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Case Report

Preoperative Diagnosis of Primary Fallopian Tube Cancers: A Challenging Situation

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Abstract

Fallopian tubes have a low oncogenic potential, making primary fallopian tube cancers (PFTC) a rare entity. The prevailing histological type is serous adenocarcinomas (especially papillary serous).

They are often shadowed by ovarian cancers, and sometimes it's hard to tell the difference between the two entities. The diagnosis is chiefly made by ultrasounds eventually followed by MRI. The staging and management are identical to ovarian cancers.

We report the case of a giant PFTC mistook preoperatively for an ovarian cancer, diagnosed and treated at an early stage, with no sign of relapse after 15 months follow-up.

Keywords: *Fallopian Tube Cancer; Adenocarcinoma; Diagnosis; Treatment; Case Report*

Abbreviations

PFTC: Primary Fallopian Tube Carcinoma; FIGO: International Federation of Gynaecology and Obstetrics; WHO: World Health Organization; CT: Computed Tomography; BRCA: Breast Cancer Gene

Introduction

PFTC are rare and dominated by adenocarcinomas. They classically occur in a background of infertility and low parity, or in a genetic context, prompting a search for a deleterious BRCA1/2 chromosomal mutation, especially when they affect young women.

Preoperative diagnosis is rare [1] and can be quite confusing because PFTC are hardly distinguished from ovarian cancers or primary peritoneal serous carcinomas. Ultrasound and MRI help orienting the diagnosis, but confirmation and proper staging are usually obtained at laparotomy.

Ovarian, fallopian tube, and primary peritoneal carcinomas are all managed the same way, and they usually respond to surgery and chemotherapy [2]. Radiotherapy is abandoned because of its low efficiency [3,4]. When diagnosed and treated properly at an early stage, as in the case of our patient who was managed at stage I, the prognosis is quite favorable, and depends essentially on two significant factors: tumor infiltration in the tubal wall and intra-operative tumor rupture [5].

Case Presentation

43-year-old patient, mother of a healthy child, with no particular personal or family history. Complains of abdomino-pelvic overdistension, pelvic pain for 2 months and metrorrhagia. Clinical assessment revealed a solid abdominal-pelvic mass, lateralized to the right, reaching the umbilicus, separated from the uterus by a cleft.

Ultrasounds revealed a solid right adnexal mass, vascularized and measuring approximately 20 cm, with a normal-looking left ovary. the right ovary was difficult to visualize. Abdominal and pelvic CT scans identified a solid right adnexal mass measuring 180x110x90 mm, with no peritoneal carcinosis, no pelvic or lumbo-aortic adenopathies were detected, the liver and spleen were normal. CA 125 was elevated.

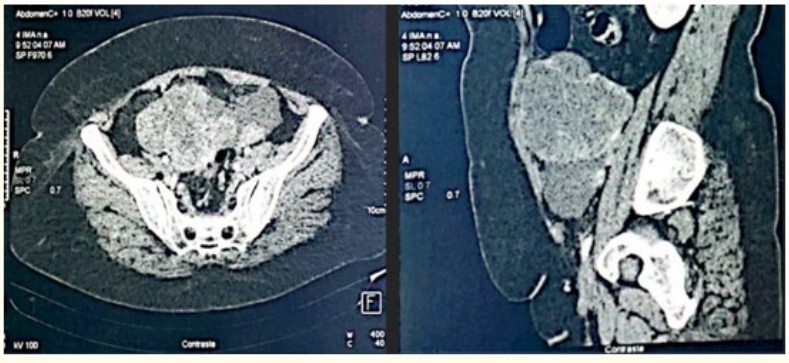

Figure 1: *CT scans identifying right adnexal heterogenous mass with contrast uptake.*

We took the mass for an ovarian cancer and proceeded with surgical exploration that found: a solid mass arising from the right fallopian tube, measuring approximately 20 cm, no signs of rupture. the uterus and both ovaries were clear of suspicious lesions.

After peritoneal cytology and multiple biopsies, we proceeded to a total hysterectomy, with bilateral adnexectomy, pelvic and lumbo-aortic lymphadenectomy, appendectomy and infra-gastric omentectomy. Pathological findings were consistent with a serous adenocarcinoma infiltrating the right fallopian tube without signs of extension to nearby or distant organs.

The patient received no adjuvant treatment, in 15 months of regular follow-up she showed no signs of relapse.

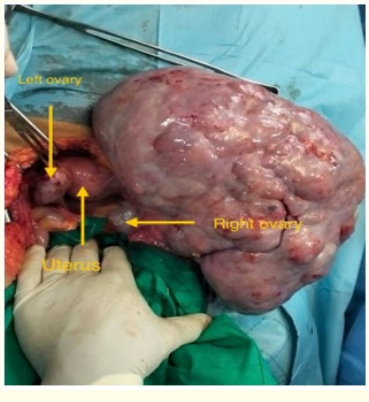

Figure 2: *Per-operative image showing a giant tumor arising from the right fallopian tube with normal uterus and ovaries.*

Discussion

Primary fallopian tube cancers (PFTC) are considered to be rare compared to those in the ovaries and uterus, they account for 0.3 - 1% of all gynecologic cancers [6]. This prevalence may be underestimated because they are often confused with locally advanced ovarian tumors.

PFTC affect usually middle-aged women, with an average of onset between 40 and 65 [7]. Their incidence is 14% lower in African-American women compared with Caucasians [8]. Women of higher social classes seem to be at greater risk compared with those in the lowest [9]. Several conditions have been reported as possible risk factors of PFTC: infertility and low parity [9], Chronic salpingitis [10], BRCA mutation (11% to 43% rates of BRCA mutations reported in series of patients with Fallopian tube carcinoma). While multiparity seems to be a protecting factor against PFTC [11].

It is important to distinguish primary fallopian tube cancers from secondary localizations of those arising elsewhere in the female genital tract. Clinical features are made of LATZKO triad, associating abdomino-pelvic pain, vaginal discharge (metrorrhagia, leucorrhea or hematorrhea) and a pelvic mass [12]. However, due to the rarity of this condition, despite the typical clinical signs, the diagnosis is seldom suggested preoperatively (less than 10% of cases) [13], and PFTC may be taken for an epithelial ovarian cancer or pelvic inflammatory disease. Therefore, FIGO and WHO suggested the following diagnostic criteria: the main tumor must be in the Fallopian tube and arises from endosalpinx, histological evidence for transition between benign and malignant tubal epithelium should be demonstrated, ovaries and uterus should be normal or contain less tumor than Fallopian tube [14].

When it comes to imaging, the first investigation to be carried out is pelvic ultrasound, which in early forms, will show a sausage-like appearance [15], suggestive of tubal origin, as well as the presence of a normal ovary next to the lesion [16]. In more advanced forms, the sonographic appearance is similar to that of epithelial ovarian carcinomas, in the form of a mixed solid and cystic mass independent of the uterus, with solid papillary projections that are hyper vascularized [17]. MRI is the gold standard for investigation of adnexal masses of undetermined nature, and is also used for staging. the typical appearance of a tubal carcinoma is manifested by a hyperintense T2-weighted signal and a hypointense T1-weighted signal with a solid appearance [18].

Finally, when a pelvic adnexal mass is discovered, an elevated CA125 is a diagnostic element in favor of a tubal or ovarian origin [19]. Preoperative CA125 levels are correlated with disease extension and stage [20].

The staging and the treatment of FPTC is similar to ovarian cancer [21]. For early stages, management is based on surgery including total hysterectomy with bilateral adnexectomy, omentectomy (at least infra colic), appendectomy, peritoneal biopsies and cytology, pelvic and lumbo-aortic lymphadenectomy [22]. In this case adjuvant chemotherapy based on the combination of carboplatin and paclitaxel is also recommended [23]. Standard initial treatment of advanced stages consists of cytoreductive surgery followed by combination platinum-based chemotherapy [11].

Five-year overall survival of tubal malignancies ranges from 44% to 56% according to the main series [5,13,21,24-26]. Prognosis depends mainly on FIGO stage, age and residual tumor after initial surgery [27].

Conclusion

PFTC are uncommon, and share many oncologic aspects with the ovaries, peritoneum and uterus. They generally manifest themselves at early stages due to the loud symptomatology which starts with tubal distension, making their prognosis better than ovarian cancers. The treatment is similar of ovarian cancers, combining optimal reduction surgery and cisplatin-paclitaxel-based chemotherapy.

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