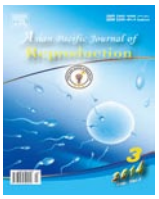
Asian Pacific Journal of Reproduction

Journal homepage: www.apjr.net



Document heading doi: 10.1016/S2305-0500(14)60034-8

A case of bilateral primary fallopian tube carcinoma

Manisha Sahu[1], Prakash K. Sahoo[2], Mahesh C. Sahu[3], Rabindra N. Padhy[3*]

[1]*Department of Obstetrics & Gynecology, Institute of Medical Sciences & Sum Hospital, Siksha O Anusandhan University, Kalinga Nagar, Bhubaneswar 751003, Odisha, India*

[2]*Department of Surgery, Institute of Medical Sciences & Sum Hospital, Siksha O Anusandhan University, Kalinga Nagar, Bhubaneswar 751003, Odisha, India*

[3]*Central Research Laboratory, Institute of Medical Sciences & Sum Hospital, Siksha 'O' Anusandhan University, Kalinga Nagar, Bhubaneswar 751003, Odisha, India*

ARTICLE INFO

Article history:
Received 7 August 2013
Received in revised form 10 December 2013
Accepted 10 December 2013
Available online 20 September 2014

Keywords:
Fallopian tube
Carcinoma
Serum CA-125

ABSTRACT

A 60 years old postmenopausal woman was presented with complaints of intermittent watery discharge from vagina, and of cramping pain at the lower abdomen. On pelvic examination, blood tinged watery discharge was seen coming out of os. But, ultrasonography revealed bilateral adenexal masses and pyometra. The serum CA-125 level in blood was raised. Cervical smear showed inflammatory changes, but endometrial histopathology was negative for malignant cells. Suspecting ovarian malignancy, laparotomy was done that revealed the bilateral tubal growth with normal ovaries; the right adenexal mass was of the size (6.8×4.8) cm while, the left adenexal mass was the size of (4.2×2.6) cm. Histopathology study revealed bilateral serous cyst adenocarcinoma of fallopian tubes. The case of bilateral primary fallopian tube carcinoma was presented here for its rarity.

1. Introduction

As it is known, primary fallopian tube carcinoma (PFTC) occurs in women aged 18 to 88 years; but it usually occurs between 4th and 6th decades of life, the median age being 55 years; it is a rare form of carcinoma accounting for 0.14% to 1.8% of the total gynecologic malignancies [1]. In another surveillance, the occurrence of PFTC was estimated at about 3.6 per million women[2]. Moreover, in 40% to 50% cases, nulliparity and lower parity have been known to have a greater risk for PFTC[3]. Further, ovarian endometrium, PFTC and breast cancer are known to occur in lower incidences in women with multiparity, which along with the use of oral contraceptives have been recorded as preventives of risk of any exasperating gynecologic carcinoma[2].

Overall, the survival percentage for PFTC is low, ranging from 20% to 50%, as its pre-operative diagnosis is cumbersome for its limited external clinical features to be abnormal and very few percentage of women (0-2%) suffering from PFTC are diagnosed pre-operatively[4]. But, PFTC has also been reported to occur with young girls[4]. Basically, PFTC is asymptomatic, but vaginal bleeding and discharge, as well as abdominal pain and the presence of abdominal mass are often reported[5]. Histologically and clinically, it resembles epithelial ovarian carcinoma (EOC). Oncologically, the following criteria are recognized for distinguishing PFTC from other gynecological malignancy: a), it could be the main tumor; b), the mucosa should be chiefly observed microscopically and tumors should have a papillary pattern; c), the wall of the tube must be involved extensively for a clear cut demonstration of a malignant tubal epithelium[4]. Nevertheless, transvaginal and transabdominal ultrasound are important imaging techniques for the possible malignancy. As it is, transvaginal sonography is more preferred for imaging fallopian tubes[6]. Along with ultrasound scanning, computed tomography and magnetic resonance imaging (MRI) are routinely used for

*Corresponding author: Dr. R. N. Padhy, CSIR Scientist, Central Research Laboratory, IMS & Sum Hospital, Siksha O Anusandhan University, K-8, Kalinga Nagar, Bhubaneswar 751003, Odisha, India.
Tel: +916742432034
E-mail: rnpadhy54@yahoo.com; sahudrmanisha@gmail.com

cases suspecting malignancy.

According to the International Federation of Gynecology and Obstetrics (FIGO), the WHO staging system for fallopian tube cancer consists of 0 to IV stages with 3 sub-stages (A, B and C) in stage I , stage II and stage III, detailed elsewhere[4]. A clear etiology of this non-common neoplasm being unavailable in literature, factor such as, hormonal imbalances is thought to have a stonking role in the development of PFTC[2]. Chronic pelvic inflammatory conditions are suggested to be one of the causes of its etiology[7]. In a study, it has been recorded that PFTC has a link to socio-economic status and occupation, as women of higher class with sedentary life-styles have a greater risk of PFTC, compared to those in the lower social classes, i.e., women working in farming, forestry, *etc*.[8]. Autonomous cell growth in cancer cells are mostly encouraged by 2 oncogenes, HER2/new and c-myc[9]. Those could have a major role in tumorogenesis. Additionally two mutagens, BRCA1 and BRCA2[10] and an over-expression of the tumor suppression gene, p53 gene also causes the expression of carcinoma[9]. Herein, a case of postmenopausal bilateral PFTC is presented.

2. Case report

A 60 years old multiparous woman, postmenopausal since 12 years, was hospitalized for watery discharge from vagina along with infrequent bleeding and pain at the lower abdomen, since 2 months. She was not a known case of diabetes, tuberculosis or hypertension and had no signs of anemia, jaundice or cyanosis. She was found having average body built and had weight 48 kg with the height 153 cm.

On examination, cervical smear was found to have inflammatory changes, but, cervical and inguinal lymph nodes were not palpable. There was no lump in either breast and the abdomen was soft without any palpable mass. However, an ultrasonography revealed a bulky uterus with cystic distention of endometrial cavity with floating debris, suggestive of pyometra. Further, bilateral adenexal masses were evident with the right mass of the size (6.8 × 4.8) cm and the left mass of the size (4.2×2.6) cm, with cystic and solid components, and their septation was evident. As observed, both the right and the left tubal masses had hydrosalpinx (Figure 1). Both ovaries were atrophied, but were looking normal and were not found separately from the respective adenexal mass without any ascites. The blood serum CA-125 level was 124.6 IU/mL (normal range, 0 to 30 IU/mL). Routine blood biochemistry included monitoring liver and renal functions that were within normal functional ranges. Serology results for the human immune-virus and HbsAg were negative. The uterine collection was drained under an antibiotic coverage, with a colour resembling the tobacco juice, followed by fractional curettage. A scanty endometrium was observed that revealed the absence of any malignant cell. Endocervical curetting had a few endocervical glands underlying normal stroma, as normal features.

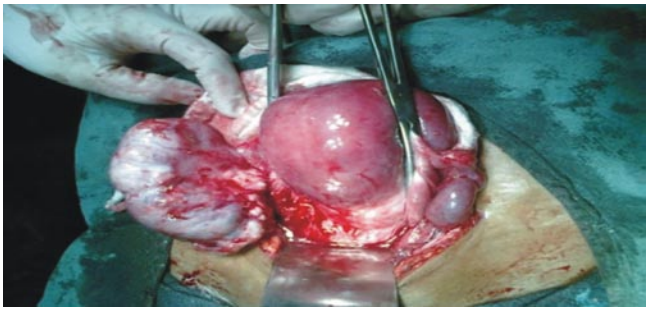


Figure 1. Bilaterial malignacy of fallopian tube

Considering the above history, examination findings and the raised serum CA-125 level, a provisional diagnosis of ovarian malignancy was suspected and a laparotomy was planned. Abdomen was opened through pffanensteil incision and the peritoneal wash was sent for cytological examination that had no malignant cells. The patient was subjected to the removal of the uterus and fallopian tubes were removed (Figure 2). Uterus was found to be of 10 weeks size and soft. Right side tubal mass of (8 × 5) cm was found and left tube was having hydrosalpinx. Both ovaries were atrophied but were looking normal and no enlargement of retroperitoneal lymph nodes was observed. Total abdominal hysterectomy, with bilateral salpingo oophorectomy, infracolic omentectomy and lymphnode, dissection was done, which revealed tubal growth mass on both sides (Figure 2), suggestive of malignancy. Cut section of uterus had no growth in uterine cavity and was smooth, but appeared thinning out. Two small intramural fibroids were found in fundus. Both ovaries were normal and there were no malignant deposits in omentum. Postoperative period was uneventful and she was discharged at the 8th post operative day.

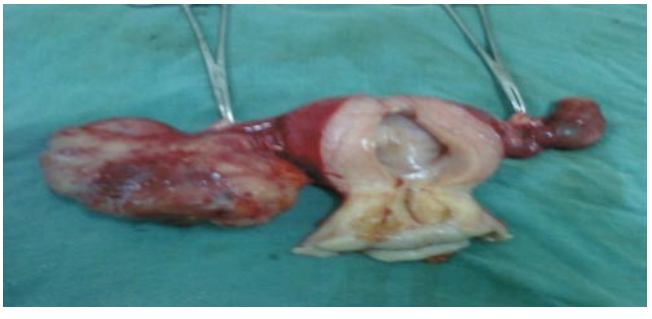


Figure 2. Specimen of uterus with bilaterial fallopian malignancy.

Histopathologic study of the tubal specimen revealed well differentiated serous cyst adenocarcinoma of one side fallopian tube and infiltrating moderately differentiated serous cyst adenocarcinoma of the other side of fallopian tube (Figure 3). Both ovaries were normal, as known from cytological preparations too. There was no malignant deposit in omentum. Myometrium was normal too. Cervix had features of chronic cervicitis and features of reactive hyperplacia in lymphnodes. Peritoneal wash cytology too indicated no malignant cells. Histopathology study confirmed that it was a case of bilateral PFTC at stage 1B, as both tubes were involved up to the stroma stage, with free serosal layer. There were no malignant deposits in other organs or lympnodes. Now, the patient is on adjuvant chemotherapy and routine follows-up.

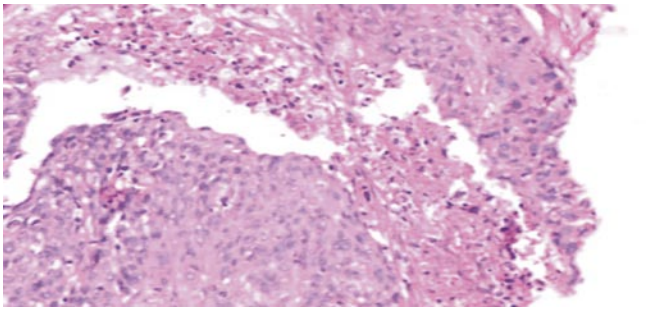


Figure 3. Histopathological study of bilaterial malignacy of fallopian tube (serouscyst adenocarcin).

3. Discussion

Most commonly, abnormal watery vaginal discharge in 50% patients may be associated with lower abdominal pain, distention and pressure symptoms; 10% of patients presented with hydro-tubal profluens (intermittent colicky abdominal pain associated with watery vaginal discharge) [11]. All these morbidities are not suggestive of a malignancy in the female reproductive unit. Moreover, the treatment of the total abdominal hysterectomy includes bilateral salpingo oophorectomy, infracolic omentectomy, washing of peritoneal cavity, sampling of pelvic and para-aotic lymphnodes, as well as, biopsy of any suspicious area including abdominal and pelvic peritoneum[12]. Normally, adjuvant chemotherapy is given prophylactically to patients after surgery with such patients. In addition, paclitaxel and platinum-based combined chemotherapy regimens are used for ovarian carcinoma with such patients.

These tumors are considered to arise by the relatively common mechanism of multifocal tumorogenesis of mullerian duct neoplasm. Histologically, this was confirmed as an adenocarcinoma. Tube walls were thin, facilitating a rapid invasion of the tumor inside and, its growth encroached the peritoneal cavity directly, by sprouting through the abdominal ostium. Mostly, abdominal ostium is closed, eventually a hydrosalpinx is present, as in this case. The tumor spreads by lymphatic to para-aotic and pelvic lymph nodes, by seedling and sometimes by venous embolism[13]. In general, bilateral tumor cannot be differentiated from secondary tumor metastasis to tube, as seen in 80% cases; most often ovarian and endometrial cancer is the primary lesion. However, to make a correct diagnosis of PFTC, the following pathological criteria should be fulfilled: (a) the tumor should arise from endosalpinx; (b) histological pattern should produce the epithelium of tubal mucosa; (c) the tubal wall if involved, a transition from benign to malignant proliferation should be identified (d) ovary and endometrium should either be normal or with a tumor smaller than that in the tube. Indeed, the exact etiology for PFTC is still unknown. Apart from infertility/ nulliparity, chronic salpingitis, a priory, is believed to lead to the increased incidences of PFTC. However, malignancy has been associated with tubercular salpingitis, most often.

In a multi-institutional study with Mexico, Romania and Japan, it had been reported that in majority of cases, carcinoma was located in fimbriated end that causes a worse prognosis than the carcinoma of the tubal portion. Further, tumor grade significantly co-related with survival, but histologically it was of marginal significance[14]. As the tumor was probably in the stage IB, the removal of fallopian tubes could squash the possibility of subsequent metastasis. Gynecological cancer are a group of malignancy of the female reproductive tract among which, the most common is cervical cancer, followed by ovarian cancer, vulval cancer, but fallopian cancer is a rare incident occurring mostly in the advanced stage[15]. In majority cases, cereous tumor originated from a dysplastic lesson in the distal fallopian tube[16]. Thus, ovarian cancer now is regarded as of tubal origin. In fact, it has been confirmed that in female reproduction, one side or a cell type gives a way to cancer developement, and rarely those are multifocal. Based on this fact, it is advised that complete bilateral salpingectomy is a risk reducing strategy for other reproductive development of carcinoma in patients, with the breast cancer gene[17].

Bilateral PFTC is usually first appreciated at the time of operation or by a pathologist. This disease remains as an enigma to pathologists and oncologists. This has resemblance to epithelial ovarian cancer in terms of age of presentation, association with low parity, frequent infertility

and genetic abnormality. Both types of carcinomas are often with serous papillary histology. PFTC is similar to EOC in surgical staging, its management and indications, for adjuvant chemotherapy. Both carcinomas have a poor prognosis with stage and residual tumor size and response to platinum-based chemotherapy. This is a case of rare bilateral PFTC and this could not be due to multifocality rather than metastasis, resulting from other areas[18, 19], as no tumor was found in the endometrium or any peritoneal spread and the patient has survived without any complaint of problems of other body parts. However, most PFTC cases have a history of another malignancy of a colon or a breast cancer[3, 20], and those were not evident in this case.

Nevertheless, the histopathologic diagnosis, as done here is evident of adenocarcinoma, as cells had larger nuclei. This could be regarded as high grade carcinoma because of the clarity at nuclear region. However, PFTC is less often diagnosed at an earlier stage, and the role of routine lymphadenectomy is well established prognosis and is mandatory in PFTC detection. More extensive clinical research must be performed in order to have definite, etiologic, diagnostic and prognostic markers for finalizing management modalities leading to carcinoma of the female reproductive system.

Conflict of interest statement

We declare that we have no conflict of interest.

Acknowledgement

IMS & Sum Hospital extended necessity facilities in an in-house project. MC Sahu is the Research Associate of the institute.

References

[1] Pectasides D, Pectasides E, Economopoulos T. Fallopian tube carcinoma. A review. *The Oncolog* 2006; **11**: 902-912.

[2] Riska A, Leminen A. Updating on primary fallopian tube carcinoma. *Acta Obstet Gynecol Scand* 2007; 86: 1419-1426.

[3] Riska A, Sund R, Pukkala E, Gissler M, Leminen A. Parity, tubal sterilization, hysterectomy and risk of primary fallopian tube carcinoma in Finland, 1975- 2004. *Int J Cancer* 2007; **120**: 1351-1354.

[4] Kalampokas E, Kalampokas T, Tourountous I. Primary fallopian tube carcinoma. *Europ J Obstetr Gynecol Reprod Biol* 2013 **169**(2): 155-161.

[5] Jan D, Philippe M, Paul C, Paul I. Ovarian borderline mucinous tumor in a premenarchal girl: Review on ovarian epithelial cancer in young girls. *Gynecol Oncol* 1992; **45**: 219-224.

[6] Timor-Tritsch IE, Rottem S. Transvaginal ultrasonographic study of the fallopian tube. *Obstet Gynecol* 1987; **70**: 424-428.

[7] Gunter J. Chronic pelvic pain: An integrated approach to diagnosis and treatment. *Obstetr Gynecol Surve* 2003; **58**: 615-623.

[8] Riska A, Leminen A, Pukkala E. Sociodemographic determinants of incidence of primary fallopian tube carcinoma, Finland 1953-97. *Int J Cancer* 2003; **104**: 643-645.

[9] Chung TK, Cheung TH, To KF, Wong YF. Overexpression of p53 and HER-2/neu and c-myc in primary fallopian tube carcinoma. *Gynecol Obstet Invest* 2000; **49**: 47-51.

[10]Jongsma AP, Piek JM, Zweemer RP. Molecular evidence for putative tumour suppressor genes on chromosome 13q specific to BRCA1 related ovarian and fallopian tube cancer. *Mol Pathol* 2002; **55**: 305-309.

[11]Amendoela BE, La Roure J, Amendola MA. Adenocarcinoma of the fallopian tube. *Surg Gynecol Obstet* 1983; **157**: 223.

[12]Markman M, Zaino R, Fleming P, Barakat R. Carcinoma of the fallopian tube. In: Williams J Hoskins(ed). *Principles and practice of gynecologic oncology*. New York: Lippincott Williams & Wilkins;1997; **35**: 1025.

[13]Muntz HG, Tarraza HM, Grani CO. Primary adenocarcinoma of fallopian tube. *Europ J Gynecol Oncol* 1989; **4**: 239.

[14]Jurgen MJP, Paul JVD, Ronald PZ, Jan WJ, Ria JJPK, Fred HM, et al. Dysplastic changes in prophylactically removed fallopian tubes of women predisposed to developing ovarian cancer. *J Pathol* 2001; **195**: 451-456.

[15]Ajithkumar TV, Minimole AL, John MM, Ashokkumar OS. Primary fallopian tube carcinoma. Obstetr Gynecol Surve 2005; 60: 247-252.

[16]Lin CK, Chang CC, Pan SH, Yu MH. Primary fallopian tube cancer may mimic endometrial malignancy. *Taiwan J Obstet Gynecol* 2008; **47**: 218-219.

[17]Erickson BK, Conner MG, Landen CN. The role of the fallopian tube in the origin of ovarian cancer. *Amer J Obstetr Gynecol* 2013; **4**: 1-6.

[18]Matias-Guiu X, Lagarda H, Catasus L. Clonality analysis in synchronous or metachronous tumors of the female genital tract. *Int J Gynecol Pathol* 2002; **21**: 205-211.

[19]Clayton NL, Jaaback KS, Hirschowitz L. Primary fallopian tube carcinoma. The experience of a UK cancer centre and a review of the literature. *J Obstet Gynaecol* 2005; **25**: 694-702.

[20]Gungor T, Keskin HL, Zergeroglu S. Tuberculous salpingitis in two of five primary fallopian tube carcinomas. *J Obstet Gynaecol* 2003; **23**: 193-195.