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Unilateral High Grade Serous Carcinoma of Right Adnexa – A Case Report

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ABSTRACT

Ovarian carcinomas are the most fatal among malignancies of female reproductive tract. The most prevalent type of ovarian cancer, high grade serous carcinoma, has a complex mechanism of carcinogenesis and a poor outcome. However, in recent years, increasing evidence has suggested that tubal fimbriae lesions may be precursor lesions for ovarian high grade serous carcinoma. Here we report a case of high grade serous carcinoma ovary arising from fallopian tube in a 60 year old post menopausal woman.

KEYWORDS: High grade serous carcinoma, ovary, serous tubal intraepithelial carcinoma

ARTICLE DETAILS

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INTRODUCTION

The most common gynaecological cancer that results in mortality is ovarian carcinoma. Serous carcinomas are the most frequent histological type of ovarian cancer which corresponds to 80% of ovarian cancer cases in developed countries. With a 5-year survival rate of only 20%, the median overall survival period for advanced ovarian cancer is 15–23 months. Despite tremendous efforts, various screening and treatment approaches often have not resulted in improved overall survival.

A key obstacle to more effective diagnostic and therapeutic approaches for ovarian cancer has been our incomplete understanding of the disease's natural course. High grade serous carcinoma was found to have a tubal origin, which was validated by molecular and genetic research, in vitro experiments, and animal models. Risk factors include age more than 60, family history of breast/ovarian cancer, and infertility. Protective factors include multiple pregnancies, breast-feeding, oral contraceptive use, late menarche, and early menopause.

CASE REPORT

60 year old post menopausal woman P1L1 presented with watery discharge per vagina on and off since 1 and half years which was not foul smelling,not blood stained. No history of post menopausal bleeding,abdominal pain or distension.

She was evaluated with USG abdomen and pelvis which showed right adnexal complex solid and cystic lesion. MRI pelvis with contrast showed complex solid cystic lesion in right adnexae,her serum CA 125 was raised. Following evaluation staging laparotomy was done

Intra operative findings-Right ovary cystic with haemorrhagic fluid within,measuring 4x4 cm. In ampullary end of right fallopian tube seen a 3x2 cm solid mass which was highly vascular and friable. Total abdominal hysterectomy with bilateral salpingo oophorectomy, infracolic omentectomy,pelvic and para aortic lymph node sampling was done and same was sent for histopathology

GROSS

Figure 1: Received uterus with attached cervix, left adnexa and distorted right adnexa. Right adnexa shows a complex solid and cystic lesion mea 6.5x4x2 cm. The right tube is partly incorporated into the lesion and normal ovary is identified towards the periphery.

Figure 2: Cut section shows solid and cystic areas. Cut section of solid areas are grey white with areas of necrosis and haemorrhage. Cut section of cystic area shows multiloculated cysts filled with solidified gelatinous material. Cut section of uterus ,myometrium shows tiny intramural fibroids and cut section of cervix, left adnexa unremarkable

MICROSCOPY

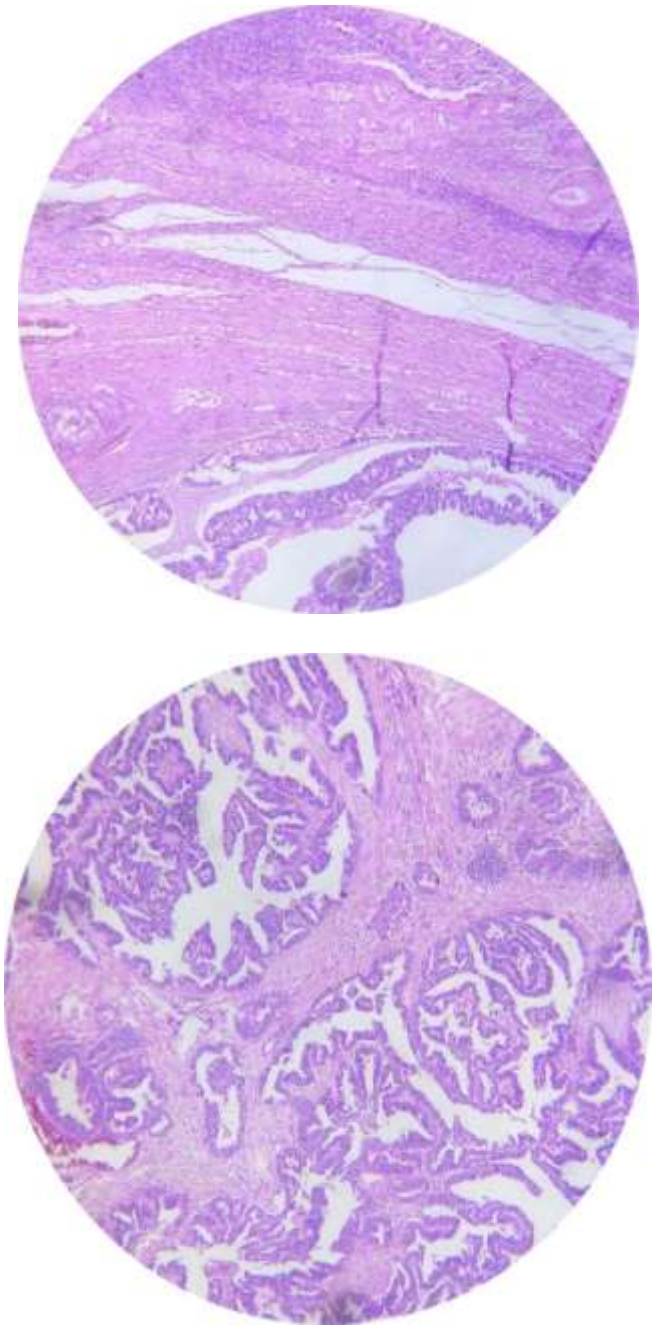

Figure 3: Section from ovary shows a neoplasm composed of cells arranged in papillary pattern with central fibrovascular core.

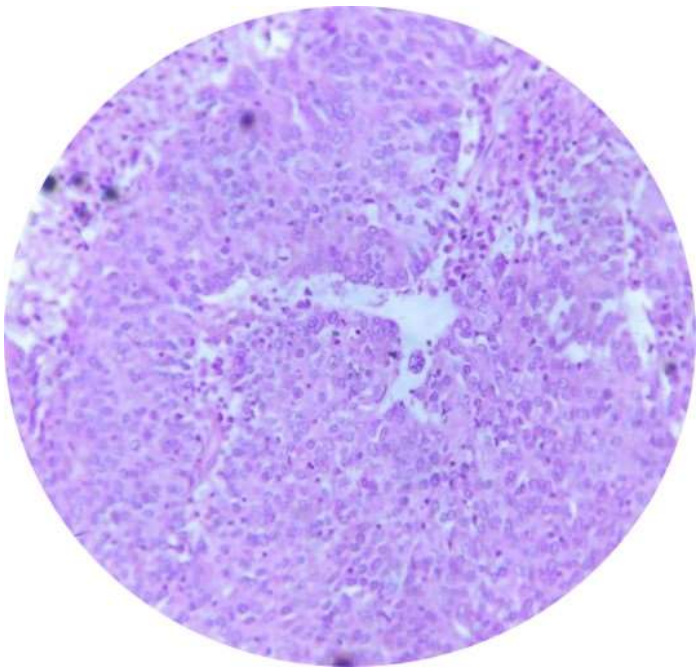

Figure 4: Solid pattern

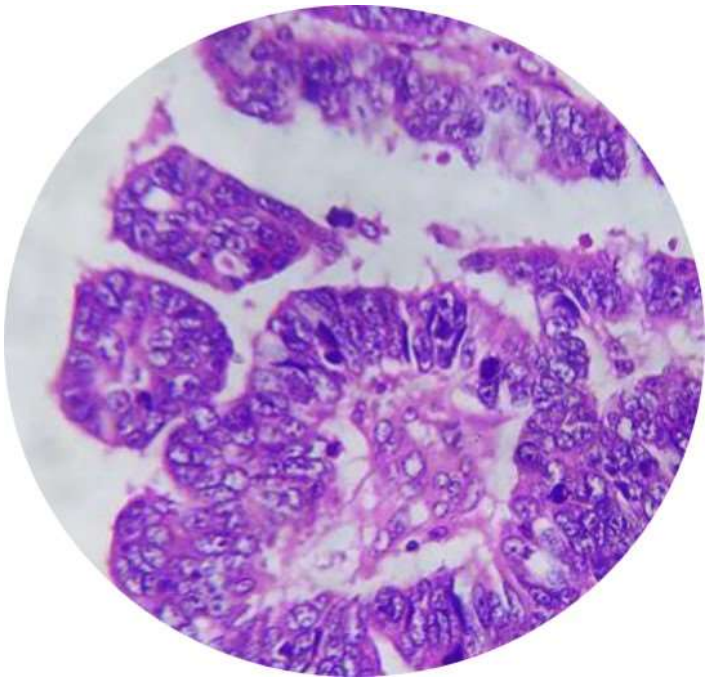

Figure 5: Individual cells are columnar with high nuclear cytopla smic ratio,scanty to moderate eosinophilic cytoplasm,highly pleomorphic vesicular nucleus with irregularly clumped chromatin,conspicuous nucleoli.

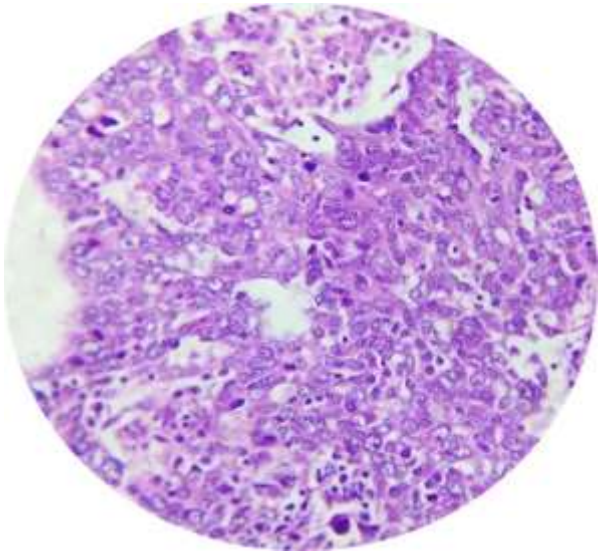

Figure 6: Tumour infiltrating lymphocytes and mitosis with atypical forms.

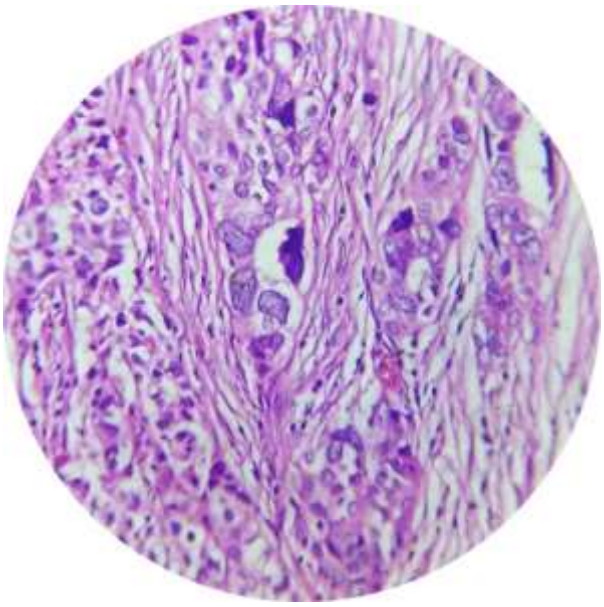

Figure 7: Bizarre cells

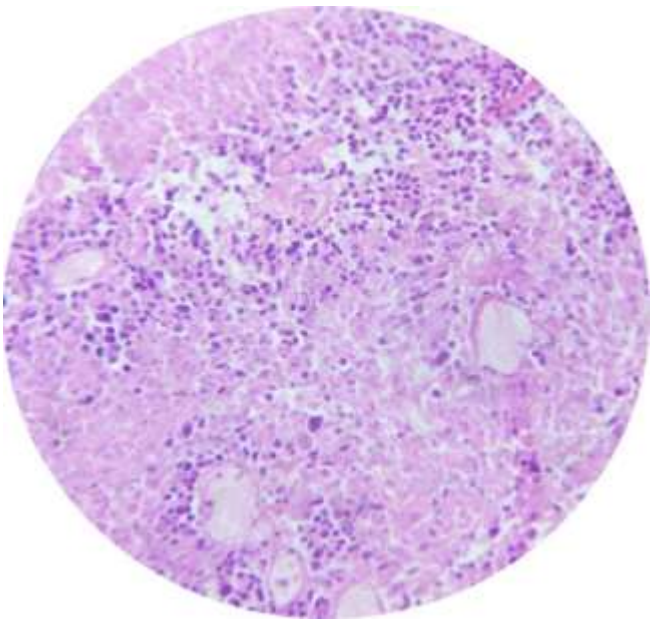

Figure 8: Areas of necrosis

DISCUSSION

High grade serous carcinoma is a high grade epithelial neoplasm demonstrating serous differentiation. The average age upon diagnosis is 65 years. An average woman has a 1.7% lifetime risk of acquiring ovarian cancer. However, the risk rises to 56% and 27%, respectively, among women who have BRCA1 and BRCA2 mutations. The fallopian tube is where the majority of early stage malignancies in women with BRCA mutations are discovered. The origin of serous subtype was long debated but in case of high grade serous neoplasms it is now widely acknowledged that the majority come from the epithelium of the fallopian tube.

High grade serous carcinoma develops from the tubal type epithelium, generally in the fallopian fimbriae and less frequently on the surface of the ovary or within ovarian epithelial inclusion cysts. It seemed logical to presume that the disease originated in the ovary because the majority of high grade serous carcinoma patients exhibit malignant involvement of the ovary, even at an early stage.

The initial theory, known as the "incessant ovulation hypothesis," suggested that the ongoing process of ovarian surface epithelium repair and regeneration caused by ovulation may lead to the development of cancer. Later, a different idea was advanced which suggests that serous ovarian carcinomas were derived from secondary mullerian system, the vestigial remnants of mullerian epithelium present ectopically outside the cervix , endometrium and fallopian tube.In 2001 presence of small dysplastic lesions in fallopian tube in a study lead to the discovery of SEE FIM.Later, these lesions were referred to be STIC(Serous tubal intraepithelial carcinoma).

The presence of these microscopic intraepithelial carcinomas revealed that high grade serous ovarian cancer, at least in individuals with the BRCA1/BRCA 2 mutation, was most frequently derived from the secretory epithelial cells of the distal fallopian tube. For a tumour growing on surface of ovary or fallopian tube there are no anatomical barriers capable of restricting the spread. Solid, pseudoendometrioid, transitional cell carcinoma-like (SET) appearance can be more commonly seen in BRCA1 mutations, hence genetic testing is necessary in such cases.

One of the principal factors influencing the elevated mortality is the inability to diagnose at an early stage. The vast majority of cases are typically discovered at an advanced stage of distant metastasis, which adversely affects a patient's prognosis.

The distinction usually isn't important in cases where the primary site cannot be identified as most cases are high grade at the time of presentation, and the treatment and prognosis for a high-grade serous carcinoma that simultaneously affects the ovary and peritoneum/fallopian tube are the same regardless of the primary site of origin. But earlier detection of this disease is likely to benefit from the identification of a precursor lesion in the fallopian tube(STIC). Hence systematic sectioning and thorough inspection of the entire fallopian tube should be practised in pathology. Identification of precursor lesion raise the possibility of new screening methods due to the window of time that seems to occur between the development of ovarian cancer and the appearance of fallopian tube lesions.

While CA 125 levels and transvaginal USG showed some promise in terms of early identification, patient outcomes failed to improve. For patients with a known family history of breast and ovarian cancer, genetic tests may be helpful in identifying heritable BRCA mutations.In such situation the at risk individuals might elect to undergo risk reducing prophylactic surgery such as bilateral salpingo oophorectomy, after completion of child bearing. In up to 85% of cases, this approach has been shown to be successful in avoiding the development of ovarian cancer.

CONCLUSION

As the lesion is found to be originating from tubal epithelium SEE FIM protocol should be followed strictly in all cases of high grade ovarian serous carcinoma . As there is a window of time that exist between formation of fallopian tube lesions and development of ovarian cancer, systematic sectioning and thorough examination of the entire fallopian tube will aid in the early detection of precursor lesion and helps in prevention of high grade ovarian cancers.In case of BRCA1 AND BRCA 2 mutated patients prophylactic salpingectomy can be done as the high grade serous carcinoma in such patients are arising from the tubal epithelium, hence preventing its progression to high grade cancer.

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