TÜRK JİNEKOLOJİK ONKOLOJİ DERGİSİ
2024, VOL. 24 NO. 2, 96-100
https://doi.org.10.59215/trsgo.1479414

CASE REPORT/OLGU SUNUMU

Adenomatoid tumor of the fallopian tube: a case report

Fallop tüpünün adenomatoid tümörü: bir olgu sunumu

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ABSTRACT

Adenomatoid Tumors (AT) were first described by Pacheco et al. in 1945. These benign tumors are uncommon in the male and female genital systems and can be challenging to identify preoperatively due to their radiological resemblance to leiomyomas. As a result, they are often diagnosed through histopathological examination of hysterectomy and/or salpingo-oophorectomy specimens. When smooth muscle is particularly prominent, these tumors may also be referred to as leiomyoadenomatoid tumors (LMAT). Despite their characteristic soft cytomorphology and histology, adenomatoid tumors can be mistaken for lymphangiomas or adenocarcinomas.

Herein, we present a case of an adenomatoid tumor of the fallopian tube, identified incidentally, showcasing the typical nuclear features of the tumor.

Keywords: Adenomatoid Tumors, Leiomyoma, Leiomyoadenomatoid Tumors

ÖZET

Adenomatoid tümörler (AT), ilk olarak 1945 yılında Pacheco ve ekibi tarafından tanımlanmıştır. Kadın ve erkek genital sistemlerinde nadir rastlanan bu tümörler genellikle iyi huyludur. Radyolojik görüntüleme yöntemleriyle leiomyomlara benzeyen bu tümörlerin preoperatif tanısı zordur; bu nedenle çoğunlukla histerektomi ve/veya salpingooferektomi örneklerinin histopatolojik incelemesi sonucunda teşhis edilirler. Düz kas dokusunun belirgin olduğu vakalarda, bu tümörler leiomyoadenomatoid tümörler (LMAT) olarak da adlandırılabilir. Adenomatoid tümörler, tipik olarak yumuşak sitomorfoloji ve histolojik özellikler gösterir; ancak lenfanjiom ve adenokarsinom ile karışabilirler.

Bu çalışmada, tipik nükleer özellikleriyle tesadüfen tanı koyduğumuz bir fallop tüpü adenomatoid tümör olgusu sunulmaktadır.

Anahtar Kelimeler: Adenomatoid Tümör, Leiomyom, Leiomyoadenomatoid Tümörler

ARTICLE HISTORY
Received 06.05.2024
Accepted 26.08.2024

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Cite This Article: Lafcı D, Sancaklı Usta C, Turan G. Adenomatoid tumor of the fallopian tube: a case report. Türk Jinekolojik Onkoloji Dergisi 2024;24(2):96-100.

Journal Website: https://dergipark.org.tr/en/pub/trsgo **Publisher:** Cetus Publishing

INTRODUCTION

Adenomatoid tumors (AT) were first reported by Pacheco et al. in 1945 (1). Immunohistochemical findings showed that adenomatoid tumors are of mesothelial origin. These tumors, which are rarely seen in the female and male genital system, show benign characteristics. In the gynecological system, they are most commonly seen in the uterus and fallopian tubes. These tumors, which resemble leiomyomas radiologically, are difficult to recognize preoperatively; therefore, they are often diagnosed by histopathological examination of hysterectomy and/or salpingo-oophorectomy materials (2–4).

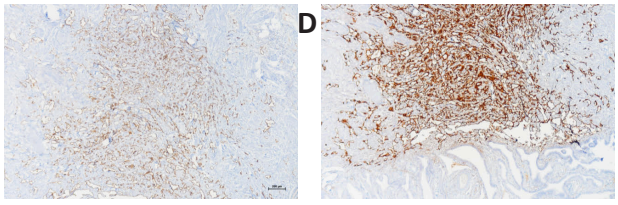
These pink-yellow colored tumors, which are indistinctly circumscribed solids in macroscopy and soft in some cases, are frequently confused with leiomyomas (2). On microscopy, there are gland-like, tubular, cystic branch-like structures between smooth muscle bundles (5). When the smooth muscle is extremely prominent, these tumors may also be called leiomyoadenomatoid tumors (LMAT) (5). Although adenomatoid tumors have distinctive soft cytomorphology and histological features, they can sometimes be mistaken for lymphangiomas or adenocarcinomas. Features such as the prominence of smooth muscle, nuclear atypia, multinucleation or mitosis may suggest malignancy (5,6).

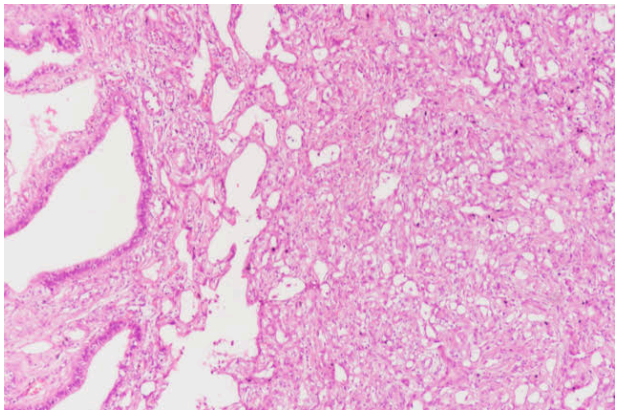
Here, we present a case of an adenomatoid tumor of the fallopian tube with typical nuclear features, which was diagnosed incidentally.

CASE REPORT

A 52-year-old female patient (gravida 4, parity 4) was referred from an external center for evaluation of endometrial wall thickness and uterine myoma. She had experienced abnormal bleeding for approximately 5 years without improvement. Transvaginal ultrasonography revealed an adenomyotic uterus measuring 15 cm x 12 cm x 8 cm and a 4 cm submucous myoma on the anterior uterine wall. No adnexal masses were observed. Due to the increased endometrial thickness, a probe curettage was performed, and the pathology report indicated a secretory endometrium. The patient declined medical treatment, leading to a laparoscopic hysterectomy with bilateral salpingo-oophorectomy (TLH-BSO). The surgical specimens were subsequently sent to our pathology laboratory for histopathological analysis.

Pathological analysis identified endometrial polyps and leiomyoma nodules in the endometrial cavity, corpus, cervix, and ovaries, with no additional abnormalities detected. Immunohistochemical staining of the right fallopian tube showed positivity for calretinin and HBME-1 (Figures 1-3). The tumor measured 0.3 x 0.2 cm, and the final pathological diagnosis was an adenomatoid tumor of the right fallopian tube. The patient was subsequently followed up.





DISCUSSION

Adenomatoid tumors are rare, benign tumors of the genital tract, commonly occurring in women of reproductive age. In the female genital system, they are most frequently found in the fallopian tubes and near the uterine cornua (2,7). It is challenging to distinguish adenomatoid tumors from leiomyomas through clinical examination, ultrasonography, or magnetic resonance imaging. They are typically diagnosed incidentally during histopathological examination. Previously believed to be of endothelial origin, recent immunohistochemical studies have confirmed that these tumors are actually of mesothelial origin (8). In a study investigating the incidence of adenomatoid tumors, 1,000 hysterectomy specimens were examined, revealing adenomatoid tumors in twelve specimens (1.2%) (11). They are typically smaller than 4 cm in size (9).

Histologically, adenomatoid tumors exhibit various patterns, including adenomatoid patterns with interconnected gland-like structures, angiomatoid patterns with flattened cells, solid patterns that may resemble stony ring cells, and cystic and papillary patterns that can be mistaken for lymphangiomas. Inflammation is present in some cases, while others show a prominent smooth muscle component. Additionally, tumors with areas of necrosis can sometimes be confused with malignancy (5,10).

Distinguishing between these tumors necessitates evaluating both benign and malignant conditions. In the fallopian tube, prevalent benign lesions include lymphangiomas and salpingitis isthmica nodosa. Lymphangiomas may resemble the cystic formations of adenomatoid tumors but are differentiated by their positive staining for D2-40 and absence of calretinin expression. Conversely, salpingitis isthmica nodosa is characterized by the extension of fallopian tube epithelium into the smooth muscle wall, mirroring the glandular pattern observed in adenomatoid tumors. However, the glands in salpingitis isthmica nodosa are composed of tubal-type epithelium and lack mesothelial marker expression (11,12).

Malignant lesions in this differential diagnosis include well-differentiated liposarcoma, metastatic adenocarcinoma, and malignant mesothelioma. Metastatic adenocarcinomas often present as multifocal lesions with an infiltrative growth pattern accompanied by stromal desmoplasia. Malignant mesothelioma is characterized by its invasive growth, pronounced nuclear pleomorphism, and elevated mitotic activity. This malignancy typically shows positivity for HMBE1, and the detection of BAP1 gene deletion is a significant diagnostic tool for confirming mesothelioma (11,13,14).

Adenomatoid tumor cells typically show minimal or no nuclear atypia or mitotic activity. These cells strongly stain for cytokeratin, vimentin, HBME-1 (anti-human mesothelioma antibody), and calretinin, but are negative for epithelial membrane antigen and carcinoembryonic antigen. Ber-EP4 negativity aids in excluding adenocarcinoma. The presence of calretinin and HBME-1 supports the mesothelial origin of adenomatoid tumors (2,15–17).

Immunohistochemical staining is crucial for the definitive diagnosis of adenomatoid tumors, which can be macroscopically mistaken for leiomyomas and histologically confused with lymphangiomas and adenocarcinomas. In our

case, diagnosed through histopathological examination, immunohistochemical staining showed positive results for calretinin and HBME-1, consistent with the literature.

CONCLUSION

Adenomatoid tumors are rare, benign tumors of mesothelial origin. Due to their similarity to leiomyomas, they are often diagnosed incidentally during surgery. Surgical removal is the recommended treatment.

ACKNOWLEDGEMENTS

Conflict of Interest

On behalf of all authors, I, as the corresponding author, accept and declare that; we have NO affiliations with or involvement in any organization or entity with any financial interest or non-financial interest in the subject matter or materials discussed in this manuscript.

Support Resources

No financial support was used by authors during this study.

Ethical Declaration

Helsinki Declaration rules were followed to conduct this study.

Authorship Contributions

Concept: DL, Design: CSU, Supervising: CSU, Financing and equipment:.. Data collection and entry: DL, CSU, GT, Analysis and interpretation: GT Literature search: DL, Writing: DL, Critical review: CSU

This case was presented at the 5th Congress of Controversial Issues in Gynecology and Obstetrics on 5-8 October 2023.

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