

A Histopathological Study on Dual Tumors of Ovary

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Abstract

Introduction: Dual Tumors or Collision tumours are composed of two histologically distinct neoplasms in the same organ without intermixture of cell types. Here we present a histopathological study on dual collision tumors of ovary with brief review of literature.

Methods: In this two year prospective study, patients aged from 21 years to 60 years were taken for study who has been scheduled for ovarian tumor or ovarian mass surgeries under general anesthesia.

Results: Total 45 cases found to have ovarian tumor. Out of which two cases have a combination of mucinous cystadenoma and teratoma whereas three cases have combination of serous papillary cystadenocarcinoma with dysgerminoma and the four cases have a combination of mucinous cystadenoma and adult granulosa cell tumor.

Conclusions: These cases were diagnosed post-operatively. It is important to correctly diagnose the component of tumour for further management and favourable prognosis.

Keywords: ovarian tumors, histopathological examination, collision tumors.

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I. Introduction

In ovaries collision tumors are a rare entity, but Collision tumors are infrequently reported from various organs like oesophagus, stomach, thyroid etc [1,2,3]. These collision tumors represent the coexistence of two histologically distinct tumors without admixture of the components of the tumors but adjacent to one another in the same organ. Various neoplastic components of a collision tumor separated from each other by narrow stroma or their respective basal lamina and remain histologically distinct. Each component of a collision tumor should be considered as separate primary neoplasms [4,5]. Mucinous neoplasms occur rarely in association with granulosa cell tumor, cystic teratoma, Sertolileydig cell tumor and carcinoid tumor [6]. The present study shows the collision tumors of ovaries, predominantly the mucinous neoplasms with teratoma and granulosa cell tumor of ovary.

II. Methods

This is a two year prospective study; patients aged between 21 years to 60 years were taken consideration for the study. The patients who had undergone hysterectomy with bilateral salpingo-oophorectomy and also the patients with only oophorectomies surgeries were taken for study. Post operatively the specimens were sent for histopathological examination. These specimens which were received in histopathology were fixed overnight in 10% formalin. The gross examination of these ovarian masses were done and bits were taken for microscopic examination from the ovarian masses. These tissuebits were processed in automatic tissue processor and embeded, the sections were taken on to the slides and stained with Hematoxylin and eosin. These sections were studied under microscope for histopathological diagnosis.

III. Results

Out of 360 hysterectomy with bilateral salpingo-oophorectomy including oophorectomy surgeries. Total 45 (12.5 %) cases found to have ovarian tumor. Out of which two cases have a combination of mucinous cystadenoma and teratoma whereas one case have combination of serous papillary cystadenocarcinoma with dysgerminoma and one cases have a combination of mucinous cystadenoma and adult granulosa cell tumor. The nature of specimen received in histopathology laboratory was shown in (table 1). The distribution of dual ovarian tumors was shown in (table 2).

Table :1 Nature of specimen received in histopathology laboratory

Type of specimen	Number of specimens	percentage
hysterectomy with bilateral salpingo-oophorectomy	279	77.5%
Unilateral oophorectomy	25	6.94%
Bilateral oophorectomy	56	15.56%
Total	360	100%

Table :2 . Distribution of Dual ovarian tumors

Type of dual tumor	Number of cases
mucinous cystadenoma and teratoma	2
serous papillary cystadenocarcinoma with dysgerminoma	1
mucinous cystadenoma and adult granulosa cell tumor	1
Total	4

IV. Discussion

Dual tumors in ovary are a rare entity. Dual tumors are histologically distinct tumors without admixture in the same tissue or organ but represent a coexistence of two adjacent tumors. Mucinous cystadenoma and Granulosa cell tumor are independent tumor arising from surface epithelium of ovary and sex cord stromal cells respectively. Though dual tumors have been reported earlier, like serous cystadenoma and mature cystic teratoma,[5] but combined mucinous cystadenoma and Granulosa cell tumor was rarely reported. In present study we reported one case of dual tumors like combination of mucinous cystadenoma and adult granulosa cell tumor which is very rare. It is often difficult to find the Differentiation of a true dual tumor from a composite tumor developed as a result of divergent differentiation of a single clone. Immunohistochemistry may fail to identify actual developmental route but provides information on the differentiation of the tumor cells. The study of the tumor genetics can be useful to determine the way of development of a neoplasm. Examination and comparison of pattern of loss of heterozygosity in two parts of composite tumor can provide useful clue of answering mono or multiclonal development of neoplasm[7]. In our present study, we identified and reported the dual tumors of ovary easily because both tumors were completely separated by intervening stroma making diagnosis easy and straight forward. Most collision tumours are diagnosed postoperatively after histopathological examination. Dual tumours are more often unilateral, and can vary in size from 2 to 200 cm and mostly occur in the age group of 17-66 years[8]. In few studies showed that most of the dual tumors had radiologic clues such as the presence large solid component and nonfatty fluid in the cyst in the ovarian mass, which pointed toward the presence of two different tumors[9]. In present study all the dual tumors diagnosed postoperatively and all the tumors found are unilateral with varying in size from smallest measuring 6cm and largest 10 cm. Dysgerminomas account for about 55% of malignant germ cell tumors of ovary. These are commonly seen in young females and majority of the tumors are solid in consistency with soft fleshy cut surface and unilateral. 65% of Serous cystadenocarcinomas are bilateral and commonest ovarian malignancies. Women of 30-50 years age group are commonly affected. Grossly, the tumors are partly solid, partly cystic with complicated branching structures within cystic areas[4]. In our present prospective study we received one case with combination of cystadenocarcinoma and dysgerminoma. The presentation of this dual tumor was unilateral and grossly showed the areas of cystic and solid component.

V. Conclusion

To conclude dual tumors of ovary are very rare. Postoperatively histopathological examination that is careful gross examination and extensive microscopic examination for recognition or diagnosis of these dual tumors are important for further management and prognosis.

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