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Original Article

Histopathological Study of Spectrum of Lesions Seen in Surgically Resected Specimens of Fallopian Tube

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Abstract

Background: Fallopian tubes are common surgical specimen in the pathology laboratory; still there is a lack of data to describe the frequency of various histopathological findings.

Aims and Objectives: (1) To study the histopathological lesions seen in surgically resected specimens of fallopian tube, (2) to study the frequency of various pathological lesions of fallopian tube and their age distributions.

Materials and Methods: A total of 185 fallopian tube specimens over a period of 1 year either from hysterectomy with salpingo-oophorectomy specimens, salpingo-oophorectomy specimens or salpingectomy specimens were reviewed thoroughly on the basis of gross and microscopic findings.

Results: Among 63.78%, i.e., 118 cases had some tubal pathology with acute salpingitis forming the major group (55 cases) of tubal pathologies followed by paratubal cysts (21 cases). Primary neoplastic lesions of fallopian tube were rare as compared to secondary malignancies.

Conclusion: Although the fallopian tubes remain unremarkable in a majority of the surgical pathological specimens, they must be subjected for histopathological examination to evaluate various pathological lesions.

Key words: Fallopian tube lesions, Histopathology, Tumors

INTRODUCTION

The fallopian tube are complex structures that connect ovaries to endometrial cavity. They are sites of various interactions necessary for normal pregnancy.[1] It is a common specimen in a pathology laboratory and may be examined either alone as a salpingectomy specimen or as a part of a more complex specimen from a hysterectomy and/or oophorectomy operation.[2] Although fallopian tube is affected by a wide spectrum of diseases, literature search reveals that there are only occasional studies documenting histologic changes in fallopian tube removed for all reasons. The aims and objectives of this study is to describe various histopathological lesions seen in surgically resected specimens of fallopian tube and to study the frequency of various pathological lesions of fallopian tube and their age distributions.

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MATERIALS AND METHODS

A one year prospective study was done from March 2015 to February 2016 at Pt. Jawahar Lal Nehru Memorial Medical College and Dr. B. R. A. M. Hospital, Raipur, Chhattisgarh. During this period, a study of 185 fallopian tubes cases was done. All the specimens of salpingectomy either done for TAH with bilateral salpingo-oophorectomy (BSO), unilateral salpingectomy or salpingo-oophorectomy were included in the study. Tubectomy specimens were excluded from the study. A minimum of three cross sections of each

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tube, from proximal, mid, and distal portions should be taken for microscopic examination. The proximal fallopian tube is serially cross-sectioned at 2.0-3.0 mm intervals, and the distal fimbriated end is longitudinally sectioned for maximal exposure of the fimbrial epithelium. It is processed routinely to obtain paraffin sections of 4-5 μ size and then stained with hematoxylin and eosin. After this, microscopic features were studied.

RESULTS

A total of 185 specimens consisting of various gynecological lesions were studied thoroughly. In the majority of the cases, the clinical diagnosis was carcinoma ovary (44/185) followed by uterine fibroid (31/185) (Table 1). The maximum number of cases belonged to the age group of 41-50 years, followed by 31-40 years of age group with vaginal bleeding as their most common presenting complaint. The youngest patient was 12-year-old female where BSO was done for ovarian mass, and the eldest was 72 years who underwent hysterectomy for endometrial carcinoma.

As shown in Table 2, most common age group of tubal lesions was 41-50 years in which 23.78% (44/185) cases were seen followed by 31-40 years of age group in which 15.67% (29/185) cases were seen. As shown in Table 3, in majority of the cases the fallopian tube showed abnormal pathological findings (63.78%) which included salpingitis, hydrosalpinx, hematosalpinx, salpingitis isthmica nodusa, endometriosis, ectopic pregnancy, paratubal cyst and tumors. In 36.21% cases, fallopian tube were unremarkable.

Table 1: Distribution of cases according to clinical diagnosis

Clinical diagnosis	Number of cases	Incidence (%)
Carcinoma ovary	44	23.78
Fibroid	31	16.75
Ectopic pregnancy	19	10.27
Ovarian cyst	17	9.18
Carcinoma cervix	16	8.64
Menorrhagia	15	8.10
Carcinoma endometrium	13	7.02
Ovarian cystadenoma	07	3.78
DUB	05	2.70
Endometrial hyperplasia	04	2.16
Adenomyosis	04	2.16
PID	03	1.62
Rupture uterus	02	1.08
Adnexal mass	01	0.54
Tubo-ovarian mass	01	0.54
Ovarian endometriosis	01	0.54
Carcinoma fallopian tube	01	0.54
Krukenberg tumor	01	0.54
Tubectomy	00	00
Total	185	100

DUB: Dysfunctional uterine bleeding, PID: Pelvic inflammatory disease

Maximum numbers of cases were of acute salpingitis, constituting 29.72% (55/185) of cases. The majority of the cases of acute salpingitis were seen in the age group of 41-50 years (22/55) (Table 2). In most of the cases, acute salpingitis was observed as an incidental finding in tubes removed along with uterus (panhysterectomy) for treating various gynecological disorders.

The next major group was of paratubal cysts, constituting 11.35% (21/185) of cases. The majority of the cases were seen in the age group of 41-50 years (15/21) (Table 2).

Ectopic pregnancy was seen in 10.27% (19/185) cases. The majority of the cases were seen in the age group of 21-30 years (13/19) (Table 2). One case of ectopic pregnancy was associated with chronic salpingitis in the same tube and two cases of ectopic pregnancy were associated with acute salpingitis in the same tube.

Primary fallopian tube carcinoma was seen in 2 (1.08%) cases. One case was diagnosed in a 53-year-old female and it was reported as endometrioid adenocarcinoma. Another case was diagnosed in a 25-year-old female and it was reported as serous tubal intraepithelial carcinoma (Figure 1).

Metastasis to the fallopian tube was seen in 5 (2.70%) cases. The metastasis to the fallopian tube was from ovarian primary in three cases, uterus primary in one case, and gastrointestinal tract (GIT) primary in one case. Among ovarian neoplasms, two were dysgerminoma and one was mucinous carcinoma. Among uterus (endometrium), it was endometrioid carcinoma. Among GIT (Krukenberg tumor), it was moderately differentiated mucinous intestinal type adenocarcinoma (Figure 2).

DISCUSSION

In this study, 67 (36.21%) cases were reported unremarkable and 118 (63.78%) cases were reported having tubal pathology. In most of the studies, cases with unremarkable tubes outnumbered the cases with tubal pathology.[3-7] However, in this study, cases with tubal pathology has outnumbered the cases with unremarkable tubes.

The most common histopathological finding in this study is acute salpingitis (29.72%) and all the cases are found incidentally on histopathological examination. In this study, the incidence of acute salpingitis was higher as compared to other studies.[3-7]

Table 3: Age-wise distribution of tubal lesions seen during histopathological examination

Tubal lesions	11-20 years	21-30 years	31-40 years	41-50 years	51-60 years	61-70 years	71-80 years	Total	%
Acute salpingitis	5	5	14	22	7	2	-	55	29.72
Chronic salpingitis	-	-	1	3	1	-	-	5	2.70
Acute on chronic salpingitis	-	-	-	1	-	-	-	1	0.54
Granulomatous/tuberculous salpingitis	-	1	-	-	-	-	-	1	0.54
Hydrosalpinx	-	-	3	-	-	-	-	3	1.62
Hematosalpinx	-	2	-	-	-	-	-	2	1.08
Salpingitis isthmica nodosa	-	-	-	1	1	-	-	2	1.08
Endometriosis	-	-	2	-	-	-	-	2	1.08
Ectopic pregnancy	1	13	4	1	-	-	-	19	10.27
Paratubal cysts	-	1	4	15	1	-	-	21	11.35
Tumors									
Malignant primary	-	1	-	-	1	-	-	2	1.08
Malignant secondary	1	1	1	1	1	-	-	5	2.70
Total	7	24	29	44	12	2	-	118	100

Table 2: Distribution of various tubal lesions encountered in this study

Fallopian tube lesions	Number of cases	Incidence (%)
Normal	67	36.21
Abnormal	118	63.78
Salpingitis	62	33.51
Acute salpingitis	55	29.72
Chronic salpingitis	05	2.70
Acute on chronic salpingitis	01	0.54
Granulomatous/tuberculous salpingitis	01	0.54
Hydrosalpinx	03	1.62
Hematosalpinx	02	1.08
Salpingitis isthmica nodosa	02	1.08
Endometriosis	02	1.08
Ectopic pregnancy	19	10.27
Paratubal cyst	21	11.35
Tumors	07	3.78
Malignant primary	02	1.08
Malignant secondary	05	2.70
Total	185	100

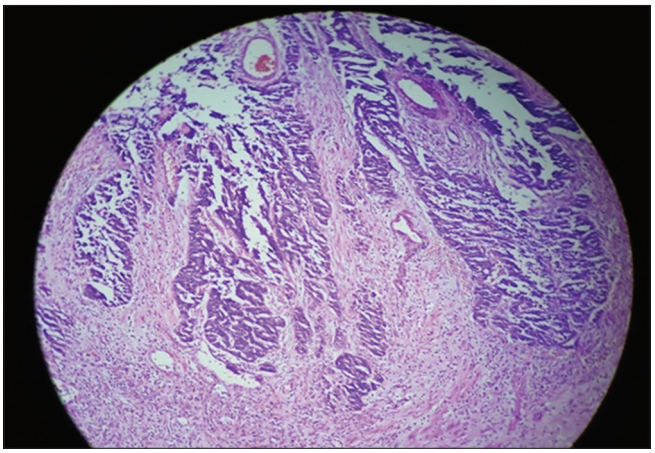

Figure 1: Histopathology section of right fallopian tube showing primary endometrioid adenocarcinoma (H and E, ×100)

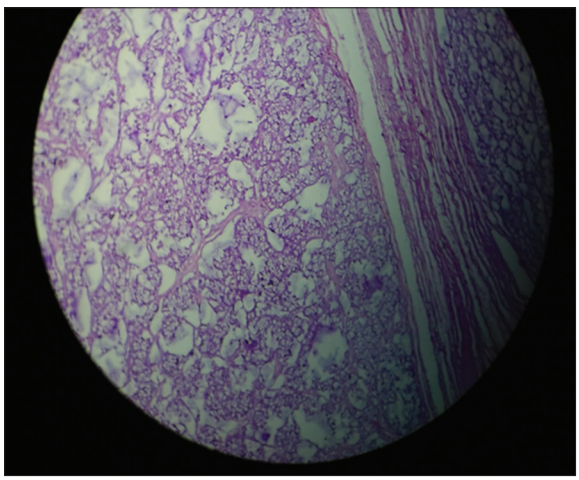

Figure 2: Histopathology section of right fallopian tube showing metastasis of mucinous carcinoma of ovary (H and E, ×100)

In this study, chronic salpingitis was seen in 5 (2.70%) cases. The incidence of chronic salpingitis was lower in this study as compared to other studies.[3-7]

In this study, acute on chronic salpingitis was seen in 1 (0.54%) case. In this study, the incidence of acute on chronic salpingitis was lower as compared to other studies.[3,7]

In this study, tuberculous salpingitis is seen in 1 (0.54%) case. Lakshmi *et al.*[5] observed almost equal incidence of tuberculous salpingitis (0.59%). Tuberculosis of fallopian tube develops commonly by hematogenous spread of the organism, usually from a primary pulmonary infection and rarely by direct extension from adjacent organs or lymphatic spread from intestinal tuberculosis. Agarwal and Gupta[8] in their study of female genital tract tuberculosis, found the incidence declining from 1.8% in 1974 to 0.8% in 1989 and onward. They noted the involvement of endometrium in 99.5%, fallopian tubes in 94.7%, cervix in 81.5%, ovaries in 62.5%, and vagina in 0.2% cases (Figure 3).

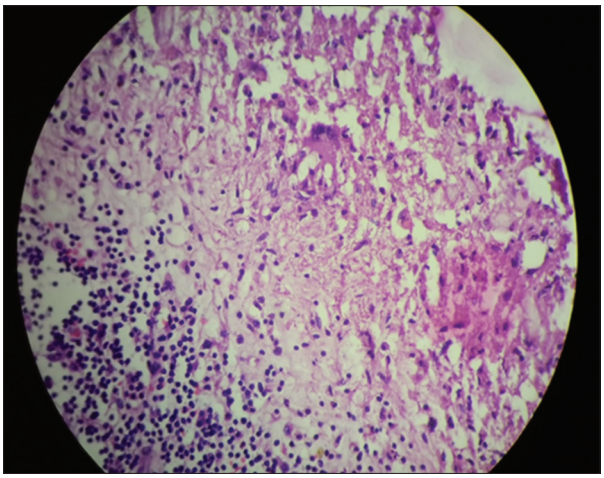

Figure 3: Histopathology section of fallopian tube showing tuberculous salpingitis (H and E, ×100)

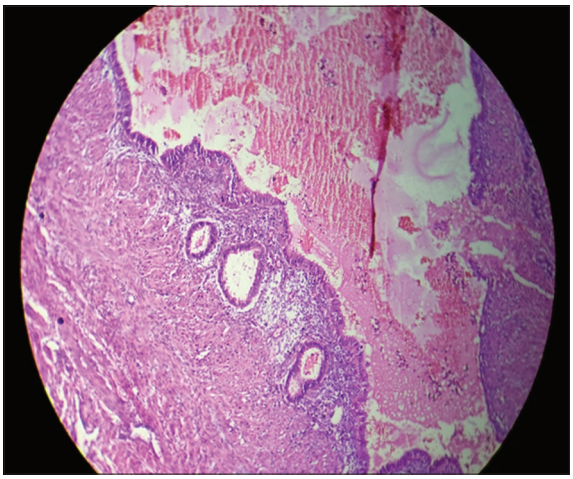

Figure 4: Histopathology section of fallopian tube showing endometriosis (H and E, ×100)

The second most common finding in this study is paratubal cysts (11.35%). In this study, the incidence of paratubal cysts was higher as compared to other studies.[3,5,7]

In this study, ectopic pregnancy was seen in 19 (10.27%) cases. The incidence of ectopic pregnancy was higher in this study. Bagwan *et al.*[3] observed almost similar incidence of ectopic pregnancy (11.79%). Most of the patients in this study were in the age group of 21-30 years, with 13 cases (68.42%), which was consistent with the study by Dahiya *et al.*[9] in which, most of the cases were between the age group of 25 and 29 years.

In this study, salpingitis isthmica nodosa was seen in 2 (1.08%) cases. In this study, the incidence was higher as compared to other studies.[3-7]

In this study, hydrosalpinx was seen in 3 (1.62%) cases. In this study, the incidence of hydrosalpinx was lower as compared to other studies.[3-7]

In this study, hematosalpinx was seen in 2 (1.08%) cases. Gon *et al.*[4] observed almost closer incidence of hematosalpinx (0.85%) (Figure 4).

In this study, endometriosis was seen in 2 (1.08%) cases. In this study, the incidence of endometriosis was higher as compared to other studies.[3-7]

In this study, the incidence of primary fallopian tube carcinoma was higher as compared to other studies.[3-6]

In this study, the incidence of metastatic tubal malignancy was higher than primary tubal malignancy. This finding is correlated with this study and previous study conducted by Bagwan *et al.*[3] and Gon *et al.*[4] In this study, the incidence of metastatic tumors was higher as compared to other studies.[3,4]

CONCLUSION

Although the fallopian tubes remain unremarkable in majority of the surgical pathological specimens, it must be subjected for histopathological examination to demonstrate the pathological lesion, and also, it is essential for the pathologist to section the fallopian tubes serially and submit all the representative tissue for microscopic examination so that the diagnosis of these pathological entities is not missed. The role of distal fallopian tube as organ of serous carcinogenesis is an emerging concept. Routine histological examination of the fimbria provides the opportunity to detect these early malignant changes.

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