

Case Report

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Pneumatosis-Like (Cystoid) Pattern in Ovarian Mature Teratoma: A Rare Histopathological Presentation in a 40-Year-Old Woman

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ABSTRACT

Mature cystic teratoma is the most common ovarian germ-cell tumor, typically showing a combination of ectodermal, mesodermal, and endodermal tissues. A rare morphological variant, recently described in the literature, is the pneumatosis-like or cystoid pattern, characterized by numerous microcystic spaces imparting a spongy appearance.

Case: We report the case of a 40-year-old woman presenting with pelvic pain and a sensation of heaviness. Pelvic ultrasonography revealed a well-circumscribed adnexal mass measuring 55 × 42 mm, suggestive of a mature teratoma. Gross examination confirmed a spongy lesion containing multiple microcystic cavities. Microscopic evaluation demonstrated microcystic spaces lined by attenuated epithelium within mature teratomatous components, corresponding to the pneumatosis-like variant.

Conclusion: This case highlights a rare morphological presentation of mature teratoma. Recognizing this unusual variant is essential to avoid confusion with cystic neoplasms or artifacts.

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Introduction

Mature cystic teratomas are benign germ-cell tumors accounting for up to 20% of ovarian neoplasms. Histologically, they comprise well-differentiated mature tissues derived from the three germ layers. Various morphological patterns have been described, yet the pneumatosis-like or cystoid variant remains exceptionally rare.

This distinctive pattern is formed by numerous microcystic structures imparting a spongy or sieve-like appearance, potentially leading to diagnostic dilemmas. Here, we present a new case illustrating this rare variant and discuss its diagnostic relevance [1].

Case Presentation

A 40-year-old woman presented with intermittent pelvic pain and a persistent sensation of pelvic heaviness. Clinical examination was unremarkable.

Pelvic ultrasonography identified a 55 × 42 mm well-defined adnexal mass, with heterogenous internal echoes, suggesting a mature cystic teratoma. No additional radiological images were available.

Pathological Findings

Macroscopic Examination

The mass was well-circumscribed and partially cystic, exhibiting a spongy and microcystic cut surface. Numerous small, variably sized cystic spaces imparted a pneumatosis-like architecture.

No areas of necrosis or overtly malignant features were identified.

Microscopic Examination

Microscopic sections (×25) revealed multiple small cystic structures distributed within mature teratomatous tissue.

These microcavities were lined by attenuated epithelial layers and embedded within a background of well-differentiated ectodermal and mesodermal components, consistent with a mature cystic teratoma.

No immature or malignant elements were observed.

Discussion

The pneumatosis-like (or cystoid) variant of ovarian mature teratoma is exceptionally rare and only sporadically described in recent literature.

The microcystic appearance may resemble lymphangioma-like structures, cystic degeneration, or processing artifacts, making careful interpretation essential.

The pathogenesis remains unclear, but proposed mechanisms include:

- Cystic Dilation of Epithelial Structures
- Degenerative Microcavitation
- Entrapment of Small Keratinous Vesicles

- Recognizing this Variant Avoids Misinterpretation as:
- Immature Teratoma
- Mucinous Cystic Neoplasm
- Lymphangioma
- Artifact from Tissue Processing

Our case reinforces that, despite the unusual appearance, the lesion retains the diagnostic criteria of a benign mature teratoma, with no immature or malignant components.

Conclusion

We report a rare case of a mature ovarian teratoma exhibiting a pneumatosis-like (cystoid) pattern in a 40-year-old woman.

Awareness of this distinctive morphology helps pathologists avoid overdiagnosis and ensures accurate classification of these common yet sometimes deceptively variable lesions.

Figure Legends

Figure 1: Macroscopic View Showing a well-Circumscribed Ovarian Mass with a Spongy cut Surface Composed of Numerous small Microcystic Spaces.



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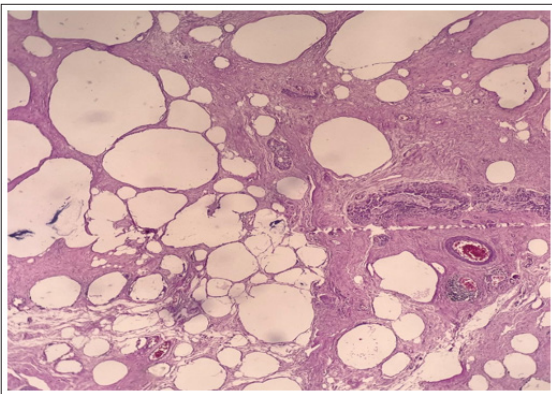


Figure 2: Higher-Magnification Microscopic Image (×25) Demonstrating Multiple Uniform Microcystic Cavities Dispersed Within Mature Teratomatous Tissue

References

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