



Uncertainties with Tuboovarian Masses – Primary Fallopian Tube Cancer in 2 Reproductive Aged Women

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BACKGROUND:

Primary Fallopian Tube Cancer is considered to be a rare gynecologic malignancy since its preoperative diagnosis is deemed to be challenging and no screening tool is available as of date to clinch its diagnosis. This paper aims to raise awareness on primary fallopian tube cancer; a rare neoplastic disease that can arise even in young patients diagnosed, as well as those with a strong familial history of breast and ovarian cancer.

Across published literatures, it has been established that of the leading cause for the development of the disease is genetics. It is linked to the mutation in BRCA 1 and BRCA 2 genes which is seen in patients with hereditary breast and ovarian cancer. Patients in a third-world country like the Philippines will have to shell out approximately 1000.00 U.S. dollars to be subjected to such testing and given given that BRCA gene testing is not covered by medical insurances genetic testing is considered to be a luxury. Knowledge of the disease is also lacking making high risk patients adamant to pursue immediate gynecologic consult unless with longstanding symptoms.

INTRODUCTION:

Primary fallopian tube carcinoma (PFTC) is considered to be a rare disease and is attributed to about 0.14-0.18% of all female genital malignancies. It is thought to originate from the malignant transformation of the salpingeal mucosa and is part of the epithelial type of ovarian cancers (EOCs). This is an umbrella term which includes ovarian, fallopian tube and primary peritoneal cancer. All three types have the same dissemination patterns, clinical behavior as well as chemosensitivity hence, PFTC is considered to be a very rare gynecologic malignancy since its true incidence could be underestimated as a result of having the same surgical or pathological features as the other types of EOCs:

Worldwide, epithelial ovarian cancers rank as the 8th most common cancer among women. GLOBOCAN data of 2020 revealed that there were 313, 959 new cases which represents 1.6% of all sites. Fallopian tube cancer is considered to be very rare and accounts to just 1 to 2% of all gynecologic malignancies

Non-specific signs and symptoms usually present in patients with PFTC. The symptom complex of *hydrops tubae profluens* or profuse vaginal discharge, a pelvic mass, as well as pelvic pain is considered to be pathognomonic to PFTC although rarely encountered. With the constellation of non-specific signs and symptoms coupled with the rarity of this disease, preoperative diagnosis is deemed to be challenging. These patients are rarely diagnosed by screening modalities such as a papanicolau smear, endometrial/endocervical curettage and ultrasonography.

CASE REPORT:

We present 2 cases of patients initially managed as cases of tuboovarian masses with histopathological findings of resected specimens revealing primary fallopian tube cancer in a tertiary institution in Metro Manila, Philippines.

The first case is a young female with a strong familial history for breast cancer (1 male and 1 female first degree relative); a 29-year-old G1P1 (1001) who initially sought consult due to a 6-month history of a palpable hypogastric mass associated with hypogastric pain severe dysmenorrhea as well as dyspareunia. A transvaginal ultrasound was requested which revealed a thick-walled structure on the left adnexa measuring 11 x 8.6 x 7.65cm with ground glass appearance with color flow mapping showing absent blood vessels. These findings were suggestive of a case of pelvic endometriosis with an endometrioma on the left. The procedure that was initially planned was for a left oophorocystectomy. Intraoperatively, there was no ascites and hemoperitoneum noted. The liver, diaphragm, and omentum were smooth. The left ovary was noted to be loosely adherent on the pelvic side wall and is converted to a 12 x 10 cm smooth thick-walled cystic mass. There were 3 endometriosis blebs measuring 2 x 2 cm on the uterosacral area. The uterus was small with a smooth serosa. Aside from the previously mentioned left endometriotic cyst, a suspicious looking paratubal cyst measuring approximately 4 x 2 cm on the right fallopian tube as well as a 6 x 6 cm as well as a cystic, smooth serosal bladder mass densely attached to the dome of the stretched urinary bladder were seen and excised (Figure 1).

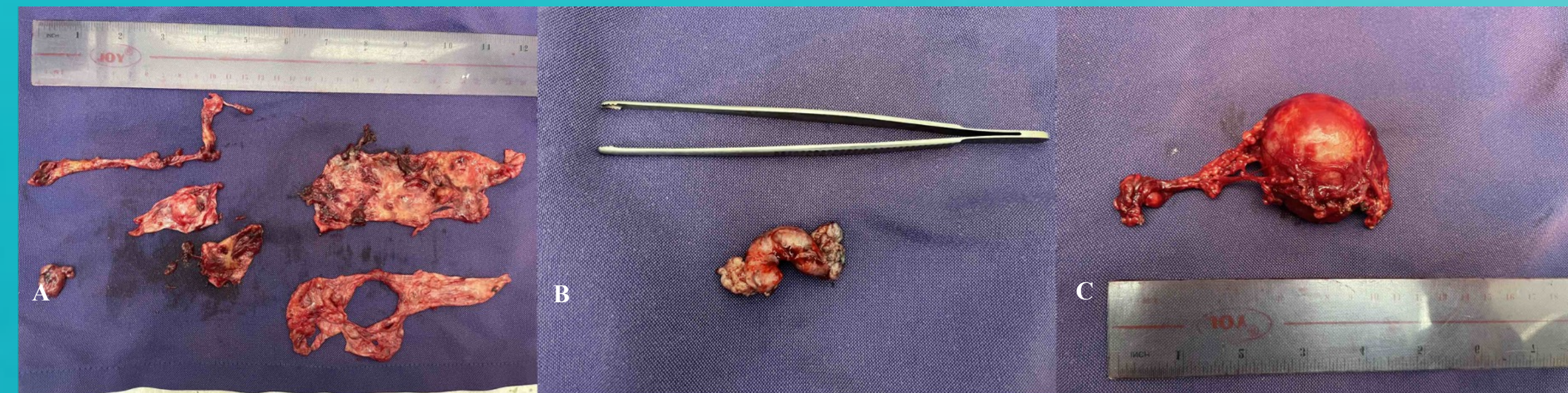


FIGURE 1 INTRAOPERATIVE FINDINGS: A – Left Ovarian Cyst well – Endometrioma, B - 4 x 2 cm cyst, right fallopian tube, Ampullary region, C – 6 x 6 cm cystic, smooth mass densely attached to the stretched urinary bladder

Specimens which included the left ovarian cyst wall, endometrial implants, right fallopian tube cyst and bladder mass were sent to the Pathology department for further evaluation. Initial consideration was a poorly differentiated malignancy favoring a high-grade serous carcinoma (HGSC) originating from the fallopian tube (Figure 2) with involvement of the left ovarian cyst wall, endometrial implants, right fallopian tube cyst, bladder wall and two lymph nodes from the bladder wall specimens.

Our second patient is a 40-year-old G1P1 (1001) who presented with a 1-year history of vaginal discharge described as serous and whitish in color copious in amount and non-foul smelling. This was not associated with fever, abdominal pain as well as genital pruritus. The patient did not complain of abdominal nor any palpable masses. An STD panel was requested but all yielded negative results. Transvaginal ultrasound was requested revealing tubulocystic structures, enveloping the right ovary measuring 9 x 3 x 7cm multiloculated mostly with areas

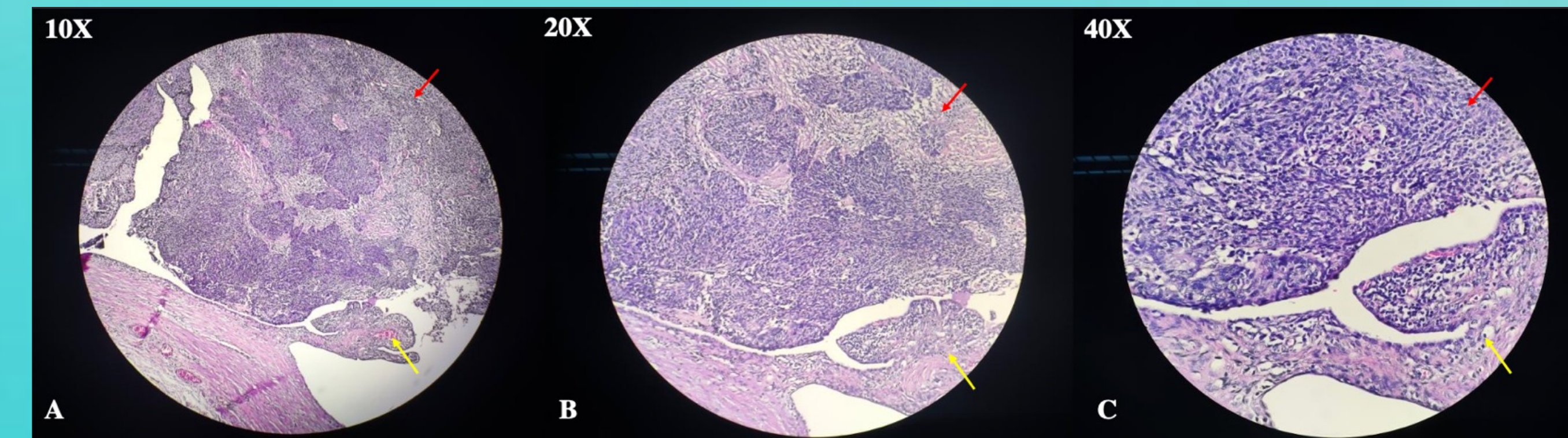


FIGURE 2 FALLOPIAN TUBE ON HEMATOXYLIN AND EOSIN STAIN: Fallopian Tube (Yellow arrow), Mass (Red Arrow); A, B, C – Microscopic sections of the specimen show a tumor composed of sheets of malignant cells. The tumor cells display atypia, tumor pleomorphism, prominent nucleoli, and brisk mitotic activity

of low and medium level echoes, probably inflammatory in nature. Inferior to the left ovary is another thick walled anechoic structure measuring 3 x 2 x 1 cm. She was then referred to the Infectious Disease service and was managed medically as a case of tuboovarian abscess with Ceftriaxone 500mg IM Single dose, Doxycycline 100mg tab BID for 14 days and Metronidazole 500mg tab BID for 14 days. A repeat TVS was done after 2 weeks of treatment with non-regression of the size of the adnexal masses.

Our primary impression at this time is a G1P1 (1001) Tuboovarian Abscess, resistant to antibiotic therapy, bilateral vs Pelvic Tuberculosis vs Ovarian Malignancy. The patient then underwent diagnostic laparoscopy and Intraoperatively, adhesions were noted between the right anterior abdominal wall and omentum. The right fallopian tube was cystically enlarged to approximately 8 x 8 cm. There is also a solid paratubal mass measuring 5 x 5 cm located at the left mesosalpinx. The right fallopian tube was cystically enlarged to 3 x 3 cm with a phimotic fimbrial end. Bilateral salpingectomy done and specimens submitted for frozen section revealed a high-grade serous carcinoma on the right fallopian tube and the premalignant lesion of fallopian tube cancer which is serous tubal intraepithelial carcinoma (STIC) was also appreciated. Official results revealed a papillary serous carcinoma on the right fallopian tube.



FIGURE 3 DIAGNOSTIC LAPAROSCOPY WITH BILATERAL SALPIGNECTOMY: A, B – Right Fallopian Tube cystically enlarged to approximately 8 x 8 cm which on accidental rupture exuded yellowish serous fluid; C - Left Fallopian tube appeared to be grossly normal

Our first patient underwent neoadjuvant chemotherapy of Carboplatin and Paclitaxel for a total of 6 cycles and is now scheduled for completion surgery. While our second patient has then undergone total abdominal hysterectomy with bilateral oophorectomy, peritoneal fluid cytology, bilateral lymph node dissection, random peritoneal biopsy and infracolic omentectomy .

RESULTS:

The symptom complex of *hydrops tubae profluens/ Latzko's Triad* or profuse vaginal discharge, a pelvic mass, as well as pelvic pain is considered to be pathognomonic to PFTC but is non-specific making preoperative diagnosis challenging.

In our first patient who had a strong familial history for breast cancer, she initially presented with a palpable hypogastric midline mass associated with intermittent colicky abdominal pain, initially attributed to progressive dysmenorrhea. Although the patient did not present clinically with vaginal discharge, on CT scan and MRI imaging, it was noted that the endometrial cavity and cervical canal was fluid filled. The first case has thereby satisfied all three criteria which comprises the Latzko's triad. In our second patient however, the only symptom was the presence of a serosanguinous vaginal discharge. The patient did not present with a palpable abdominal mass as well as abdominal pain and had no identifiable risk factor for epithelial ovarian cancers upon detailed history taking.

CONCLUSION:

Primary fallopian tube cancer is considered to be rare and difficult to treat. It has been postulated to have originated from a precursor STIC lesion that locally invades the tubal stroma or exfoliates into the surface of the ovary and peritoneum.. Although the incidence of PFTC is highest in the 60-64 years age group, the case study demonstrates the possibility of EOCs occurring in the younger age groups especially those with high genetic predisposition such as those with a strong family history of breast cancer.

Aside from the rarity of the disease, Fallopian Tube Cancer seems to mimic a myriad of benign gynecologic conditions make pre-operative diagnosis challenging and almost impossible given that the aforementioned triad also includes very non-specific symptoms. The case demonstrates fallopian tube cancer mimicking

Given that fallopian tube cancer can arise in younger patients especially those with a high predisposition to hereditary breast and ovarian cancer A high index of suspicion then in patients presenting with benign conditions is imperative especially when there is strong familial history. It has been agreed upon that genetics and hereditary factors play a major role in the development of the disease. Inherited deleterious mutations in BRCA1 and BRCA2 are major risk factors however in third world countries such as the Philippines where BRCA testing is deemed to be expensive, a clinician must rely heavily on proper and detailed history taking so that such cancers may be included in differential diagnoses and may be properly worked up prior to planned procedures.