

Histopathological Study of Ovarian Neoplasms in a Tertiary Health Care Centre

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Abstract: ***Introduction:** Ovarian neoplasms comprise of a wide spectrum of benign and malignant tumors. Malignant ovarian tumors attribute to 3.0% of all cancers; incidence is 25.0% among female genital tract malignancies. World - wide ovarian cancer is fifth most prevalent cancer. **Aim:** To study the clinical features of patients with ovarian neoplasms and categorize histopathologically into benign, borderline, malignant tumors and study their histopathological pattern. **Materials and Methods:** This study was conducted during January 2022 to December 2023 (2 years) which included all histopathologically diagnosed cases of ovarian neoplasms. **Results:** The study comprised of 84 females, belonging to age range 11 - 70 years, mean age being 40.5 years. Majority, 30 (35.7%) belonged to 51 - 60years. Majority 47 (56%) were primary malignant tumors and 33 (39.2%) had benign lesions followed by borderline tumors. Right ovary is the commonest site for most lesions. Serous cystadenocarcinoma was the most common histopathological type seen in 30 (64%) cases followed by 8 (17%) cases of granulosa cell tumors. **Conclusion:** This study depicted the clinical profile and spectrum of histopathological pattern of ovarian neoplasms. Histopathological diagnosis is essential for accurate diagnosis of ovarian tumors which helps the clinicians to decide further therapeutic management.*

Keywords: Ovarian neoplasms, Benign, Malignant, Surface epithelial tumors, Serous cystadenocarcinoma

1. Introduction

- Ovarian neoplasms comprise of a wide spectrum of both benign and malignant tumors. [1]
- Malignant ovarian tumors attribute to 3.0% of all cancers; the incidence is 25.0% among female genital tract related malignancies. [2]
- Worldwide ovarian cancer is the fifth most prevalent cancer and the second most common gynecological cancer. [3]
- Nearly, 90% of all ovarian carcinomas and two thirds of all ovarian neoplasms are surface epithelial tumors. [4]
- Remaining 10% comprise of sex cord stromal tumors, germ cell tumors, metastatic tumors.

2. Aim

- To study the clinical features of patients with diagnosis of ovarian neoplasms; to categorize ovarian neoplasms histopathologically into benign, borderline and malignant tumors as well as to study their histopathological pattern.

3. Materials And Methods

- This study was conducted in our tertiary care hospital over a period of two years (January 2022 to December 2023).

- All the cases with histopathological diagnosis of ovarian neoplasms during this period were included.

4. Results

- This study comprised of 84 females with histopathological diagnosis of ovarian neoplasms.
- Chart I depicts the various surgical procedures for obtaining various biopsy specimens.

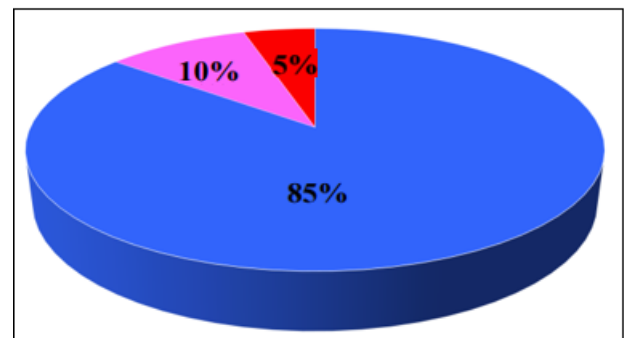


Chart I: Surgical Procedures for Obtaining Various Biopsy Specimens

Table I: Categorization of Various Ovarian Neoplasms

S. No	Types	Benign	Borderline	Malignant	Total	Percentage
1	Surface Epithelial Tumors					
	a) Serous	10	01	32	43	51%
	b) Mucinous	16	03	06	25	30%
	c) Endometrioid	--	--	--	--	
2	Sexcord Stromal Tumors	04		08	12	14%
3	Germcell Tumors	--	--	01	01	01%
4	Metastatic Tumors	--	--	--	--	
5	Others	03	--	--	03	04%

- Out of these 84 cases, majority had malignant neoplasms as seen in 47 (56%) cases and 33 (39.2%) had benign and 4 (4.8%) borderline tumors were seen.
- The age range of these cases was found to be 11 - 70 years with the mean age of 40.5 years.

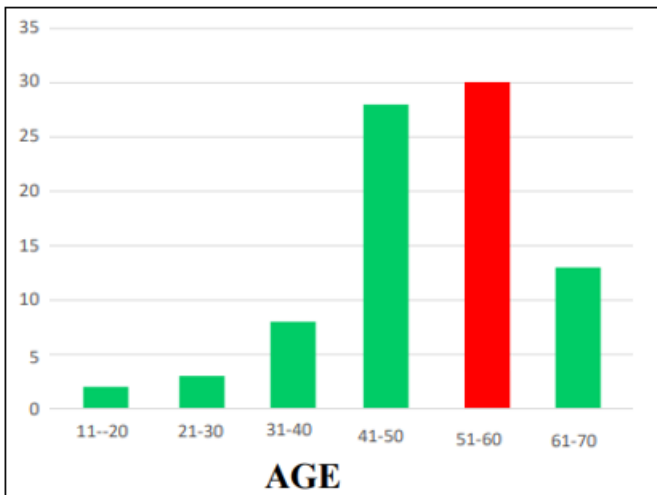


Chart II: Age Wise Distribution of Various Categories of Ovarian Neoplasms

- Maximum number of patients, 30 (35.7%) out of 84 cases was found in 51 to 60 years age group followed by 28 (33.3%) cases in 41 - 50 years age group.
- There were 13 (15.4%) cases in the age group 61 - 70 years, 8 (14.8%) cases in the age group 31 - 40 years.
- Three cases were seen in 21 - 30 years age group and least number i. e. 2 cases were found in 11 - 20 age group.

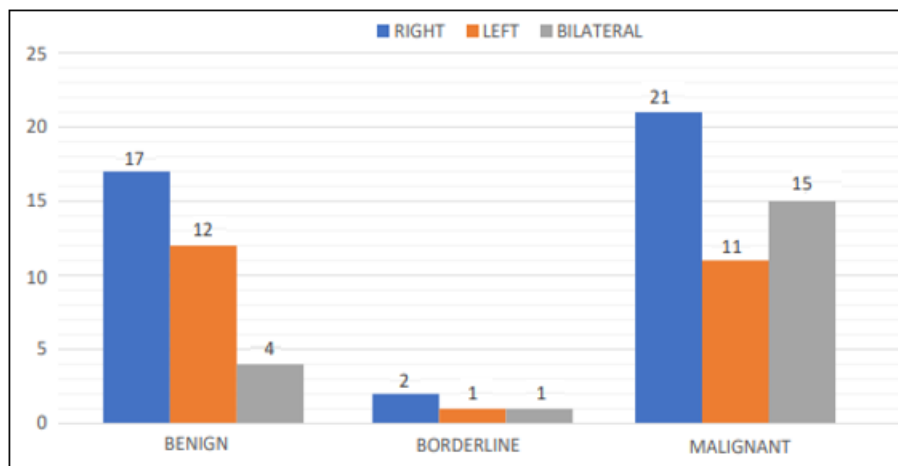


Chart III: Side Wise Distribution of Ovarian Neoplasms

- Out of 84 cases, 39 (46%) are right sided neoplasms, 25 (30%) are left sided neoplasms and 20 (24%) are bilateral tumors.
- In our study, majority of ovarian tumors were unilateral, right side being the most common site.

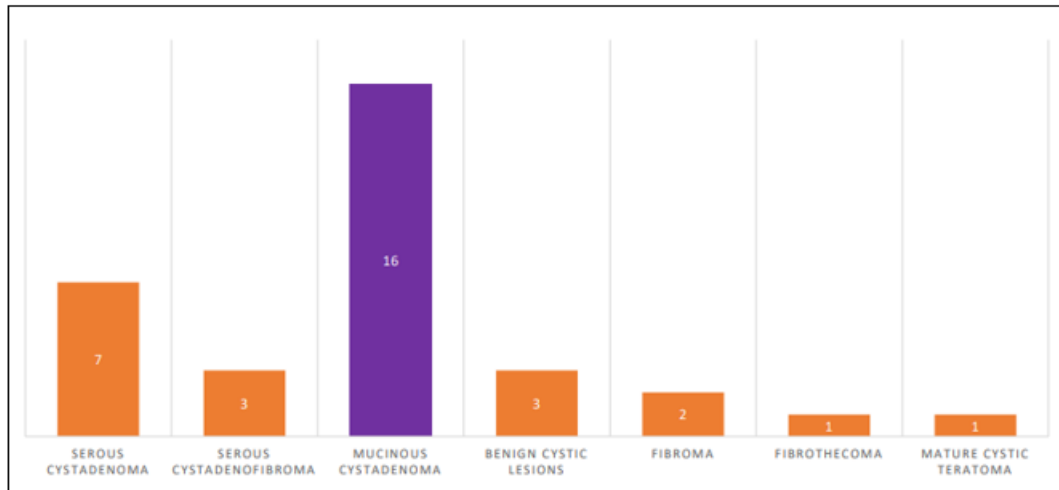


Chart IV: Histomorphological Patterns of Benign Ovarian Tumors seen in Total Cases

- Out of 33 benign tumors 16 were Mucinous cystadenoma, followed by 7 cases of Serous Cystadenoma, followed by Serous Cystadenofibroma and Benign cystic lesions, which in turn followed by Fibroma, Fibrothecoma and Mature cystic teratoma.

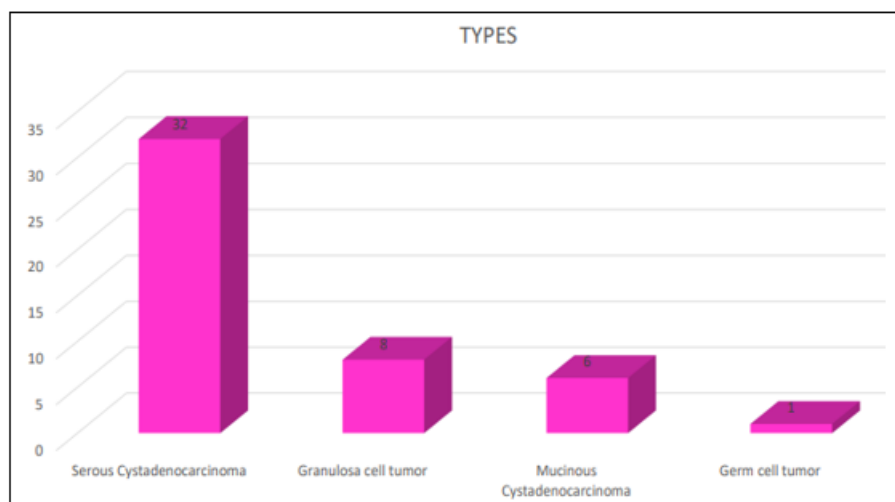


Chart V: Histomorphological Patterns of Malignant Ovarian Tumors seen in Total Cases

- Out of 47 malignant tumors maximum number, 32 (35.7%) revealed Serous Cystadenocarcinoma followed by 8 (9.5%) cases of Granulosa cell tumors, which in turn followed by Mucinous cystadenocarcinoma, and Germ cell tumor.
- Among 32 Serous Cystadenocarcinomas, maximum 27 (83.3%) were poorly differentiated followed by 3 (10%) moderately differentiated and 2 (6.7%) well differentiated cases.

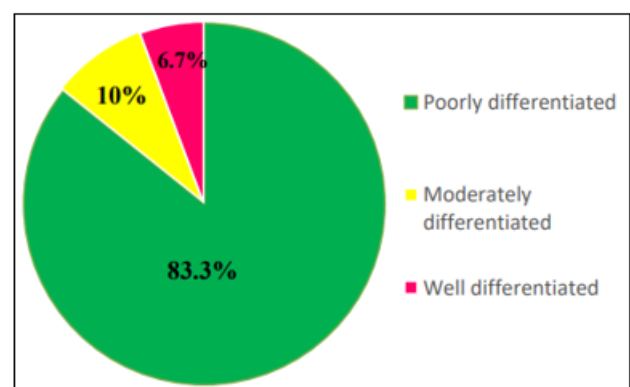


Chart VI: Serous Cystadenocarcinomas Types & Distribution

Gross Appearance of Ovarian Tumors



Figure 1: Fibroma- Well circumscribed mass with solid, chalky white cut surface.

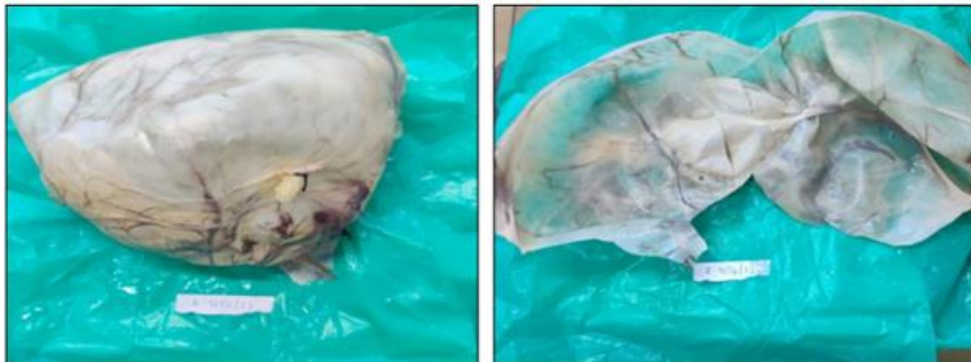


Figure 2: Serous Cystadenocarcinoma showing smooth surface. Cut section filled with straw color serous fluid.



Figure 3: Granulosa cell tumor- Cut section showing solid and cystic areas with focal grey yellow areas



Figure 4: Serous Cystadenocarcinoma- Exophytic solid growth, focal papillary excrescences, areas of necrosis and hemorrhage



Figure 5: Mucinous Cystadenocarcinoma- Smooth capsule, cystic and solid areas with hemorrhage and necrosis

Histopathological Appearance of Ovarian Tumors

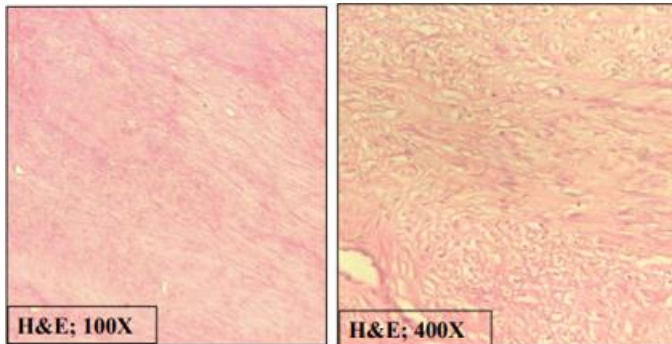


Figure 6: Fibroma- Spindle cells arranged in interlacing bundles with variable amount of collagen.

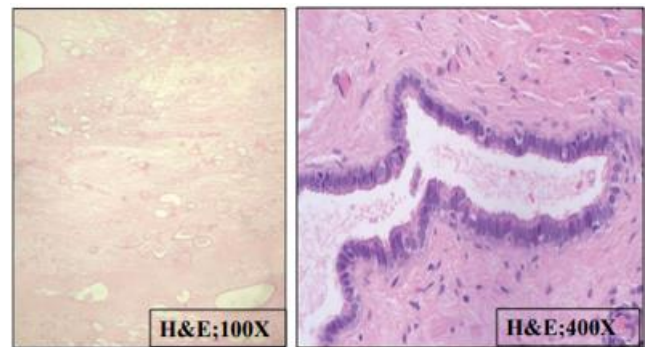


Figure 8: Serous Cystadenoma- glands and cysts are scattered within fibromatous stroma. Cyst lined by non stratified cuboidal to columnar epithelium

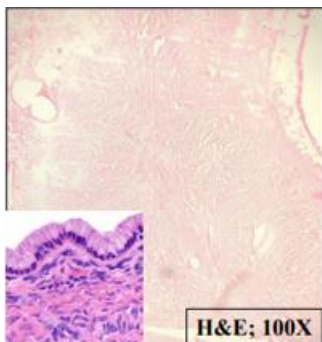


Figure 7: Mucinous Cystadenoma- Lined by simple non stratified epithelium, with basal nuclei.

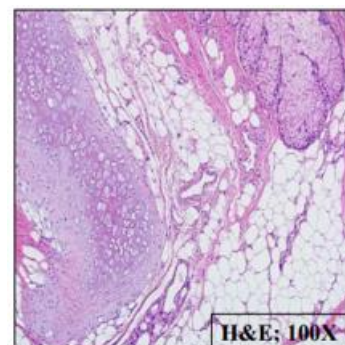


Figure 9: Mature Cystic Teratoma-Comprising sebaceous glands, cartilage, adipose tissue

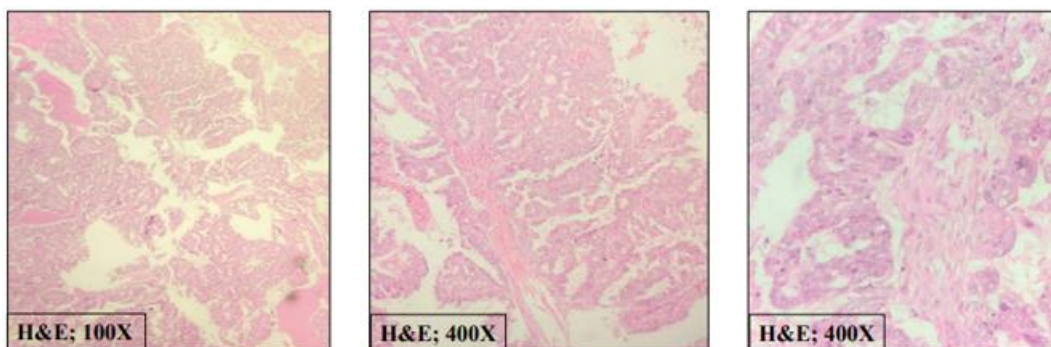


Figure 10: High grade papillary Cystadenocarcinoma- Tumor arranged in papillary glandular patterns with central fibrovascular core. Focal Areas show multinucleated, bizarre cells and mitosis

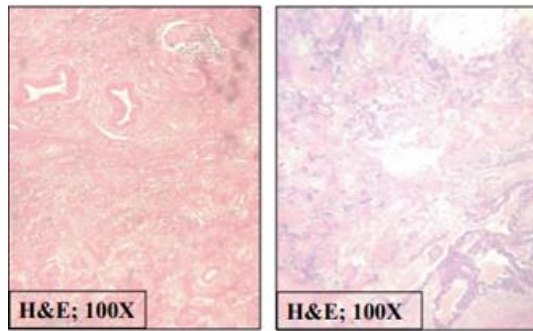


Figure 11: Mucinous Cystadenocarcinoma- Marked glandular crowding and irregular crowding and irregular infiltration of glands

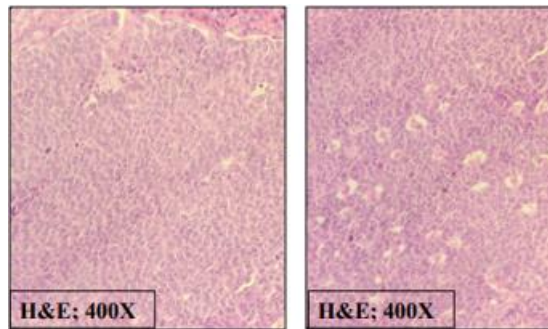


Figure 12: Glomerulus Cell Tumor- Diffuse sheets of tumor cells. Focal Areas show call Exner bodies

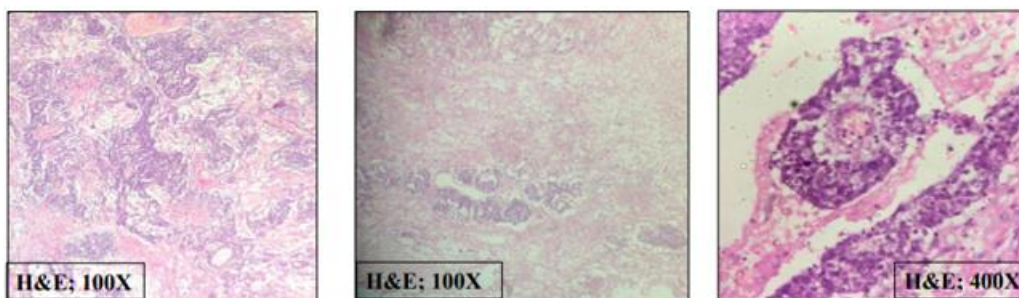


Figure 13: Yolk Sac tumor- Reticular pattern with loose meshwork of anastomosing aspects and cysts. Focal Areas show characteristic glomerulus like structure known as Schiller- Duval body.

5. Discussion

- In this study, ovarian neoplasms were observed in age range of 11 - 70 years, with a median age of 40.5 years which is similar to study of Batool A et al. who observed in 10 - 70 years with a median age of 40 years.
- Out of 84 cases, 47 (56%) were malignant which is similar to the study of Pandey et al. which showed 55.5% malignant cases. [6, 7]
- Out of 84 cases, 62 (73%) cases were surface epithelial tumors which is similar to Pandey et al showed 73.14%.
- Study by Hukan A et al showed 66.7% cases of surface epithelial tumors.
- The most common histomorphological pattern in our study was Serous Cystadenocarcinoma seen in 30 (35.7%) out of 84 cases when compared to Pandey et al it is 30%. [8, 9]
- In our study poorly differentiated Serous Cystadenocarcinomas were seen in 27 (83.3%) cases, but in study by Pandey A et al it was 50%.
- In study by Batool A et al, the Serous Cystadenocarcinomas incidence was 72%.

6. Conclusion

- The current study demonstrates a wide range of histopathological spectrum of ovarian neoplasms.
- Overall, malignant tumors were more common than benign tumors.
- Mainly, Surface epithelial tumors were the most common type, followed by Granulosa cell tumors.
- Serous cystadenocarcinoma was the most frequent in malignant category. The majority of the cases were present in the 51 - 60 years of age group with right sided predominance.

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