

The 74th annual meeting of the Japan Radiological Society

Case 6: Answer

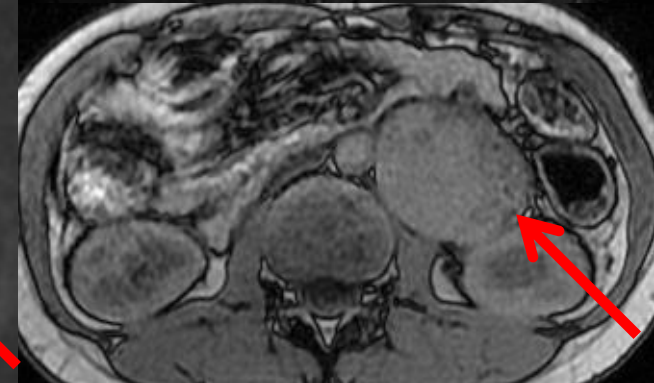
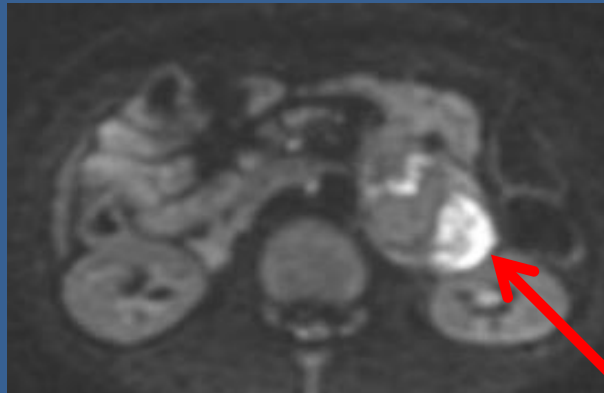
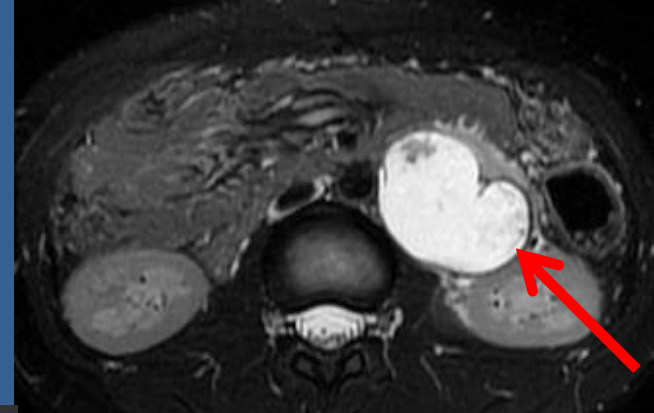
from Teikyo University Hospital, Mizonokuchi

Clinical Summary

- A 27-year old woman with recurrent left flank pain
- Retroperitoneal mass found 2 years ago
- Past history: unremarkable
- Family history: unremarkable
- L/D (1st hospital visit)
WBC 6740 / μ l, RBC 385×10^4 / μ l, CRP 4.96 mg/dL↑

CT & MRI at the 1st visit

- Left retroperitoneal cystic mass
- Oligolocular
- Relatively thick uniform wall/septa
- Hemorrhage (+)
- No obvious fat component
- s/o floating substance with restricted diffusion (arrow)



2nd visit (2 years later)

- The mass increased in size with the appearance of enhancing solid component (papillary projections).



DDx: malignant retroperitoneal lesion with cystic component

- **Retroperitoneal Mullerian adenocarcinoma**
- **Teratoma with malignant transformation**
- **Extrapancreatic solid pseudopapillary tumor**
- **Degenerative paraganglioma**
- **Degenerative retroperitoneal sarcoma**

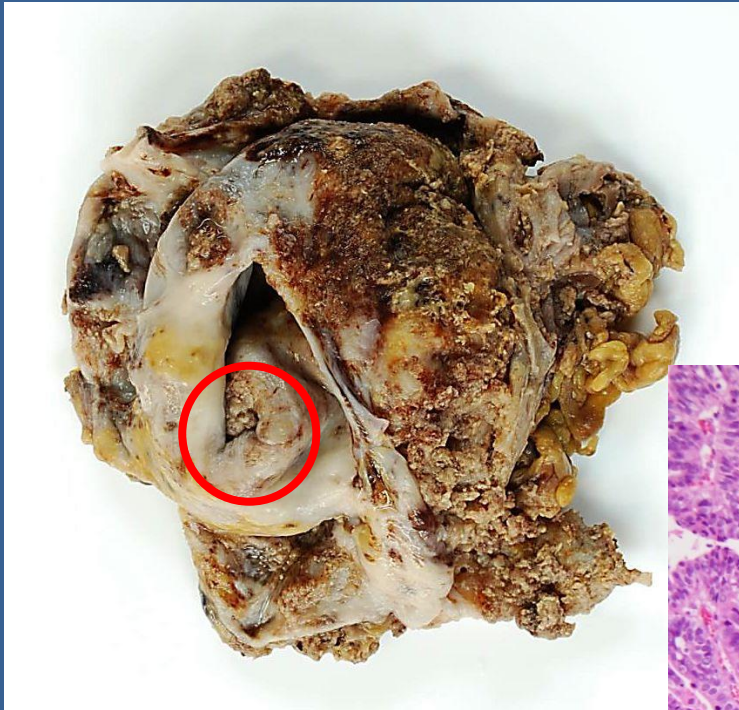


Floating substances are the key finding of this lesion.

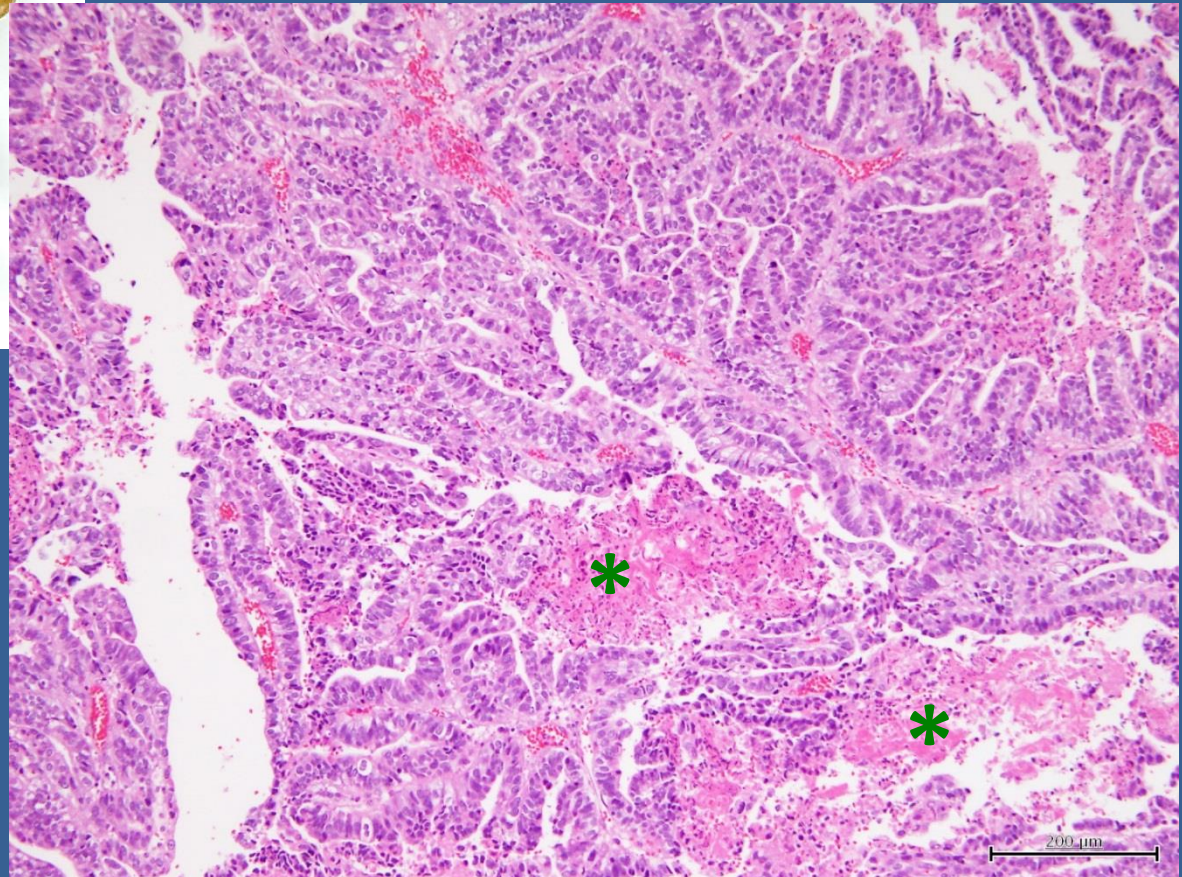


s/o keratin balls & debris

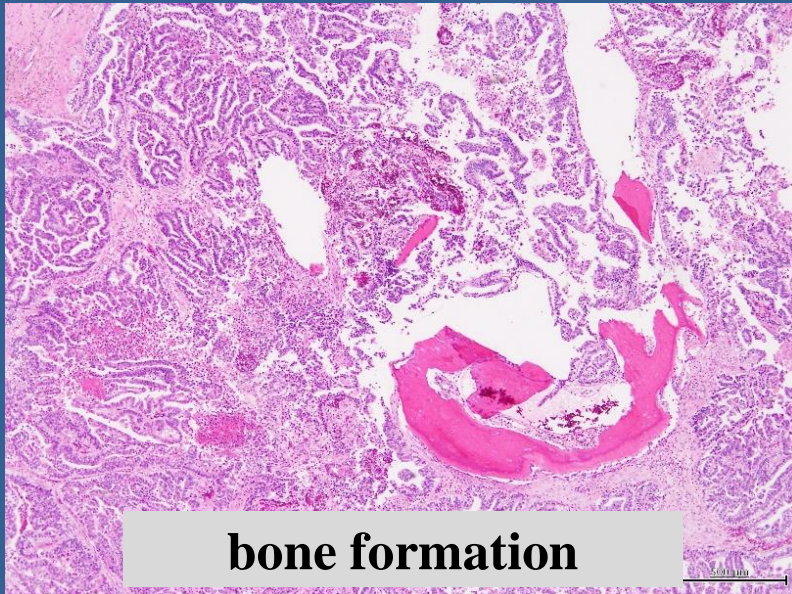
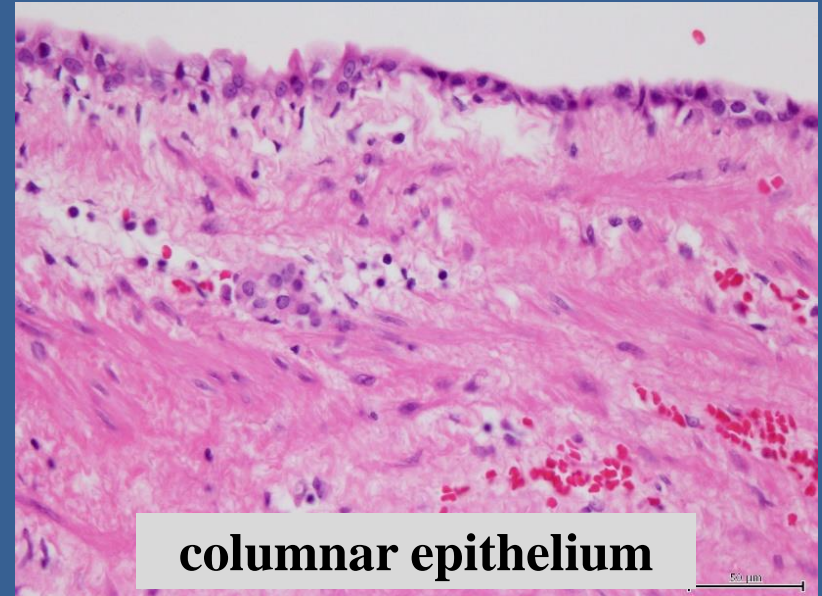
Pathology



Papillary tumors with hemorrhagic necrosis(*), consistent with adenocarcinoma. Negative for immunohistochemical staining of estrogen and progesterone receptors.



Pathology



Final Diagnosis

**Retroperitoneal teratoma with
malignant transformation
(adenocarcinoma)**

Retroperitoneal teratoma

- 6-11% of primary retroperitoneal tumors.
- Calcification 83%, Fat 61% (CT).
- Malignant transformation of extra-gonadal teratoma is rare (<20 reported cases in the retroperitoneum).
- Literature review suggest malignant transformation may occur in youth (3rd – 5th decades of life).
- The prevalence of adenocarcinoma is unknown. In the mediastinum, Paliwal et al. suggested adenocarcinoma is likely to be the most frequent type of malignant transformation, in contrast to ovary where squamous cell carcinoma is the most frequent.

Wang, et al. Eur Radiol 2002; 12:1546-9

Davidson AJ, et al. Radiology. 1989; 172(2):421-5.

Kim, et al. J Gynecol Oncol 2009; 20:126-8

Paliwal, et al. Indian J Chest Dis Allied Sci. 2013; 55:39-41

Take Home Points

- **Teratoma should be considered even when no obvious fat or calcifications are identified, especially for tumors located near the midline with cystic components.**

fat, bone ← mesoderm derived

tooth, keratin balls, Rokitansky nodules
← mainly ectoderm derived

fluid formation ← endoderm derived

- **Although rare, malignant transformation of teratoma can occur in young adults.**

- **When you see a cystic lesion, analysis of both cystic and solid components is very important.**

References

1. Wang LJ, Chu SH, Ng KF, et al: Adenocarcinomas arising from primary retroperitoneal mature teratomas: CT and MR imaging. *Eur Radiol.* 2002;12(6):1546-9.
2. Davidson AJ, Hartman DS, Goldman SM: Mature teratoma of the retroperitoneum: radiologic, pathologic, and clinical correlation. *Radiology.* 1989;172(2):421-5.
3. Kim JH, Lee TS, Oh HK, et al: A case of mucinous adenocarcinoma arising from retroperitoneal teratoma treated with chemoradiation. *J Gynecol Oncol.* 2009;20(2):126-8.
4. Paliwal N, Gupta K, Dewan RK, et al: Adenocarcinoma (somatic-type malignancy) in mature teratoma of anterior mediastinum. *Indian J Chest Dis Allied Sci.* 2013;55(1):39-41.
5. Ghosal SR, Das S, Maji A, et al: Adenocarcinoma in retroperitoneal teratoma. *Indian J Surg.* 2013;75(Suppl 1):33-5.