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Original Research Article

Tubal pathologies in benign hysterectomies

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ABSTRACT

Background: Fallopian tube is a pair of hollow, muscular tubes that are located at the upper margin of the uterus's broad ligament on each side of the uterus. The most frequent illness among women in the reproductive age range is salpingitis, where about 11% of females are affected. Para tubal cysts, hydrosalpinx, endometriosis and walthard cell nests are one of the common lesions of the fallopian tubes.
Objectives: To evaluate the tubal pathologies in benign hysterectomies done in a tertiary care hospital.
Materials and Methods: We conducted a retrospective observational study for 15 months from October 2022 to December 2023 on 110 women who underwent hysterectomies along with salpingectomies or undertook the procedure as a part of tuboovarian masses in our hospital. These surgically resected specimens of fallopian tube which were received during the study period were included. Haemotoxylin and eosin stained histopathology slides of these cases were examined for a detailed analysis of histological patterns of various fallopian tube lesions. The data was represented in percentages and frequencies.
Results: Among the 110 study participants, the minimum age of the women were 35 years and the maximum age was 64 years. The most common diagnosis in our study was Abnormal uterine bleeding (AUB) which was among 87 (78.8%) of the patients, followed by ovarian cyst (8.1%) and fibroid (6.3%). The tubal pathology was abnormal in 54.5% of the study participants. Majority of the abnormal tubal pathology was found to be paratubal cyst corresponding to 30.6% and 18% in the right and left fallopian tubes respectively followed by hydrosalphinx in the right fallopian tubes corresponding to 10.8%.
Conclusion: This study concluded that more than 50% of fallopian tubes had aberrant diseases. Thus, a salpingectomy along with hysterectomy is beneficial to the patient in order to prevent further morbidity.

1. Introduction

The oviduct, also called the Fallopian tube or the uterine tube, is a pair of hollow, muscular tubes that are located at the upper margin of the uterus's broad ligament. One tube is on each side of the uterus. The ciliated microstructure, vascular structure, and development of the fallopian tube all contribute to its intricate architecture. It is essential for the distribution of ovum and fertilization.[1] The fallopian tube opens as finger-like projections toward the ovary and is made up of the interstitial parts (uterine end), isthmus, ampulla (wider portion), and infundibulum which is 11–12 cms long on average. The most frequent illness among women in the reproductive age range is salpingitis, which is brought on by an ascending vaginal infection, where about 11% of females are affected.[2,3] A considerable proportion of cases of secondary infertility due to occlusion or stenosis are still caused by salpingitis, and also salpingitis increases the chances of ectopic pregnancy.[4]

It is a typical specimen at a pathology lab that can be studied as part of a more complex specimen from a hysterectomy and/or oophorectomy procedure, or it can be analyzed separately as a salpingectomy specimen.[5] It

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is generally believed that hydrosalpinx is the last stage of purulent salpingitis, where the pus has reabsorbed and been replaced by a plasma transudate.[6] The fallopian tube serves as both the epicenter and likely the source of the inflammatory process in this region, which is referred to as pelvic inflammatory diseases.[7–9]

Walthard cell nests are a tiny, shiny, spherical cluster of flat to cuboidal cells that resemble urothelium and are seen on the tubal serosa. Cystic alterations are occasionally present as well. Rather of being wolffian or Mullerian, they are most likely mesothelial in nature. Ovarian tumors are usually confused with serosal implants.[10]

Traditionally referred to as hydatid cyst of Morgagni, para tubal cysts are typically observed as tiny, spherical cysts that are pedicled to the tube's fimbrial end. Their content is obvious and their wall is as thin as paper. They can occasionally grow to a large size and experience torsion.[11] The tube is commonly affected by endometriosis as nodules that are found in the wall or serosa.[12]

The present study was undertaken to evaluate the tubal pathologies in benign hysterectomies done in a tertiary care hospital.

2. Objective of the Study

This study was conducted to evaluate the tubal pathologies in benign hysterectomies done in a tertiary care hospital.

3. Methodology

We conducted a retrospective observational study for 15 months from October 2022 to December 2023, where we enrolled women who underwent hysterectomies and salpingectomies or undertook the procedure as a part of tuboovarian masses under Obstetrics and Gynaecology department of Akash institute of medical sciences and research center.

The sample size for this study was calculated as 110, based on the cases admitted in our hospital during the study period. The inclusion criteria for this study were surgically resected specimens of fallopian tube done with concurrent hysterectomies for benign pathologies which were received during the study period. Poorly fixed specimens and specimens without fallopian tubes were excluded from this study.

Detailed history including the patient's biodata, past history and clinical presentation was noted, while the haemotoxylin and eosin stained histopathology slides of these cases were examined for a detailed analysis of histological patterns of various fallopian tube lesions.

Data obtained were analyzed statistically using Z test SPSS version 21.0 and was presented in terms of frequencies and percentages.

4. Results

This study included 110 patients those who underwent hysterectomies and salpingectomies or undertook the procedure as a part of tuboovarian masses in our hospital and their specimens of fallopian tubes were sent for histopathological studies.

Table 1: Age

Minimum	Maximum	Mean	Std. Deviation
35	64	45.15	5.909

The mean age of the study participants was found to be 45.15+5.909 years with the minimum age of 35 and maximum age of 64.

Table 2: Diagnosis of study participants (n=110)

Diagnosis	Frequency	Percentage
AUB (Abnormal uterine bleeding)	87	78.8
Ovarian Cyst	9	8.1
Fibroid	7	6.3
Post menopausal bleeding	5	4.5
Uv prolapse	4	3.6
PID (Pelvic Inflammatory Disease)	3	2.7
Endometrial hyperplasia	2	1.8
Cystocele	1	0.9
CIN–2 (Cervical intraepithelial neoplasia)	1	0.9
ASC-H	1	0.9
Cervical polyp	1	0.9
Right ovarian dermoid	1	0.9

The most common diagnosis in our study was Abnormal uterine bleeding (AUB) which was among 87 (78.8%) of the patients, followed by ovarian cyst (8.1%) and fibroid (6.3%).

Table 3: Tubal pathology of women (n=110)

Tubal pathology	Frequency	Percentage
Abnormal	60	54.5
Normal histology	50	45.5

The tubal pathology was normal in 45.5% of the study participants and abnormal in 54.5% of the study participants.

Majority of the abnormal tubal pathology was found to be paratubal cyst corresponding to 30.6% and 18% in the right and left fallopian tubes respectively. This was followed by hydrosalphinx in the right fallopian tubes corresponding to 10.8%. Walthard cell nests were found in 0.9% and 1.8% of the right and left fallopian tubes respectively (Table 4).

5. Discussion

The most frequent condition affecting the fallopian tubes is inflammation, which nearly invariably occurs as

Table 4: Tubal pathology of right and left fallopian tubes (n=110)

Tubal pathology	Right		Left	
	N_1	%	N_2	%
Normal histology	62	55.8	78	70.9
Paratubal cyst	34	30.6	20	18
Hydrosalphinx	12	10.8	1	0.9
Endometriosis	2	1.8	-	-
Thickened fibrosed wall with areas of congestion	1	0.9	-	-
Walthard cell nests	1	0.9	2	1.8

a component of pelvic inflammatory disease. Primary fallopian tube disease is uncommon.[1]

The majority of the patients, according to the study of Bagwan IN et al.,[13] belonged to the 36–45 age range, which was similar to a study shown by Gon S et al.[14] The majority of instances in the current study were between the ages of 40 and 60 and it was similar to the Nanigopal Bhattacharya study.[15]

It has been determined that 30–40% of cases of female infertility are caused by tubal diseases.[16] Bagwan IN et al. observed tubal pathology in only 33.48% of the specimens in a histological analysis of the spectrum of lesions found in the fallopian tube, with inflammatory lesions of the tube constituting the majority group.[13] Salpingitis alone accounted for 12% of the patients in the Deepti Mahajan study, although only 31% of the gynecologic specimens showed a pathological lesion of one or both fallopian tubes.[17] At the same time, we found a higher incidence of abnormal tubal pathology of about 60 (54.5%) patients in our study.

According to Pratima Kujur et al.,[18] 11.35% of patients had paratubal cysts in their study. The study by Nanigopal Bhattacharya showed paratubal cysts of 7% among their patients[15] and 4% was reported by Deepti Mahajan.[17] However, our study showed a higher incidence of paratubal cyst corresponding to 30.6% and 18% in the right and left fallopian tubes respectively.

The current study found Hydrosalphinx among 12 (10.8%) and 1 (0.9%) patients in their right and left fallopian tubes respectively which was higher when compared to studies done by Nanigopal Bhattacharya[15] which was just 3%.

This study presented with 1.8% of Endometriosis that too in the right fallopian tubes only which was incidentally less than the Nanigopal Bhattacharya study, which showed 5%.[15] The prevalence of endometriosis is somewhat more than that found in another research by Pratima Kujur et al.[18]

Walthard Nests was found among 10% of the patients in the study done by Nanigopal Bhattacharya,[15] which were marginally greater than other studies conducted by Prachi Kukreja et al.[19] and also by our study which was only 0.9%.

6. Conclusion

Over 50% of fallopian tubes had aberrant diseases in our study. Thus, we draw the conclusion that a salpingectomy along with hysterectomy are beneficial to the patient to prevent further morbidity. This study offers data that may be valuable in finding and defining common histologic alterations in surgically resected fallopian tubes.

7. Source of Funding

None.

8. Conflict of Interest

None.

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