

Case Report

Fallopian Tube Carcinoma: A Case Report and Review of Literature

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ABSTRACT

Primary fallopian tube carcinoma is a rare tumor that histologically and clinically resembles epithelial ovarian cancer. Here we introduce a case of tubal carcinoma in a postmenopausal woman. The diagnosis of primary fallopian tube carcinoma is rarely considered preoperatively and is usually first appreciated by the pathologist. Because of low frequency of tubal carcinoma, there are few systemic pathological reports of its mode and extent of spread. Surgical staging and management as the use of chemotherapy follow the concepts used in epithelial ovarian cancer. In contrast to epithelial ovarian cancer, it is the importance of early lymphatic spread in this disease. The earlier diagnosis of primary fallopian tube carcinoma leads to an apparent better survival compared with its ovarian counterpart. However, as with epithelial ovarian carcinoma, stage and residual tumor are the most important prognostic variables. Only with more extensive clinical researches, ovarian carcinoma management principles should be used in clinical practice of this tumor.

Keywords: Fallopian Tube, Carcinoma, Immunohistochemistry, Iran

Introduction

Primary fallopian tube carcinoma is an uncommon tumor accounting for approximately 0.14% - 1.8% of female genital malignancies (1). Based on the data obtained from nine population-based cancer registries in the U.S., it is estimated, that the average annual incidence of primary fallopian tube carcinoma is 3.6 per million women per year. This estimation might be lower than real frequency because some cases of fallopian tube carcinoma remain under-recognized as a primary neoplasm (2). A study from Finland

reported that the incidence of primary fallopian tube carcinoma is increasing, with an age-adjusted incidence of 1.2 per million for 1953-1957 to 5.4 per million for 1993-1997 (3). It is also possible that the true incidence of primary fallopian tube carcinoma has been underestimated because may have been mistakenly identified as ovarian tumor during initial surgery and/or during microscopic examination by a pathologist, as the histological appearance of the tumors is identical. About 1200 cases of primary fallopian tube carcinoma have been reported in the

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literature until now (4, 5).

The purpose of this case report is to introduce a postmenopausal woman with pelvic and abdominal serous carcinoma, in which tubal intraepithelial carcinoma was established.

Case Report

Clinical feature

A 70 years old female with abdominal discomfort and pain was referred. Surgery revealed diffuse tumor infiltration of pelvis and abdomen associated with omental, peritoneal and umbilical involvement; supracervical hysterectomy and bilateral salpingo-oophorectomy was done. The uterine cervix could not be resected because of severe adhesion to pelvic contents. In addition, biopsy sample from omentum, peritoneum and umbilicus were obtained (Pathology report No: P86-4787, Dr. Shariati Hosp, Tehran University of Medical Sciences).

Gross pathologic features

The serosa of uterus was irregular and granular, particularly at the left lateral aspect. The endometrium, myometrium, both ovaries and the right uterine tube are within normal limits. Sections of the left uterine tube revealed normal diameter but occupied lumen, which is filled by friable, grayish-white tumor; the fimbriated end of this tube is open.

The associated tissue fragments of peritoneum, omentum and umbilical mass all are composed of irregular-shaped fibrofatty tissue fragments with focal firm idurations.

Histologic features

A serous tumor with prominent papillarity occupied the lumen of tube, also showing slit-like spaces and detached cells (Fig. 1,2).

Immunohistochemical features:

- EMA: Positive in tumor cells (Fig. 3)
- Cytokeratin: Positive in tumor cells (Fig. 4)
- CEA: Negative in tumor cells
- CD15: Negative in tumor cells
- Cytokeratin 20: Negative in tumor cells
- Cytokeratin 7: Positive in tumor cells (Fig. 5)
- Vimentin: Negative in tumor cells
- Calretinin: Negative in tumor cells
- Thrombomodulin: Negative in tumor cells

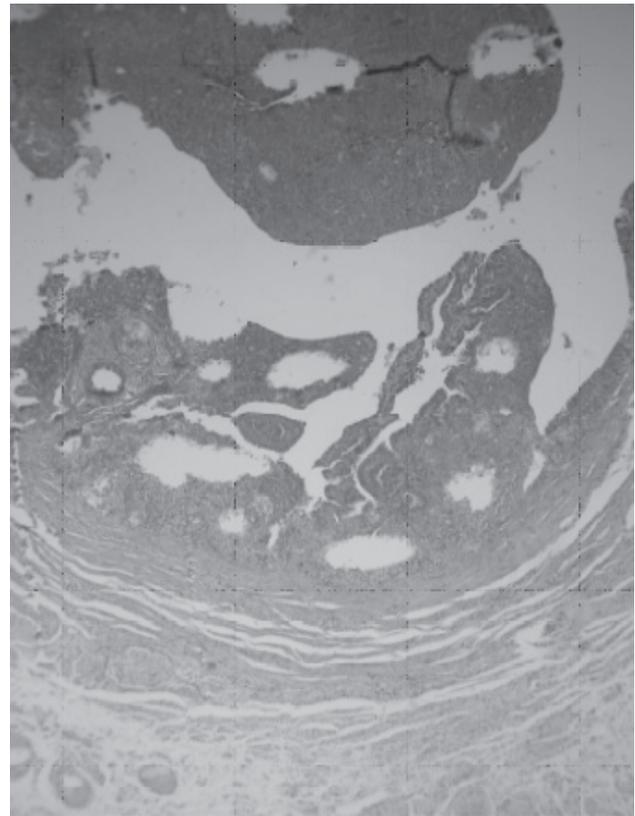


Fig. 1: Cut section of left fallopian tube with intraluminal tumor(H&E $\times 100$)

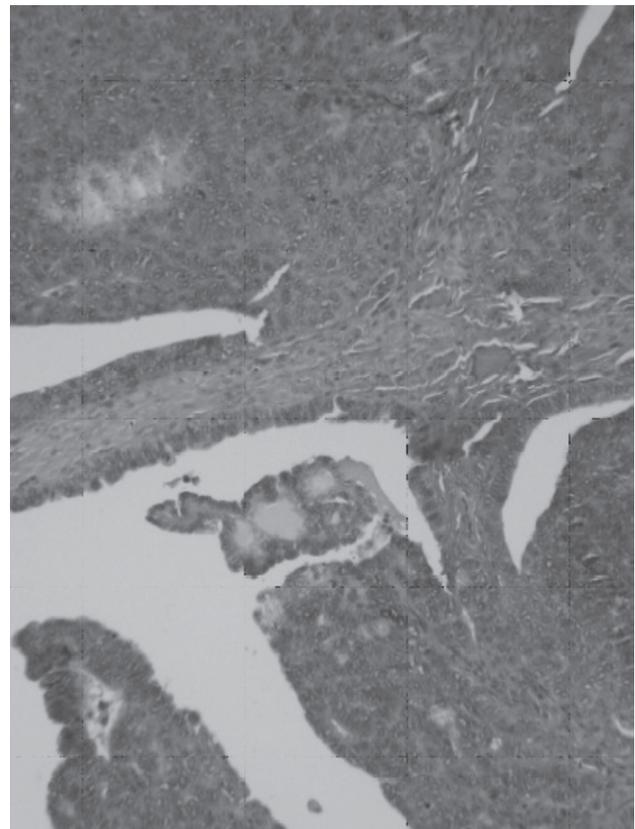


Fig. 2: Higher magnification of fallopian tube with serous adenocarcinoma showing prominent papillarity(H&E $\times 400$)

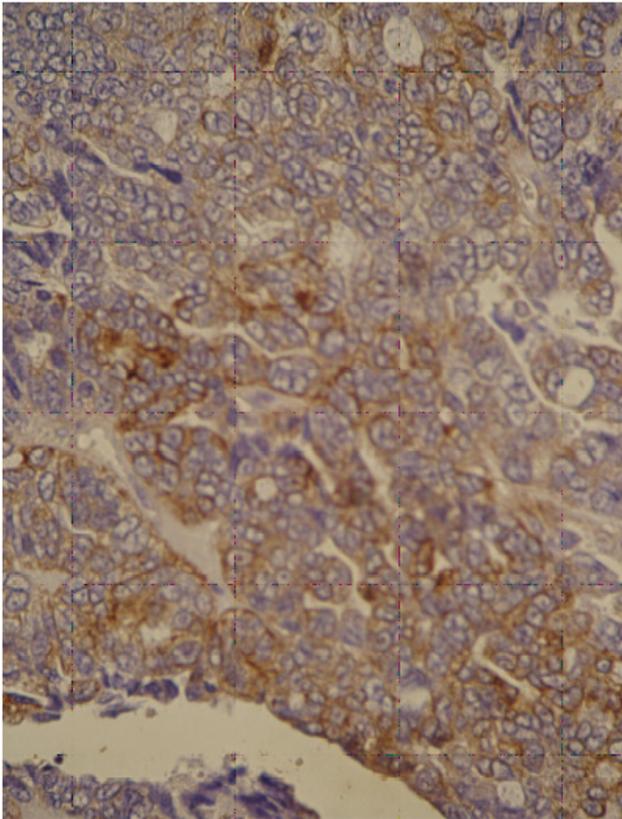


Fig. 3: Positive immunoreaction for EMA in tumor cells

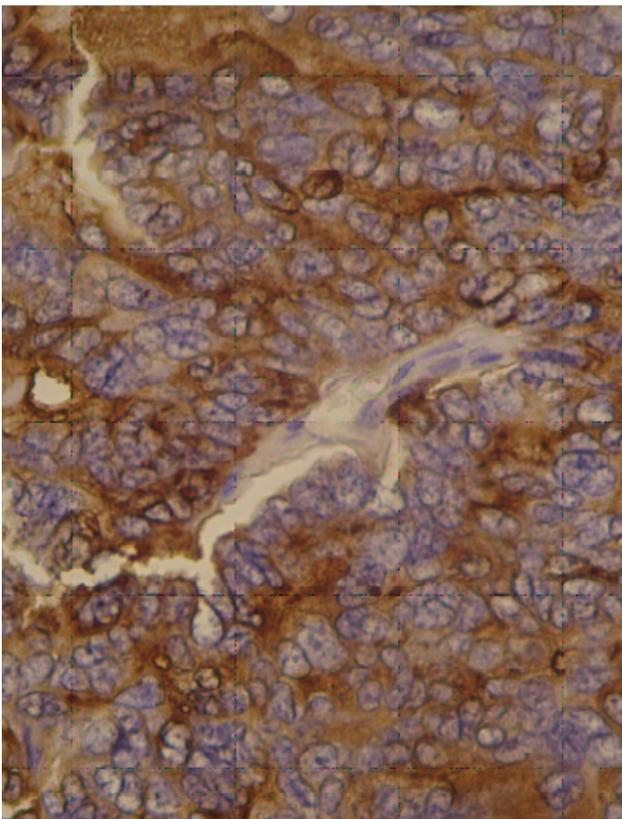


Fig. 4: Positive immunoreaction for Cytokeratin in tumor cells

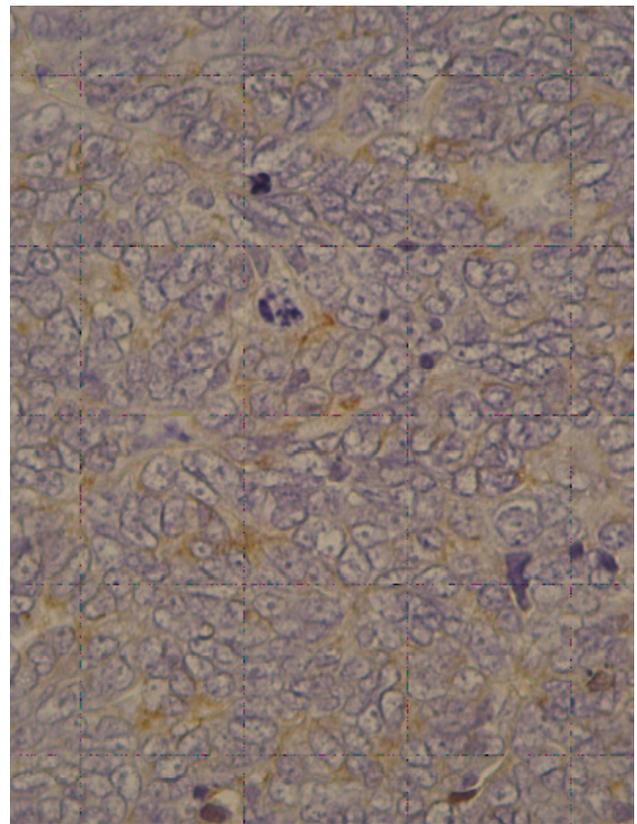


Fig. 5: Positive immunoreaction for cytokeratin 7 in tumor cells, Note the atypical mitotic figures

The overall H&E and IHC findings were in favor of papillary serous adenocarcinoma.

Considering normal and microscopic appearance of both ovaries and endometrium, accompanied by presence of tumor in the left fallopian tube, which also exhibits open fimbriated end, the most probable origin of the tumor is fallopian tube with extensive secondary involvement of peritoneum and pelvic structures.

Discussion

For many years, primary carcinoma of fallopian tubes has been considered to account for only 0.5% of gynecologic cancers, but this figure may be low because carcinoma of uncertain origin involving both ovary and tube are generally classified as ovarian in view of their much higher overall frequency. The result of a screening study using CA 125 assay, however, support a high frequency of tubal carcinoma, as one tubal carcinoma was detected for every six ovarian carcinomas. Most patients with primary fallopian tube carcinoma are postmenopausal, with a mean age of 57 yr.

The distinctive presentation of intermittent, profuse, watery, clear to yellow (cholesterol-rich) vaginal discharge is accompanied by colicky abdominal pain. The most common symptoms, which is seen in two thirds of patients is postmenopausal bleeding. The diagnosis is usually unsuspected preoperatively. Thus pre-operative diagnosis of fallopian tube carcinoma is seldom made and most of the times the diagnosis is made on the operating table or in pathology laboratory (6). Lymphatic spread is less common and depends critically on the tumor grade: Grade 1 carcinomas do not metastasise to lymphnodes even in advanced stages, whereas Grade 2 and 3 carcinomas do so relatively early (7, 8). Hematogenous spread is uncommon and metastatic sites include lung, liver, bowel and bone (7). Primary fallopian tube carcinoma is mostly seen in the ampulla (7). Bilaterality has been reported in 10% to 20% of cases but in some experiences only in about 3 % (7, 9).

About half of the tubal carcinomas are serous, roughly a forth are endometrioid, a fifth are transitional or undifferentiated and the remainder are of other rare epithelial cell types (10).

Jarboe, *et al.* recently described a "latent" precursor lesion to pelvic serous carcinoma; this precursor is termed the "P53 signature", which is a discrete and strong P53 nuclear immunohistochemistry in at least 12 consecutive nonneoplastic secretory cells as a requisite for inclusion into the SCAT(Serous carcinogenesis in the tube) sequence (11).

In our case, the external shape of tube was not disturbed but the lumen was full of tumor tissue and the fimbriated end was open, which is an adverse prognostic factor. The histologic features were compatible with a serous papillary adenocarcinoma, invaded into the lamina propria.

Immunohistochemical studies are performed because the main clinical manifestation was diffuse intraabdominal extension of tumor and differential diagnoses such as ovarian tumor, mesothelioma, carcinoma of GI and biliary tract should be ruled

out. Our purpose was to alert pathologists for this tumor in which the preoperative diagnosis is usually impossible.

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