Case 396

3. Cystadenoma > 1.Dermoid cyst

【Progress】

As we do not have a gynecologist every day, she was introduced to the hospital where a gynecologist serve her all day.

【Discussion】

The human body part in embryonic terms emerges from exoderm, mesoderm and endoderm. Epidermis with skin appendages and nerves come from ectoderm, dermis, muscles, bones and fat tissues come from mesoderm, and gastrointestinal ducts, respiratory system and digestive organs come from mesoderm.

Skin is composed of epidermis, dermis and skin appendages. Epidermal cysts come from epidermis and dermoid cysts, from dermis, implying that epidermoid cysts include only ectodermal components, while dermoid cysts include ectodermal and mesodermal components. Teratoma includes components of two or more derms. Then, both of dermoid cysts and teratomas include ectodermal and mesodermal components. The differences between them are whether dermoid cysts contain only skin components and teratoma contain not only skin components but also extracutaneous components.

Epidermoid cysts are congenital while epidermal cysts are acquired. However, they are histologically identical. Epidermal cyst occurs after the occlusion of hair pores. Both include keratin. Dermoid cysts include keratin, sebum (triglycerides, sweat, cholesterol), and sweat, inducing formation of emulsion (1-3). Dermoid cysts are present at birth and gradually grow as aging with hormone secretion. Dermoid cyst comes in 50% of ovary tumors in childhood and 20% in adults (1, 4). When it contains calcification or thick fat tissues, it is called cystic teratoma rather than dermoid cyst.

Dermoid cysts are sometimes found with coincidence of other ovarian tumors such as cystic adenoma, called collision tumors. As dermoid cysts grow, they increase the incidence of occurring torsion with edematous swollen mural, inducing sudden abdominal pain. Further, cystic teratoma transforms malignant changes such as adenocarcinoma or squamous cell carcinoma (1, 5-7). Furthermore, as it grows, it can traumatically or naturally rupture. Chronic rupture of ovarian cysts is visualized such as omental dissemination on abdomen CT (1, 9).

In our fifteen-year-old female, echography showed a cystic lesion at right ovary, suspicious of dermoid cyst by gynecologists. Abdomen CT showed an ovarian cyst with small solid component but no evidence of fat tissue. Further, CT nine years before, which was taken for suspicious appendicitis, showed absence of ovarian cyst, indicating that the cyst is acquired. Then, it finally diagnosed ovarian cystadenoma rather than dermoid cyst.

【Summary】

We presented a fifteen-year-old female for fever and headache. Abdomen MRI showed a ovary cyst with a solid component which had been absent nine years before on CT. It is borne in mind that dermoid cyst includes of epidermis (ectoderm origin) component and dermis (mesodermal origin) component, indicating that cyst contents include emulsion of keratin, sebum (triglycerides, cholesterol), and sweat. Dermoid cyst contains two derms (ectoderm and mesoderm) Cystic teratoma contains two derms or more such as calcification (not included in skin). Dermoid cyst can occur associated with other tumors called collision tumors. Torsion, malignant transformation , and rupture can arise from dermoid cyst.

【References】

1. Smirniotopoulos JG, et al. Teratomas, dermoids, and epidermoids of the head and neck. Radiographics 1995; 15 (6): 1437-55.
2. Shibata T, et al. Magnetic resonance imaging features of epidermoid cyst in the extremities. Arch. Orthop. Trauma Surg. (123) (2003), pp. 239-241
3. Hoang VT, et al. Overview of epidermoid cyst. Eur J Radiol Open. 2019; 6: 291–301
4. Rha SE, et al. Atypical CT and MRI Manifestations of Mature Ovarian Cystic Teratomas AJR Am J Roentgenol . 2004 Sep;183(3):743-50
5. Cong L, et al. Mature Cystic Teratoma: An Integrated Review. Int J Mol Sci. 2023 Apr; 24(7): 6141.Published online 2023 Mar 24. doi: 10.3390/ijms24076141
6. Ruchi Rathore et al. Malignant transformation in mature cystic teratoma of the ovary: a retrospective study of eight cases and review of literature. Prz Menopauzalny. 2018 Jun; 17(2): 63–68
7. Griffiths D, et al. Malignant degeneration of a mature cystic teratoma five decades after discovery. Gynecol Oncol. 1995;59:427–429.
8. Kawaguchi M, et al. MRI findings of malignant transformation arising from mature cystic teratoma of the ovary: comparison with benign mature cystic teratoma. Jpn J Radiol. 2023 Dec 26.
9. Fibus T. Intraperitoneal Rupture of a Benign Cystic Ovarian Teratoma: Findings at CT and MR Imaging.

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