagwan IN *et al.*⁷ and Gon S *et al.*¹¹ where endometriosis was seen in 1.08%, 0.15% and 0.54% cases respectively.

In the present study there were 4 cases of endosalpingiosis. It is a benign tubal type epithelium but has a rare potential of developing into low grade serous carcinoma. They are mostly found in the peritoneum but in the present study it was identified in the serosa of the tube.

A case of papillary serous carcinoma of ovary had serous tubal intraepithelial carcinoma (precursor lesion) in the fimbrial end of fallopian tube. It was found that high percentage of ovarian and peritoneal serous carcinomas originate in the epithelium of tubal fimbriae.¹³ Piek JM *et al.*¹⁴ found that occurrence of premalignant lesions in normal fallopian tubes in women predisposed to ovarian carcinoma.

Two cases of adenomatoid tumor were identified in the present study. This was similar to study done by Gon S *et al.*¹¹ These tumours are of mesothelial origin. Most frequently it is seen in males in epididymis, spermatic cord and testis. It is commonly seen in uterus but rarely in fallopian tubes.¹⁵

Primary malignant carcinoma of fallopian tube was seen in one case (0.8%). Bagwan IN *et al.*⁷ and Gon S *et al.*¹¹ found primary malignant carcinoma of

fallopian tube in 0.03% and 0.15% respectively. Both studies had higher incidence of metastatic carcinoma to fallopian tube when compared to primary malignancy.

Conclusion:

The current study came to the conclusion that since the fallopian tube may reveal important findings, it should be thoroughly investigated and subjected to histopathological investigation. Prophylactic salpingectomy can be performed when there is evidence of premalignant lesions in the fallopian tubes to avoid the development of ovarian carcinoma.

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