Rhabdomyoblasts in an Ovarian Cystic Teratoma

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Abstract: Children with cystadenomatoid malformation of lungs may contain rhabdomyoblasts while occasionally adult lungs may contain rhabdomyoblasts. On the other hand rhabdomyosarcoma have been reported in cystic teratoma of the lung. However benign rhabdomyoblasts are not reported in the benign cystic teratoma. We report such a case here.

Keywords: Ovarian cystic teratoma, Rhabdomyosarcoma. Rhabdomyoblasts, Cystadenomatoid malformation of the lungs

Introduction
Teratomas are germ cell tumors that contain elements derived from one or more of the 3 germ cell layers. Teratomas range from benign, well-differentiated (mature) cystic lesions to those that are solid and malignant (immature). They can be found in ovariies, testes, mediastinum; (27% of all teratomas in adult and 4-13% of all teratomas in children), intracranial and sacrococcygeal region. Mature cystic teratomas (dermoid cysts) constitute majority of ovarian germ cell tumors representing 20% of all ovarian neoplasms. As a result they may contain a large variety of tissue types including hair, teeth, adipose tissue, skin, muscle, and endocrine glands. Occasionally teratomas may have immature elements thus changing its category to malignant teratoma. On the other hand some component of mature teratoma such as squamous epithelium may undergo malignant transformation e.g. Squamous cell carcinoma. Malignant transformation occurs in 1%-2% of mature cystic-teratomas with a poor prognosis even with aggressive treatment. The mechanism seems to be related to the long-term presence of non-rectected tissue of mature cystic teratoma. We present a case of a young lady with ovarian cyst. On histopathological examination, rhabdomyoblasts were seen in some sections.

Case Presentations
We received a specimen of a right ovarian cyst of a 30 year old female. The patient was contacted twice but showed reluctance to give detailed history.

Gross Examination
A 8x5x4 cm right ovarian cyst that was filled with thick viscid fluid. There were 1.5 x 0.5 cm moderately firm solid areas. Multiple representative sections were submitted for microscopic examination.

Microscopic Examination
The cyst contained benign mesenchymal and pulmonary tissue composed of lung acini, respiratory epithelium and smooth muscle cells (Figure 1&2) At places, scattered rhabdomyoblasts were seen within alveolar spaces. These rhabdomyoblasts had eccentric nuclei and abundant eosinophilic cytoplasm. At times these assumed tadpole and strap shapes. (Figure1) No atypia was noted in these rhabdomyoblasts. The surrounding pulmonary mesenchyme contained benign smooth cells. These rhabdomyoblasts were positive for desmin and myogenin. (Figure 3)

Discussion
Rhabdomyoblasts are immature progenitor skeletal muscle cells. They may give rise to benign rhabdomyoma which is a rare cardiac tumor and also may give rise to more common rhabdomyosarcoma seen in both children and adults containing atypical rhabdomyoblasts. Rhabdomyoblasts can also occasionally be seen in lung tissue of normal adults and in association with cystadenomatoid malformation of lung in children; these are considered to derive from skeletal muscles of diaphragm or

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esophagus. Rhabdomyoblasts with some atypia are seen in embryonal, alveolar, and pleomorphic rhabdomyosarcomas. Lung tissue both in adult and children as described above occasionally may contain benign rhabdomyoblasts and these are not taken as malignant. However in our case these cells were seen in ovarian cystic teratoma which has not been reported before to the best of our knowledge. On contrary rhabdomyosarcoma had been previously reported in ovarian teratomatous lesions. Our case highlights the importance of presence of benign rhabdomyoblasts in association with lung tissue, and not rendering diagnosis of rhabdomyosarcoma merely on the basis of presence of rhabdomyoblasts.

References


### HISTORY

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