

## A case report of tubal high grade serous carcinoma, which was diagnosed incidentally after appendectomy

### *Apendektomi sonrası tesadüfen teşhis edilen tubal yüksek dereceli seröz karsinom olgu sunumu*

Pelin Höbek, Mehmet Anıl Onan

Posted date:11.01.2023

Acceptance date:22.05.2023

#### Abstract

Primary tubal carcinoma is an uncommon tumor of female genital system. The clinical approach of primary tubal cancers is similar to primary ovarian cancers. Fallopian tube carcinoma is hard to diagnosed preoperatively because of its indistinct symptoms. Optimal cytoreductive surgery is the most important treatment step in ovarian, tubal and peritoneal carcinomas.

We report a case of serous tubal intraepithelial carcinoma with appendix metastasis. A 65 years old postmenopausal woman (gravida 4, para 3) submitted to an external hospital with lower abdominal pain and acute abdominal symptoms. Appendectomy was performed on the patient with preliminary diagnosis of appendicitis. The pathology result was reported as high grade serous carcinoma infiltration. Staging surgery was performed with the diagnosis of carcinoma. Until the final pathology result, the diagnosis was considered as appendiceal metastasis of serous tubal cancer. Our clinical and surgical approach to the case, which was diagnosed incidentally with an appendectomy specimen and reported as high grade tubal serous carcinoma, is presented as a case study.

**Key words:** Adnexal diseases, appendiceal neoplasms, neoplasm metastasis.

Hobek P, Onan MA. A case report of tubal high grade serous carcinoma, which was diagnosed incidentally after appendectomy. Pam Med J 2023;16:510-514.

#### Öz

Tubanın primer karsinomları kadın genital sisteminde nadir görülen tümörlerdir ve klinik olarak primer over karsinomlarına benzerler. Belirsiz semptomları nedeniyle sıklıkla ileri evrede tanı alırlar ve preoperatif tanı koymak zordur. En önemli tedavi basamağı optimal sitoreduksiyonun sağlanmasıdır.

Bu olgu sunumunda apendektomi sonrası tesadüfen saptanan high grade seröz tubal karsinom olarak raporlanan olguya yönelik klinik ve cerrahi yaklaşımımızdan bahsedilmektedir. 65 yaşında postmenopozal hasta (gravida 4, parite 3) akut karın semptomları ile başka bir merkeze başvurdu. Apendisit ön tanısı ile hastaya apendektomi yapıldı ve apendektomi spesmeninin nihai patoloji sonucu seröz karsinom infiltrasyonu olarak raporlandı. Hastaya seröz karsinom endikasyonu ile evreleme cerrahisi yapıldı. Apendektomi materyali ile tesadüfen saptanan ve high grade tubal seröz karsinom olarak bildirilen olguya klinik ve cerrahi yaklaşımımız vaka çalışması olarak sunulmaktadır.

**Anahtar kelimeler:** Ovaryum ve tubauterina hastalıkları, apendiks neoplazileri, tümör metastazi.

Höbek P, Onan MA. Apendektomi sonrası tesadüfen teşhis edilen tubal yüksek dereceli seröz karsinom olgu sunumu. Pam Tıp Derg 2023;16:510-514.

#### Introduction

Metastatic lesions to the appendix are exceptionally uncommon. Metastatic lesions may present acute appendicitis, remain asymptomatic or are diagnosed incidentally [1]. Appendix metastases often originate from gastrointestinal tract [2].

Primary tubal carcinoma is an uncommon tumor of the female genital system that has a clinical behavior like ovarian cancer [3]. Tumors in the tubes are usually metastatic rather than primary. Metastatic tumors of the ovary, endometrium, gastrointestinal tract and breast should be excluded. Therefore, metastases from these regions should be excluded for a definitive diagnosis.

Pelin Höbek, M.D. Gazi University Faculty of Medicine, Department of Obstetrics and Gynecology, Ankara, Türkiye, e-mail: pelin\_hbk@hotmail.com (<https://orcid.org/0000-0001-7089-8686>) (Corresponding Author)

Mehmet Anıl Onan, Prof. Gazi University Faculty of Medicine, Department of Obstetrics and Gynecology, Ankara, Türkiye, e-mail: maonan@gazi.edu.tr (<https://orcid.org/0000-0001-7643-1585>)

The most common age of occurrence is between 50 and 65 years, and the mean age is 55 years. Fallopian tube carcinoma is hard to diagnose preoperatively because of its indistinct symptoms [4]. Clinical symptoms are lower abdominal or pelvic pain, abdominal swelling and pelvic mass. It is often diagnosed intraoperative or after histopathological examinations [5].

Histopathology is the gold standard method for diagnosing primary fallopian tubal carcinoma. High grade serous carcinoma is the most common histopathologic type. High grade ovarian serous carcinoma originate from the tubal epithelium and involves mutations in TP53 [6, 7].

PAX8 is a significant histological marker for most of the epithelial ovarian cancers, as it is expressed in about 90% of malignant ovarian carcinomas, specifically in high grade serous carcinoma. PAX8 is needed for the normal development of Müllerian duct that includes Fallopian tube, uterus, cervix, and upper part of vagina [8]. PAX8 positivity in appendectomy specimen suggested that primary carcinoma originated from ovary or tuba.

The treatment of primary tubal carcinoma is primary debulking or interval debulking surgery after neoadjuvant chemotherapy. Primary tumor and metastases should be removed by explorative laparotomy and staging surgery should be performed. Postoperative adjuvant chemotherapy should be given as the combination of carboplatin and paclitaxel [9].

Stage of the disease affects survival. The five-year survival rate is less than 50%. If the disease is caught in early stages, survival can be as high as 92%. Unfortunately, because of its nonspecific symptoms and lack of early sign, the 5-year survival rate is less than 30%. The stage of tumor at the time of diagnosis is the most important factor determining the prognosis. Other important prognostic factors include the residual volume of the tumor after cytoreduction and the histologic grade of the tumor [10]. Complete resection of all tumor cells has been shown to significantly improve outcome and overall survival [11].

## Case presentation

A 65 years old post-menopausal woman (gravida4,para3) submitted to an external hospital with lower abdominal pain and acute abdominal symptoms. She had three spontaneous vaginal deliveries and last menstrual date was 15 years ago. For her medical history, she has been using antihypertensive medication for ten years. Abdominal ultrasonography and pelvic tomography were performed and the patient was diagnosed as acute appendicitis. Appendectomy was performed with preliminary diagnosis of apendicitis. The pathology result was reported as high grade serous carcinoma infiltration. In the immunohistochemical study PAX8 and P53 were highly positive while WT-1 was detected negative. The patient was referred to us with the preliminary diagnosis of appendiceal metastasis of serous ovarian cancer.

Normal sized uterus and mobile cervix were observed on pelvic examination. No obvious adnexial mass was observed. Free ascites was not seen in the abdomen. In laboratory examinations performed in our clinic, hemogram, complete urinalysis and routine biochemistry tests were unremarkable. The Ca 125 level was 197.8 U/ml (normal up to 35 U/ml), the Ca 19-9 levels was normal. There was no pleural effusion in the preoperative thorax tomography.

Staging surgery was performed with the diagnosis of ovarian carcinoma. In the expolaration, uterus, left ovary and tuba were observed as normal (Picture 1, 2). Millitary tumoral implants were observed on the right ovary, tuba and other intra-abdominal organs and peritoneum. Abdominal washing fluid was sent to intraoperative pathology and it was reported as malignant fluid cytology in papiller pattern. The patient underwent staging surgery including total abdominal hysterectomy, bilateral salpingo-oophorectomy, omentectomy with adhesiolysis and retroperitoneal lymph node dissection. The bilateral ovarian masses, fallopian tubes, uterus, omentum, lymph nodes and sample of peritoneal washing were sent for histopathological analysis. A tumoral lesion of approximately 1 cm diameter was observed in the fimbrial section of the right tube. Until

the final pathology result, the diagnosis was considered as appendiceal metastasis of serous tubal cancer. It was determined that the cancer originated from right tube and no tumor focus was observed in the parenchyma of both ovaries. There was high grade serous carcinoma in the left paratubal soft tissues and left tubal lumen. The absence of involvement in the ovarian parenchyma suggests tubal cancer. Lymphovascular invasion was present and high grade serous carcinoma invasion was observed in the uterine serosa. High grade serous carcinoma infiltration was reported in the omentectomy and lymph node materials.

No tumoral implant was present in the liver and spleen capsule.

No complication developed in the postoperative period. Following discharge, the patient underwent medical oncology consultation for adjuvant chemotherapy. A regimen of carboplatin and paclitaxel was initiated, and six rounds of chemotherapy were administered. Control Ca125 value detected as 12.1. No pathological 18F-FDG uptake was observed in the control PET-CT examination taken 3 months after the operation.



**Picture 1.** Specimen, left ovary and tuba



**Picture 2.** Specimen, right ovary and tuba

## Discussion

Preoperative diagnosis of primary fallopian tube cancer is rare. In many cases similar to our patient, the disease is asymptomatic and the diagnosis is made postoperatively in woman who had surgery for abdominal pathology [12]. In our patient tubal carcinoma was found to be incidental, consistent with the literature.

Tubal carcinomas are often metastatic rather than primary tumors. Most common metastases arise from primary ovarian carcinomas. It is often difficult to distinguish between tubal cancer and epithelial ovarian cancers because of their similar histologies. In this distinction, it is important that the tubal mucosa is involved and papillary is seen. If both the tuba and ovary are involved, the absence of tumor in the ovarian parenchyma is a finding in favor of tubal cancer. In our case report, ovarian cancer is excluded because there is no tumor in the parenchyma of the ovaries and tumoral infiltration is observed in the bilateral tubal mucosa.

Primary appendix tumors are exceptionally uncommon and carcinomas of the appendix often originate from metastases. Metastatic lesions may present with acute appendicitis, remain asymptomatic or are diagnosed incidentally [13]. In our case metastatic lesions presented as acute appendicitis. Because the patient exhibited acute appendicitis symptoms, an appendectomy was conducted, and serous carcinoma metastases was found.

Diagnosis is confirmed histopathologically, but intraoperative diagnosis is difficult due to rare tumors. Intraoperative diagnosis is thought to be misdiagnosed in approximately 27% of cases [14]. Since our patient had a preoperative diagnosis, full staging surgery was performed. In preoperatively or intraoperatively confirmed cases, cytoreductive surgery is the appropriate treatment opinion [15].

It is often diagnosed in advanced stage due to preoperative diagnostic difficulties, and detected incidentally in high stages. The patient with appendix involvement and carcinoma infiltration in the omentum and lymph nodes was diagnosed as FIGO stage 3C in the staging surgery.

Adjuvant chemotherapy plays an important role in the management of primer tubal carcinoma, usually with platinum-based combination chemotherapy [16]. A combination of carboplatin paclitaxel chemotherapy was started postoperatively and the patient received 6 cycles of chemotherapy regimen.

**Conflict of interest:** No conflict of interest was declared by the authors.

## References

1. Alhadid D, AlShammari A, Almana H, Aburahmah M. Missed gastric cancer metastasis to the appendix. *Am J Case Rep* 2020;21:e920010. <https://doi.org/10.12659/ajcr.920010>
2. Leonards LM, Pahwa A, Patel MK, Petersen J, Nguyen MJ, Jude CM. Neoplasms of the appendix: pictorial review with clinical and pathologic correlation. *RadioGraphics* 2017;37:1059-1083. <https://doi.org/10.1148/rg.2017160150>
3. Stasenکو M, Fillipova O, Tew WP. Fallopian tube carcinoma. *J Oncol Pract* 2019;15:375-383. <https://doi.org/10.1200/jop.18.00662>
4. Gomes FV, Dias JL, Lucas R, Cunha TM. Primary fallopian tube carcinoma: review of MR imaging findings. *Insights Imaging* 2015;6:431-439. <https://doi.org/10.1007/s13244-015-0416-y>
5. Berek JS, Renz M, Kehoe S, Kumar L, Friedlander M. Cancer of the ovary, fallopian tube, and peritoneum: 2021 update. *Int J Gynecol Obstet* 2021;155:61-85. <https://doi.org/10.1002/ijgo.13878>
6. Howitt BE, Hanamornroongruang S, Lin DI, et al. Evidence for a dualistic model of high-grade serous carcinoma: BRCA mutation status, histology, and tubal intraepithelial carcinoma. *Am J Surg Pathol* 2015;39:287-293. <https://doi.org/10.1097/pas.0000000000000369>
7. Quartuccio SM, Karthikeyan S, Eddie SL, et al. Mutant p53 expression in fallopian tube epithelium drives cell migration. *Int J Cancer* 2015;137:1528-1538. <https://doi.org/10.1002/ijc.29528>
8. Adler E, Mhawech Fauceglia P, Gayther SA, Lawrenson K. PAX8 expression in ovarian surface epithelial cells. *Hum Pathol* 2015;46:948-956. <https://doi.org/10.1016/j.humpath.2015.03.017>
9. Timmermans M, Sonke GS, Van de Vijver KK, van der Aa MA, Kruitwagen RFP. No improvement in long-term survival for epithelial ovarian cancer patients: a population-based study between 1989 and 2014 in the Netherlands. *Eur J Cancer* 2018;88:31-37. <https://doi.org/10.1016/j.ejca.2017.10.030>

10. Hariprasad P, Hariprasad S, Srinivas T, Shetty KJJ. Primary bilateral fallopian tube carcinoma the report of a single case with review of the literature. *J Clin Diagn Res* 2013;7:930-932. <https://doi.org/10.7860/jcdr/2013/5483.2980>
11. Ataseven B, Grimm C, Harter P, et al. Prognostic impact of debulking surgery and residual tumor in patients with epithelial ovarian cancer FIGO stage IV. *Gynecol Oncol* 2016;140:215-220. <https://doi.org/10.1016/j.ygyno.2015.12.007>
12. Rai S, Maheshwari A. Management of fallopian tube cancer. *Rev Recent Clin Trials* 2015;10:276-281. <https://doi.org/10.2174/1574887110666150923112556>
13. Yoon WJ, Yoon YB, Kim YJ, Ryu JK, Kim YT. Secondary appendiceal tumors: a review of 139 cases. *Gut Liver* 2010;4:351-356. <https://doi.org/10.5009/gnl.2010.4.3.351>
14. Koo YJ, Im KS, Kwon YS, et al. Primary fallopian tube carcinoma: a clinicopathological analysis of a rare entity. *Int J Clin Oncol* 2011;16:45-49. <https://doi.org/10.1007/s10147-010-0128-8>
15. Sun M, Bao L, Shen H, et al. Unexpected primary fallopian tube carcinoma during gynecological operations: clinicopathological and prognostic factors analyses of 67 cases. *Taiwan J Obstet Gynecol* 2019;58:626-632. <https://doi.org/10.1016/j.tjog.2019.07.008>
16. Bao L, Ding Y, Cai Q, et al. Primary fallopian tube carcinoma: a single-institution experience of 101 cases: a retrospective study. *Int J Gynecol Cancer* 2016;26:424-430. <https://doi.org/10.1097/igc.0000000000000648>

**Informed consent:** Written informed consent was obtained from the patient.

#### **Authors' contributions to the article**

P.H. and M.A.O. have constructed the main idea and hypothesis of the study. They developed the theory and arranged/edited the material and method section, have done the evaluation of the data in the Results section. Discussion section of the article written by P.H. reviewed, corrected and approved. In addition, all authors discussed the entire study and approved the final version.