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Original Research Article

Ovarian tumor: Types and patterns of occurrence in Barak Valley of Assam

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Abstract: Ovarian tumors are one of the most common neoplasms encountered in females. A one year retrospective study of ovarian tumors was carried out in a tertiary care hospital to find out the different histological types of ovarian tumors in Barak Valley of Assam and to see the age distribution of benign and malignant tumors of ovary. A total of 84 patients with ovarian tumors were studied (number of tumors studied- 88). 84% of the tumors were found to be benign and 16% were malignant. Serous cystadenoma was the most common benign tumor in our study and serous cystadenocarcinoma was the most common malignant tumor. Malignant ovarian tumors appeared to occur at a slightly higher average age than benign tumors.
Keywords: ovarian tumor, types, histopathology

INTRODUCTION:

Ovarian tumors are one of the most common neoplasms encountered in females. While both benign and malignant tumors occur in the ovaries, ovarian cancer is one of the leading causes of cancer death in women. Most ovarian tumors cannot be confidently distinguished from one another on the basis of their clinical or gross characteristics alone although these may aid in the diagnosis. Therefore the clinician and the pathologist should share their valuable information in order to arrive at a correct diagnosis and in this regard, age of the patient is very important feature [1]. Ovarian cancer accounts for 15-25% of all gynaecological malignancies, however, approximately 50% of the deaths are due to ovarian cancer [2, 3]. Their classification is difficult due to complexity of ovarian structure. The classification is primarily morphologic but also reflects the embryogenesis and histogenesis of the ovary. We conducted a one year study of ovarian tumors at our institute to find out the different histological types of ovarian tumors in Barak Valley of Assam and to see the age distribution of benign and malignant tumors of ovary.

MATERIALS AND METHODS:

A one year retrospective study was carried on archival data in the Pathology department of Silchar Medical College and Hospital. The clinical history was taken from records section, the gross features were noted and H & E stained slides were examined. Histopathological diagnosis, tumor type, tumor subtype and age of the patients were noted. Non neoplastic lesions were excluded from the study. A total of 84 patients with ovarian tumors were studied (number of tumors studied- 88). Results were analysed using descriptive statistics.

RESULTS AND OBSERVATIONS:

Of a total 84 patients who presented with ovarian tumors during the period of study, 88 ovarian tumors were studied (as 5 of the patients had bilateral tumors). Of these, 74 were benign (84%) and 14 (16%) were malignant. The most common benign tumor was serous cystadenoma (50% cases) followed by mature cystic teratoma (21.6% of total). Among malignant tumors, serous cystadenocarcinoma was most common (4 patients, 2 of whom had bilateral tumors). The other malignant tumors encountered were dysgerminoma (1 patient with bilateral tumor), mucinous cystadenocarcinoma, granulosa cell tumor, sertoli leydig cell tumor with heterologous element and a case of squamous cell carcinoma arising in a dermoid. 5 of the patients had bilateral tumors, of which 4 were homologous and one was heterologous. As a category, surface epithelial tumors were most common followed by germ cell tumors. The age of the patients ranged from 13 years to 70 years. The mean age of patients

with benign tumors was 33.6 yrs while for malignant tumors, it was 36 yrs.

Table 1 showing different types of tumors seen in our study

Tumor type	Total no.s	Percentage
Serous cystadenoma	44	50 %
Mature cystic teratoma	19	21.6 %
Mucinous cystadenoma	11	12.5%
Serous cystadenocarcinoma	6	6.8%
Dysgerminoma	2	2.3 %
Mucinous cystadenocarcinoma	1	1.1%
Sertoli Leydig cell tumor	1	1.1%
Granulosa cell tumor	1	1.1%
Dermoid with malignant transformation	1	1.1%
Metastatic	2	2.3%

Table 2 showing different categories of ovarian tumors in the study

Type	Benign (no.)	Malignant(no.)
Surface epithelial tumor	56	7
Germ cell tumors	19	2
Sex cord stromal tumor	-	2
Metastatic	-	2

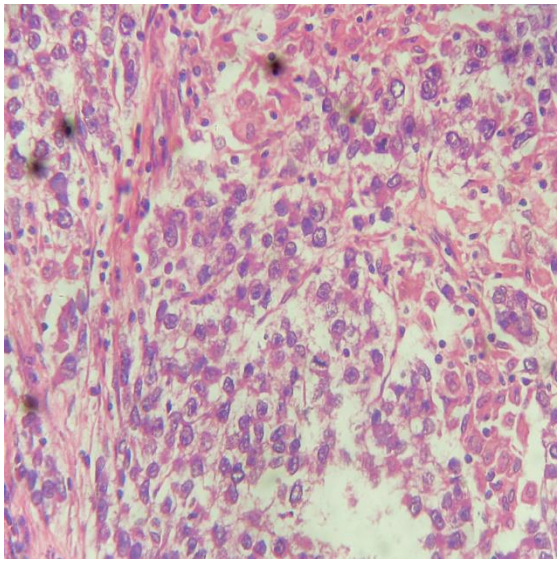

Fig 1 showing dysgerminoma of ovary (40X, H&E)

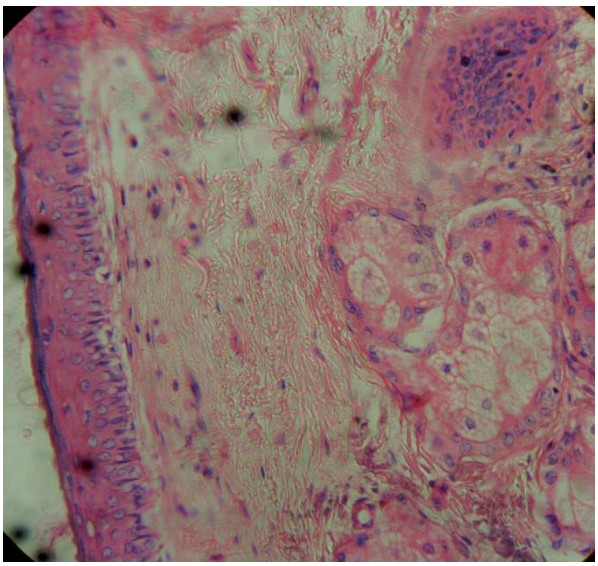

Fig 2 showing mature cystic teratoma of ovary (40X, H&E)

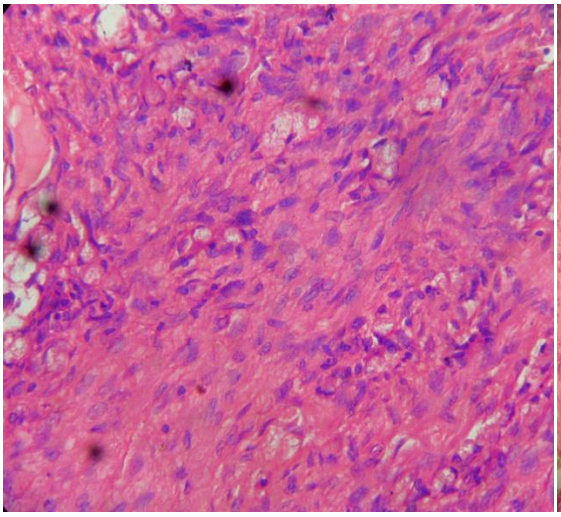

Fig 3 showing signet ring cells in Krukenberg Tumor (40X, H&E)

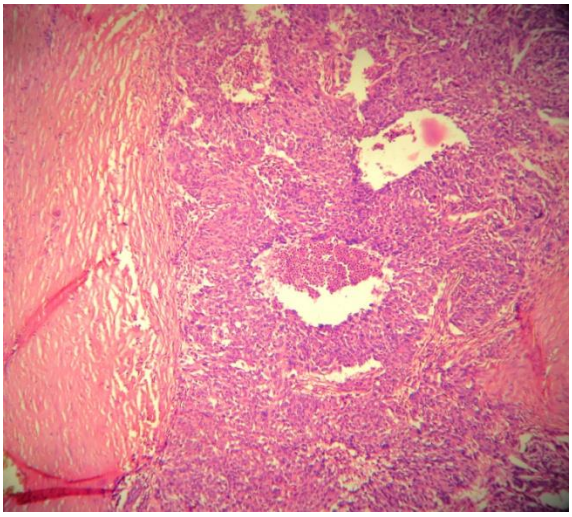

Fig 4 showing serous cyst adenocarcinoma of ovary (40X, H&E)

DISCUSSION:

In our study, 84% of the tumors were benign. This finding is similar to that of Vaidya *et al.;* [4] who reported 82% benign growths in their study. Several other studies have also found a higher percentage of benign tumors as compared to malignant [5-7]. The most common benign tumor was a serous cystadenoma followed by mature cystic teratoma. Similar findings were noted by Zubair e *et al.;* [8]. A study by Ahmed *et al.;* however found the most common benign tumor to be benign cystic teratoma (35.17%) [9], a finding also reported by Vaidya *et al.;* [4]. The other benign tumor seen in our study was mucinous cystadenoma (11 cases). The commonest malignant tumor was serous cystadenocarcinoma, which has also been reported in several other studies [9, 10]. Other malignant tumors in our study were mucinous cyst adenocarcinoma, dysgerminoma, granulosa cell tumor, sertoli leydig cell tumor with heterologous elements, metastatic adenocarcinoma, krukenberg tumor and a case of squamous cell carcinoma arising in a dermoid cyst. We categorised the ovarian tumors into broad categories of surface epithelial tumors, germ cell tumors, and sex cord stromal tumors, miscellaneous and secondary tumors. As group, surface epithelial tumors were most common (71.6 % of all tumors).Several other studies have also found surface epithelial tumors to be the commonest ovarian tumors as a group. Of these, 88.8% were benign and 11.1% were malignant. These included serous and mucinous cystadenomas and cystadenocarcinomas. Among serous tumors, 88% were benign and 12% were malignant whereas for mucinous tumors, 92.3% were benign and 7.7% were malignant. Vaidya *et al.;* in their study found 78.26% of the serous tumors to be benign, 3.26% borderline and 18.48% malignant. For mucinous tumors, 73.69% of these tumors were benign, 17.54 % were borderline and only 8.77% cases were malignant. In our study, no borderline tumors were noted. This could be due to smaller number of cases and shorter duration of our study.

Germ cell tumors comprised 25% of tumors in our study. Of these, 90.5% were benign and 9.5% were malignant. All the benign tumors were mature cystic teratomas, which included one case of struma ovary. The malignant tumors were dysgeminoma and malignancy arising in dermoid. Germ cell tumors are said to constitute 15-30% of all ovarian tumors [11]. However many studies have reported a much higher percentage of these tumors.

As described in literature, 5-12% of all ovarian tumors are sex cord stromal tumors [12, 13] and 7-12.5% are secondary tumors [14]. In our study 2.3% of the tumors were sex cord stromal tumors. We had two cases of metastases to the ovary. 6% of our cases were bilateral. While most of them were histologically identical tumors, only one case had two different tumors in the two ovaries (serous cystadenoma and mature cystic teratoma. The low number of bilateral cases could be due to the fact that our study was based on archival data and many patients underwent unilateral oophorectomy and therefore the involvement of the other ovary cannot be ruled out in these patients. The age of the patients ranged from 13 years to 70 years. The mean age of patients with benign tumors (33.6yrs) was slightly lower than that for malignant tumors (36 yrs).

CONCLUSION:

Surface epithelial tumors appeared to be the most common tumor type in our population with serous cystadenoma being the most common benign tumor and serous cystadenocarcinoma being most common malignant tumor. Malignant ovarian tumors appeared to occur at a slightly higher average age than benign tumors though many of the cases of malignancy were also seen in young patients.

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