

Image section – Pathology Corner - Answers

Diagnosis: Mature cystic teratoma of the mediastinum.

The specimen shows a cyst containing white translucent cartilage (white arrow) and a larger yellowish fatty nodule. Microscopy shows cartilage (1) and keratin (2) filled cyst lined by stratified squamous epithelium (3).

Discussion:

Common tumors of the mediastinum include thymomas, germ cell tumors and nerve sheath tumors.

Teratomas are the commonest germ cell tumors, having a predilection for the midline (retroperitoneum, base of skull, pineal gland etc.) Their most common sites are the gonads, especially ovary. Rarely it can occur in the lung, kidney and liver as well. Pathologically these tumours are classified as mature, immature, monodermal (specialized) and teratomas with malignant transformation. These occur as cystic masses with variable amount of solid tissues. The better differentiated tumours will have tissues like cartilage, teeth, hair etc. recognizable by naked eye examination itself. The immaturity can be assessed only by microscopy in which more of undifferentiated tissues will be seen, most commonly neuroepithelium. The more the immature tissues in the tumour, the more malignant it will be. So, mature teratomas will be slow growing and may remain asymptomatic in more accommodative locations. Monodermal teratomas are rare, containing predominantly one type of tissue like thyroid (Struma) which can function like the normal thyroid and can even develop toxicity and neoplasms of thyroid.

Microscopically, teratomas contain tissues derived from all the three germ layers since they arise from totipotent germ cells. The picture shows, keratinizing squamous epithelium of ectodermal and cartilage of mesodermal origin. However, other areas of the tumor contained neuroglia, adipose tissue, respiratory epithelium etc.

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