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PARAOVARIAN AND MESOTHELIAL CYSTS FOLLOWING CERVICAL MESONEPHRIC ADENOCARCINOMA: A CASE REPORT

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Abstract

We present a complex case of a 42-year-old woman with a history of radical abdominal hysterectomy for mesonephric adenocarcinoma of the cervix, nephrectomy for renal dysfunction, and prior breast tumor excision, who underwent elective surgery for symptomatic pelvic cystic lesions. Diagnostic imaging and elevated ROMA score indicated potential neoplastic etiology. Exploratory laparotomy revealed paraovarian and mesothelial cysts, with dense pelvic adhesions. Histopathology confirmed benign cystic lesions. This case highlights the importance of multidisciplinary evaluation and tailored surgical intervention in patients with complex oncologic and surgical histories.

Key words:Mesonephric adenocarcinoma, paraovarian cyst, mesothelial cyst, adhesions, radical hysterectomy, exploratory laparotomy

Introduction

Mesonephric adenocarcinoma (MA) is an exceedingly rare subtype of cervical adenocarcinoma, accounting for fewer than 1% of all cervical malignancies.(1) It is thought to originate from persistent mesonephric (Wolffian) duct remnants located in the lateral walls of the cervix, although it has also been reported in other mesonephric duct derivative sites such as the vagina, uterine corpus, and broad ligament. (2)(3) The tumor is most often diagnosed in perimenopausal and postmenopausal women and is not associated with human papillomavirus (HPV) infection. (3)

Despite their often low-grade histologic appearance, mesonephric adenocarcinomas tend to behave aggressively, with a notable risk of recurrence and distant metastasis, particularly to the lungs and lymph nodes. (3) Reported recurrence rates range from 30–40%, often within 2–5 years after initial treatment. (1)

In this report, we describe a patient with well-differentiated mesonephric adenocarcinoma of the cervix treated with radical surgery and adjuvant chemoradiotherapy, who later developed benign cystic lesions requiring surgical management. This case illustrates the complex, long-term sequelae of rare gynecologic cancers and underscores the need for vigilant follow-up and a multidisciplinary approach to late surgical complications.

Case presentation

A 42-year-old female with a complex oncologic and surgical history was referred for elective surgical management of newly identified pelvic cystic lesions. Her medical history showed mesonephric adenocarcinoma of the uterine cervix in 2013, initially presenting with painless, prolonged metrorrhagia.

Cervical curettage revealed well-differentiated clear cell adenocarcinoma with features suggestive of mesonephric origin. Pelvic MRI identified a well-circumscribed 1 cm lesion located in the upper cervix without evidence of stromal invasion or lymphadenopathy. Intravenous urography showed unremarkable findings with normal ureteral patency and no post-void residuals.

The patient underwent a total abdominal radical hysterectomy without adnexectomy (Wertheim-Meigs procedure). Histopathology confirmed an invasive, well-differentiated mesonephric

adenocarcinoma with nuclear grade 1. Immunohistochemical profiling showed strong CD10 positivity, and negativity for CEA, vimentin, chromogranin, synaptophysin, EMA, calretinin, inhibin, CD56, CK7, and CD99. Estrogen and progesterone receptors showed weak focal nuclear staining (ER±, PgR±), and the Ki-67 index was 10%. She subsequently received adjuvant chemoradiotherapy.

In 2015, the patient underwent a left nephrectomy due to non-functional kidney secondary to chronic interstitial nephritis. Two years later, in 2017, she had a right breast lumpectomy following a diagnosis of a benign mammary cyst with prominent apocrine metaplasia.

In 2021, transabdominal ultrasound identified two adjacent left adnexal cystic formations: a unilocular, thin-walled, anechoic cyst measuring 42 × 34 mm, and a second, multilocular cyst with thin septations measuring 60 × 32 mm. These findings were confirmed by abdominopelvic computed tomography. Serum tumor markers were as follows: CA-125: 22.36 U/mL, HE4: 82.39 pmol/L, CEA: 5.0 ng/mL, CA 19-9: 7.13 U/mL, and CA 72-4: 1.41 U/mL. The calculated ROMA score was 21%, suggesting moderate risk.

Three weeks prior to admission, the patient experienced a spontaneously resolving episode of subacute intestinal obstruction. Based on her surgical history, imaging, and tumor marker profile, a decision was made for operative intervention.

Intraoperative findings revealed dense adhesions between the greater omentum and the pelvic floor, likely related to previous hysterectomy and radiotherapy. Partial omentectomy was performed. A unilocular paraovarian cyst was carefully dissected along with the left adnexa. A separate cystic lesion located at the pelvic floor was also identified and completely enucleated. The right ureter was identified and preserved, and right adnexectomy was performed.

Histopathologic analysis showed:

- Paraovarian cyst: Lined with cylindrical to attenuated cuboidal epithelium over a vascularized fibrous wall without atypia.
- Pelvic cyst: Lined with flat to cuboidal mesothelial cells exhibiting focal hyperplasia and areas of squamous metaplasia. No evidence of malignancy was found.

The postoperative course was uneventful. Peristalsis resumed on the second postoperative day, and the patient was discharged in good general condition with stable renal function and no signs of recurrence. Follow-up with her primary oncologic surgeon was planned.

Discussion

Although MA is generally considered a low-grade tumor histologically, it can behave aggressively and require prolonged surveillance due to a relatively high risk of locoregional recurrence and distant metastases, especially to the lungs and lymph nodes. (3) Our patient, treated over a decade ago with radical surgery and adjuvant chemoradiotherapy, remains without evidence of disease recurrence, which is a favorable outcome given the tumor's potential clinical behavior.

The incidental development of paraovarian and mesothelial cystic structures in this context raises important diagnostic and therapeutic considerations. While both cyst types are typically benign, the background of gynecologic malignancy and an elevated ROMA score necessitated a cautious approach.

Paraovarian cysts are relatively common benign and asymptomatic adnexal lesions, thought to originate from the paramesonephric or mesonephric remnants near the ovary or fallopian tube. (4) However, large cysts can occasionally lead to pressure symptoms or torsion.

The mesothelial cyst identified in the pelvic floor was a more unusual finding. These cysts are believed to arise from invaginations of the peritoneal mesothelium and are rarely symptomatic. (5) Histologically, they are lined by a single layer of flattened to cuboidal mesothelial cells, sometimes with hyperplastic or metaplastic changes, as seen in our case. The presence of focal squamous metaplasia, although benign, required exclusion of more sinister pathology. Importantly, no cytologic atypia or invasive features were noted.

Pelvic adhesions are a well-recognized long-term complication of radiotherapy and surgical trauma. (6) They may contribute to chronic pelvic pain, bowel dysfunction, and—as in this case—diagnostic ambiguity. The episode of subacute intestinal obstruction that preceded admission was likely related to such adhesions. Intraoperatively, dense adhesions between the omentum and pelvic floor confirmed this suspicion.

This case also illustrates the importance of a multidisciplinary approach and histopathologic analysis in managing patients with complex oncologic and surgical backgrounds. Radiologic evaluation, tumor marker interpretation (7), and surgical planning were all performed in close collaboration among gynecologic oncologists, radiologists, and general surgeons.

In summary, the development of benign cystic adnexal lesions in a previously irradiated and surgically altered pelvis presents a diagnostic dilemma. While the majority of such lesions may be non-neoplastic, their management must be individualized, particularly in patients with prior gynecologic malignancy. Surgical exploration and histologic confirmation remain essential when imaging and biochemical findings are inconclusive or raise concern.

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