Primary Squamous Cell Carcinoma of the Fallopian Tube- Report of a Case and Short Review of Primary Malignancies of the Fallopian Tube

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ABSTRACT: Primary squamous cell carcinoma of the fallopian tube is the rarest of all the gynecological malignancies, which is often diagnosed as a benign entity or as ovarian pathology. We present the fourth case of primary squamous cell carcinoma of the fallopian tube in the English language literature. The clinicopathological characteristics of the primary malignancies of the fallopian tube are also briefly reviewed.

KEY WORDS: Squamous Cell Carcinoma, Fallopian Tube, Case Report.

INTRODUCTION:

Primary carcinoma of the fallopian tube is rare, accounting for about 1% of all gynecological malignancies[1]. The incidence ranges from 0.142 to 1.8% with reported incidence being 0.3% [2].

In primary tubal malignancy, the uterus and ovaries should appear largely normal on gross examination; the foci of malignancies in these organs, if present should have the appearance of metastasis or as independent primaries by virtue of their size and distribution[3]. Histologically, Adeno carcinoma is the most common type and Carcinosarcoma is the least common[4]. Squamous cell carcinoma is the rarest of all with only 3 cases reported so far in the English literature[5]. Patients with fallopian tube malignancies usually present with pelvic pain, pelvic mass, post menopausal bleeding and serosanguinous vaginal discharge which does not specifically point to a fallopian tube lesion. Image studies, CT scan and serum assay for CA-125 may help to detect these cases clinically. The prognosis of primary malignancies of the fallopian tube depend more on the clinical stage than on the histological type. Most of the patients of primary tumors of the fallopian tube will be in Stage I or II at the time of diagnosis.

As tubal malignancies are rare and carry a poor prognosis, more extensive research need to be performed to have definitive etiologic, diagnostic and treatment guidelines[6].

We present the fourth case of primary squamous cell carcinoma of the fallopian tube reported in English language literature and review briefly the primary malignancies of the fallopian tube.

CASE DETAILS:

A sixty year old female presented with postmenopausal bleeding since last 8 months, vague abdominal pain with a palpable ill defined mass in the left iliac fossa. Pain was dull aching and was not related to meals. She also had complaints of frequent foul smelling vaginal discharge. No other significant clinical findings were elicited and her medical and surgical history was otherwise unremarkable.

Per abdominal examination revealed a firm non tender mass in the left iliac fossa. Per vaginal examination revealed a left forniceal mass. Abdominal ultrasound showed a solid tubo-ovarian mass measuring 9 × 5cms on left side. Transvaginal ultrasound showed solid adnexal mass more in the location of fallopian tube. Cytological examination of cervicovaginal smear showed inflammatory smear. Intravenous pyelogram, barium meal and barium enema studies revealed no abnormality. CA-125 tumor marker levels were done and found to be mildly elevated.

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A provisional diagnosis of ovarian malignancy was made and surgery was undertaken. On surgical exploration, the uterus, right adnexa and left ovary appeared normal. The left fallopian tube appeared dilated and filled with a solid mass. Total abdominal hysterectomy with bilateral salpingo-oopherectomy was done. The entire resected specimen was subjected to histopathological study.

Pathology findings

Gross features: The left side fallopian tube was dilated, cut surface revealed a solid mass measuring 10 × 5 cms, filling the entire lumen. The left ovary was adherent to the mass. The right fallopian tube appeared to be thickened and swollen. On cut section yellowish fluid oozed out of the right fallopian tube. The left ovary was slightly enlarged and part of it was adherent to the wall of the left fallopian tube. The right ovary and uterine cervix appeared unremarkable.

Microscopic: Sections from the solid mass filling the left fallopian tube revealed a well differentiated squamous cell carcinoma arising from the mucosa and extending through the muscle coat into the serosa with extensive secondary inflammatory changes. The tumor cells were seen as diffuse sheets and clusters with hyperchromatic nuclei. Well formed epithelial perls were seen in the tumor cell clusters. Mitotic figures were scanty. **(Figure 1, 2 and 3)**

The left ovarian surface adjacent to the mass showed foci of tumor deposits by direct extension **(Figure 4)**. Sections from both ovaries did not reveal any evidence of Teratoma The contra lateral fallopian tube showed features of chronic non specific salpingitis. Sections from uterine cavity and cervix were unremarkable.

Patient was referred to the nearest tertiary hospital for further management. The patient is being followed for the last 2 years and she is doing well without any complications.

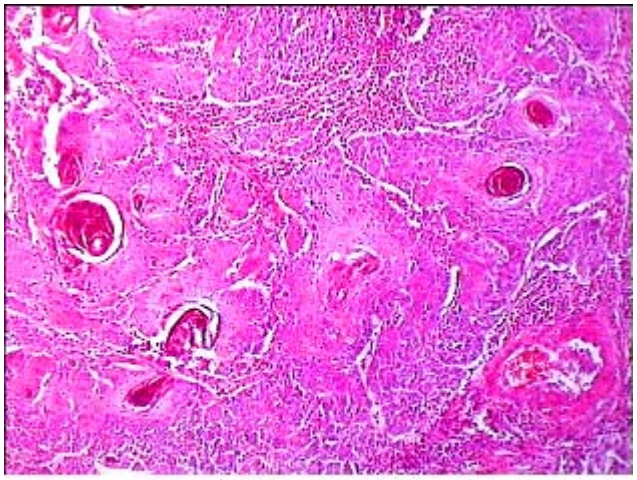

Figure 1: Well differentiated squamous cell carcinoma with evidence of keratin Perl formation, sheets and trabeculae of tumor epithelial cells. H&E * 20

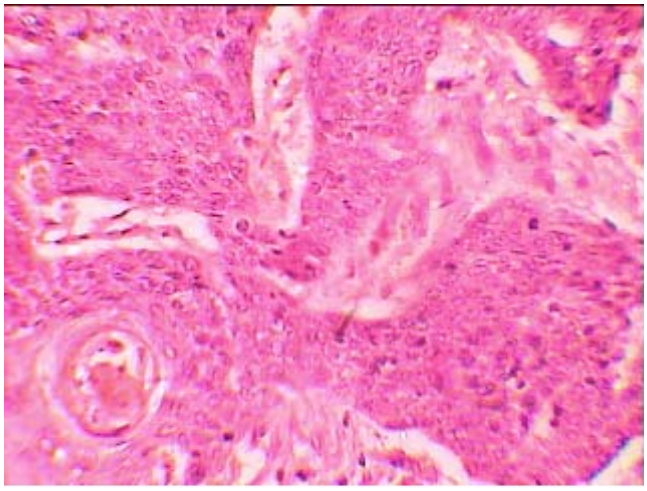

Figure 2: Well defined malignant squamous epithelial cells with a focus of keratin perl. H&E * 40

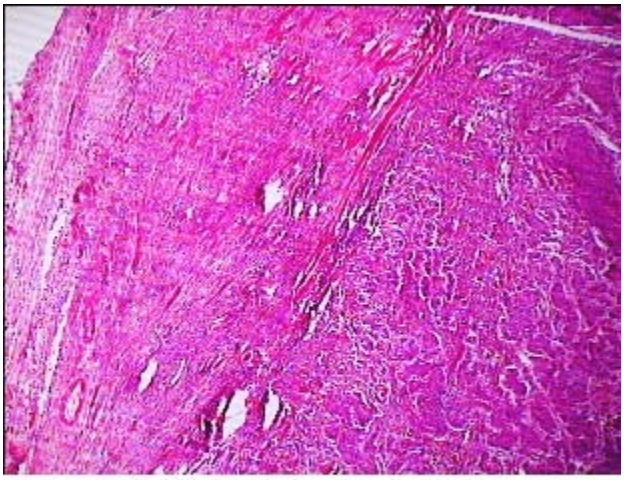

Figure 3: Clusters of malignant cells infiltrating the wall of the fallopian tube and reaching the serosa. H&E * 20

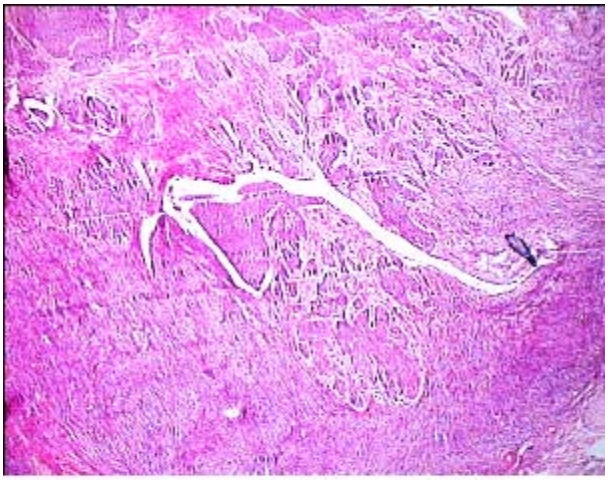

Figure 4: Clusters of tumor cells invading the outer surface of the ovary. H&E * 20

DISCUSSION:

Primary squamous cell carcinoma of the fallopian tube is a very rare entity and has to be distinguished from the tumors metastatic to the fallopian tube which are more common.

The criteria for the diagnosis of primary tubal carcinoma are very rigid because by convention, a carcinoma extensively involving both endometrium and tube is classified as an endometrial tumor and one extensively involving both ovary and tube is regarded as an ovarian neoplasm. A primary malignancy is diagnosed based on it's location on the surface of broad ligament and by virtue of complete separation of the tumor from the uterus and ovaries. Eighty percent of malignant tumors of fallopian tube are metastatic deposits from other sites, most commonly from ovary, endometrium and gastrointestinal tract[4].

In 1847, **Renaud** first described fallopian tube malignancy. It appears that so far about 1500 cases of primary tumors of the fallopian tube have been recorded[6]. Fallopian tube malignancy usually starts as a dysplasia or carcinoma-in-situ. Its etiology remains unknown. Infertility and chronic salpingitis were believed to increase the incidence but have not yet been proven though there is increased association with tubercular salpingitis. Similar to ovarian malignancy, a BRCA germ line mutation and Tp53 mutation is associated with increased incidence of malignancy[7]. In the present case presence of extensive inflammation of the contralateral fallopian tube may suggest a long standing bilateral chronic non specific salpingitis as the possible etiological factor.

Patients with fallopian tube malignancy usually present with pelvic pain, a pelvic mass, post menopausal bleeding and serosanguinous vaginal discharge. The classic description of hydrops tubal profluens, which is characterized by colicky lower abdominal pain relieved by intermittent, profuse, serous, watery intermittent vaginal discharge usually, is not found.

On physical examination, a palpable pelvic or abdominal mass is seen, with or without ascites. Investigations usually begin as for post menopausal bleeding and include Papanicolau smear test which may show malignant cells or a inflammatory smear. Sonography helps to demonstrate solid to cystic masses in the adnexal region though a preoperative diagnosis of fallopian tube carcinoma is suspected in fewer than 5% of cases. The diagnostic criteria are presence of a solid mass in an expected location of fallopian tube in association with normal ovaries or a sausage shaped solid to cystic mass. Imaging studies like hysterosalpingography helps in detecting intraluminal growth. CT scan helps in localizing spread to other intraabdominal or retroperitoneal sites. Increased levels of CA-125 have been described in some patients[8].

The histological types of carcinoma include Serous carcinoma (50%), endometrioid carcinoma (25%), transitional cell carcinoma (11.7%), undifferentiated carcinoma (7.8%) and clear cell carcinoma (1.9%)[5]. Other malignant

tumors like mixed mullerian tumors and carcinosarcoma have rarely been reported in the literature. So far there have been only 3 cases of primary squamous cell carcinoma reported in the English language literature[5].

Surgery the mainstay of treatment is also the final approach to diagnosis. Total abdominal hysterectomy with bilateral salpingoopherectomy is the procedure of choice. A post operative histopathological examination of tissue mass establishes the diagnosis. Further investigations like cytological examination of peritoneal washing/ascitic fluid, pleural fluid for malignant cells; screening of retroperitoneal and inguinal lymph nodes, hepatic parenchyma for metastasis helps in staging.

The prognosis of primary malignancies of fallopian tube depends more on staging than on histologic type and grade. The staging system proposed and used by several investigators is essentially based on tumor presentation through the layers of tube[8]. FIGO gave a modified staging where-

- STAGE 0: Carcinoma-in-situ or carcinoma limited to tubal mucosa.
- STAGE 1: Mass limited to fallopian tube.
- STAGE 2: Mass with pelvic extension.
- STAGE 3: Mass with peritoneal implants beyond pelvis, positive retroperitoneal/inguinal lymph nodes.
- STAGE 4: Distant metastasis-including liver, lungs.

Fifty percent of fallopian tube squamous cell carcinomas are stage 1 and 2 at the time of diagnosis. Involvement of the tubal serosa, ovary, corpus uteri, or other pelvic or abdominal structures indicates poor prognosis[9]. Five year survival rates are high as 77% for Stage 1 lesions, 40% for Stage 2 and about 20% for Stage 3[10,11,12].

The staging and prognosis in primary squamous cell carcinoma of the fallopian tube appear to be same like other histological types. In the present study the patient presented in the Stage 2 with surface extension into the left ovary.

CONCLUSION:

The incidence of malignancy in the fallopian tube is very low. Primary Squamous cell carcinoma of fallopian tube is a rare gynecological malignancy. It is difficult to identify and confirm. Primary tumors of the fallopian tube present clinically as ovarian neoplasms. Metastatic deposits in the fallopian tube are much more common than primary tumors of the fallopian tube. Hence when a squamous cell carcinoma is encountered in the fallopian tube all other possibilities like metastasis to fallopian tube or direct extension to the fallopian tube from adjacent organs have to be ruled out before considering the lesion as primary in the fallopian tube. The prognostic features and behaviour of the squamous cell carcinoma is just like any other carcinoma occurring in the fallopian tube.

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