Original Research Article

A histopathological study of ovarian lesions in a rural medical college

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ABSTRACT

Introduction: Ovarian lesions can present in any age of life and has a wide spectrum of presentation. They contribute to most of the pelvic masses encountered in clinical practice in reproductive age group. Histopathological examination is of prime importance in ovarian lesions as it is difficult to diagnose these lesions on basis of clinical history, radiology alone.
Aim: To analyse the spectrum of ovarian lesions and to categorize them on basis of histomorphological pattern.
Materials and Methods: A total 132 cases were studied from January 2022 to December 2022. Relevant clinical details and histopathological findings were reviewed and analysed.
Results: A total of 132 cases of ovarian lesions were included in this study with age range from 20 years to 72 years. Non neoplastic cases were 71 and neoplastic cases were 61 in present study. Follicular cyst was the commonest non neoplastic lesion (48 cases) followed by haemorrhagic corpus luteal cyst (16 cases). Out of 61 neoplastic lesions, 56 were benign, 3 were borderline and 2 were malignant on histopathological examination. Mucinous cystadenoma was the commonest benign lesion and serous cystadenocarcinoma was the commonest malignant tumour in the present study. Borderline mucinous cyst adenoma was the commonest in borderline cases in our study. Unilateral presentation of ovarian lesions was found in 116 cases and bilateral in 16 cases.
Conclusion: In present study majority of cases were of non neoplastic lesions. For accurate management of the ovarian lesions it is important to correlate clinical findings and ultrasonography findings with histopathology diagnosis.

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1. Introduction

Ovarian lesions have a broad spectrum of presentation in clinical practice. Therefore, it is important to know there histological diagnosis for management. Also, on clinical examination, most of the non neoplastic lesions forming pelvic mass mimic ovarian neoplasm. The purpose of the study was to analyze the spectrum of ovarian lesions in a tertiary care centre and to categorize histomorphological pattern as non neoplastic, benign, borderline and malignant.

The ovaries are paired organs located on the sides of the uterus close to the lateral pelvic wall, behind the broad ligament and anterior to the rectum.[1] Most commonly lesions encountered in the ovary are functional or benign cysts and tumors. Oophoritis are uncommon and in rare occasion autoimmune pathology can arise in ovary.

Non-neoplastic and functional cysts include follicle cyst, luteal cyst, polycystic ovaries and stromal hyperthecosis. Cystic follicles are very common in the ovary. Functional cysts differ from neoplastic cysts in being usually of

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size 6-8cm, asymptomatic, regress spontaneously and are unilocular containing clear fluid.[2] These are frequently seen in young female in their 2 decade due to failure of ovulation. Ovarian cysts usually present with pain or discomfort in lower abdomen. Cyst rupture may lead to peritoneal signs, abdominal distention.[3,4] Polycystic ovarian syndrome also known as Stein Leventhal syndrome, affects 6% to 10% of reproductive age group women worldwide. Association with obesity, type 2 diabetes and premature atherosclerosis is there.

In ovary neoplastic lesions can be grouped according to their origin from each of the three main types; mullerian epithelium, germ cells and sex cord stromal cells.[5] Ovarian tumors are of numerous types. About 80% are benign. Occurs mostly in between 20 and 45 years of age. Borderline tumors occurs at slightly older ages. Malignant tumors are more common in women between 45 and 65 years of age. Ovarian tumors are called as silent killers as they are difficult to detect until they are advanced in size or stage.[6] Also ovaries are inaccessible therefore easy screening methods are not available.[7] Ovarian cancer comprises up to 8.7% of cancers in different parts of India.[8,9] Ovarian cancer accounts for 3% of all cancers in females in the United states. Epithelial ovarian tumors are classified into benign, borderline and malignant. Majority of the malignant epithelial tumors are high grade serous carcinoma. They have poor prognosis as are detected after they have spread beyond the ovary and fallopian tube.

2. Materials and Methods

This was a observational, cross-sectional study done between January to December 2022 in department of Pathology of JIIU's IIMSR, Warudi, in Jalna district of Maharashtra. Approval of Institutional ethical committee was obtained for this study. The histopathological specimen of the patients who underwent ovarian resection and total abdominal hysterectomy with bilateral salphingo-oophorectomy were included in the study. Total 132 samples were received in our department. Specimens were fixed in 10% formalin. Relevant clinical details were obtained from the medical records. Detailed gross finding were noted and representative section submitted. The tissue was processed in fully automated processing unit, blocks prepared, 3-5 microns tissue sections were cut by Leica microtome and the sections were stained with Haematoxylin and Eosin stain. Slides were reported by atleast two pathologists and histopathological diagnosis was finalized. The details of the patients and data were kept confidential. The data was analysed using MS Excel worksheet.

3. Results

A total of 132 cases of ovarian lesions were included in this study. The patients were in the age range of 20 to 72 years of age.
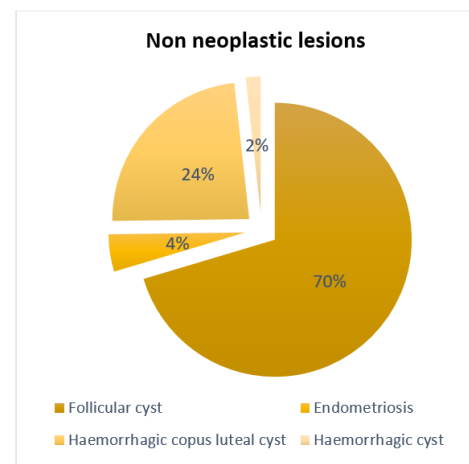
Upto 29 years benign neoplastic lesions were the commonest. After 30 years majority of the lesions were non neoplastic.(Table 1)
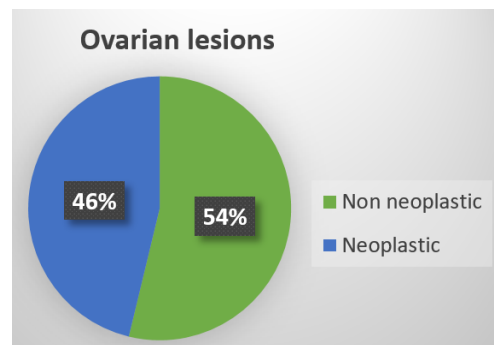
Fig. 1: Broad classification of ovarian lesions

The non neoplastic lesions constituted 54% (71 out of 132) of the total cases.

Fig. 2: Distribution of non neoplastic lesions according to histopathological diagnosis

Follicular cysts were the commonest amongst the non neoplastic lesions (48 out of 71 cases).

Mucinous cyst adenoma were the commonest amongst the neoplastic lesions (20 out 61 cases) followed by serous cyst adenoma (18 out of 61 cases).

Majority of ovarian lesions presented as unilateral lesions - 87.87% (116 out of 132 cases).

4. Discussion

In our study 132 cases of ovarian lesions were included. Most of the cases presented in 3rd and 4th decade of life. Study done by Purti Agrawal et al[10] had peak incidence of ovarian tumor in 3rd and 5th decade of life. In our study majority of the ovarian lesions were unilateral (116/132
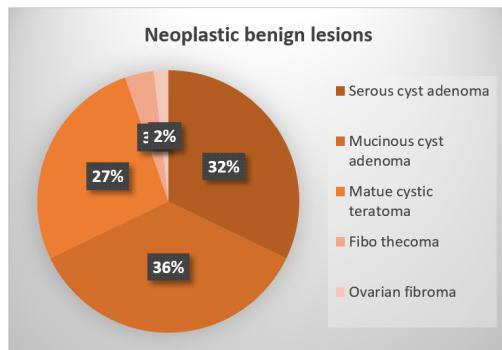
Table 1: Age wise distribution of cases for ovarian masses

| S. No | Age wise categories | Non neoplastic | Neoplastic | | | Total |
			Benign	Malignant	Borderline	
1	20-29 years	2	15			17 (12.88%)
2	30-39years	25	24	1	2	52 (39.40%)
3	40-49years	34	12		1	47 (35.6%)
4	50-59years	6	2			8 (6.06%)
5	>60years	4	3	1		8 (6.06%)
	Total	71	56	2	3	132

Maximum number of cases were in the age group 30-39 years.

Table 2: Distribution of ovarian lesions according to laterality

Category	Histopathological Diagnosis	Unilateral	Bilateral
Non - neoplastic			
	Follicular cyst	34	14
	Endometriosis	3	
	Haemorhagic luteal cyst	16	
	Haemorhagic cysts	4	
Neoplastic			
Benign	Mucinous cyst adenoma	19	1
	Serous cyst adenoma	17	1
	Mature cystic Teratoma	15	
	Fibro thecoma	2	
	Ovarian fibroma	1	
Malignant	Papillary serous cyst adenocarcinoma	2	
	Mucinous neoplasia	2	
Borderline	Serous neoplasia	1	
Total	132	116	16

Fig. 3: Distribution of neoplastic lesions according to histopathological diagnosis

Fig. 4: Gross photograph of mucinous cystadenoma showing cyst wall with thick mucinous contents in it

Fig. 5: Gross photograph of case of low grade serous cyst adenocarcinoma showing papillary excrescences

cases) 87.87%. Bilateral ovarian lesions were 12.12% which was in concordance with studies done by Maitry D Charel et al,[11] Couto et al.[12]
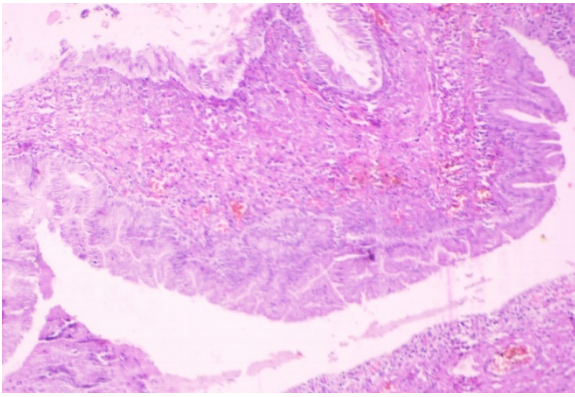
Non neoplastic lesions were 71/132 cases (53.78%) and neoplastic lesions were 61/132 cases (46.22%). Similar findings were seen in studies done by Nehal Ahmad et al[13] non neoplastic 55.8% and neoplastic 44.2%. The most common non neoplastic lesion was follicular cyst (48/71 cases) followed by haemorrhagic luteal cyst. Studies done by Amod Sawant et al,[14] Thakkar et al[15] had similar

Fig. 6: Photograph showing fibrovascular cyst wall lined by mostly single layer of columnar epithelium with basal layer and apical mucin vacuoles showing focal complex architecture and focal nuclear atypia. (H and E, x10)
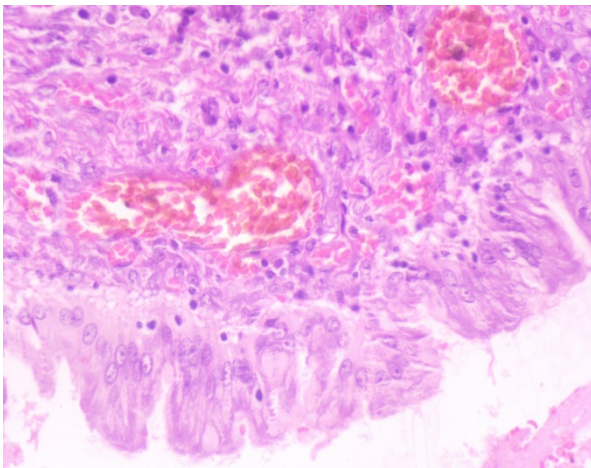
Fig. 7: Photograph showing fibrocollageneous cyst wall with congested blood vessels lined by single layer of benign columnar cells with apical mucin vacuoles. (H and E, x40)
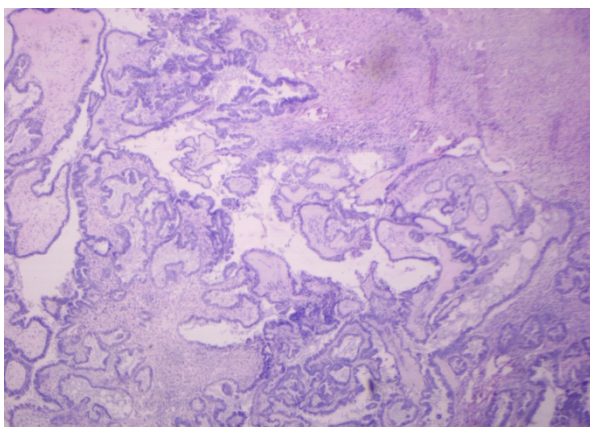
Fig. 8: Photograph showing tumour cells arranged in papillary pattern with more than 0.5cm invasion into the stroma. Some tumour cells show nuclear crowding, overlapping, clearing, few of the nuclei also shows nuclear grooves. (H and E, x4)

findings. Ashraf et al[16] had corpus luteal cyst as the commonest non neoplastic lesion.

Commonest neoplastic lesion encountered in present study was mucinous cyst adenoma (32.78%) which was in concordance with study done by Purti Agrawal et al.[10] Mondal et al. had serous cystadenoma (32.57%) as the most commonest histiologic type followed by mucinous cyst adenoma (15.71%).

In borderline cases, two cases were of mucinous cyst adenoma borderline and one case of serous cyst adenoma borderline. In studies done by Agrawal et al and Bhagyalaxmi et al[17] most common borderline ovarian tumor was borderline mucinous tumor 55.5%. Two cases turned out to be malignant both being serous cyst adenocarcinoma. Amongst the malignant epithelial tumors, serous cyst adenocarcinoma was the commonest in study done by Maheshwari et al.[18]

Ovarian lesions contribute major proportion of the cases of abdominal and pelvic swellings in female population. The prevalence of various ovarian pathologies varies according to age. Radiological investigations like transvaginal ultrasonography and CT scan helps in accessing size, spread and probable diagnosis of ovarian lesions. Many studies concluded that grossly most of non neoplastic and neoplastic ovarian lesions present as cystic swellings; while malignant and borderline lesions are partly solid and partly cystic. However, HPE confirmation always remains the gold standard for the diagnosis. It also helps in clinical staging and appropriate management of the patients.

5. Conclusion

Ovarian lesions are common in younger age group. Most of the cystic lesions of ovary are asymptomatic. In present study, follicular cyst was most common diagnosis amongst the non neoplastic lesions of ovary. Borderline mucinous cystadenoma was the commonest in borderline cases and in malignant cases serous cystadenocarcinoma was the commonest. Hence histopathological examination of ovarian lesions is important for exact diagnosis and proper management.

6. Source of Funding

None.

7. Conflicts of Interest

There are no conflicts of interest.

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