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The 25th Annual Congress of the ADIAP
The 5th International Conference of JSP

Clinical History

- A 25-year-old male presented with history of right-sided scrotal swelling for two months.

- It was a right -sided painless swelling which had been progressively increasing in size.

Cont. History

- Tumor markers:

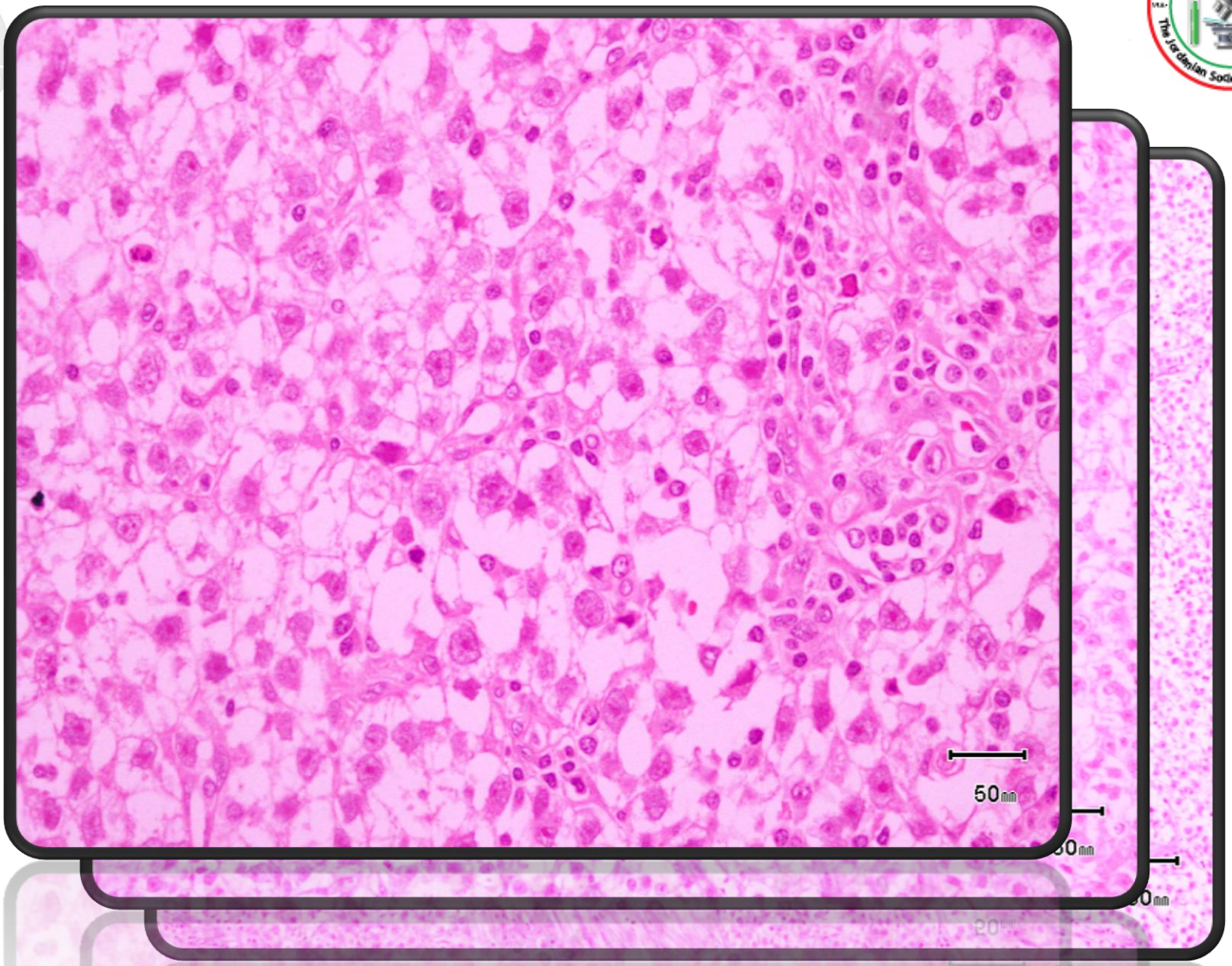
  Serum levels of alpha fetoprotein, lactate dehydrogenase and beta-hCG were within normal limits.

- The patient underwent right-sided radical orchidectomy.

Gross Examination

- Testis with an attached spermatic cord and retracted The tunica vaginalis was identified.
- Sectioning shows a mass occupying the whole testis with variable sized cysts containing yellow gelatinous material, a hard area is identified in the lower pole .

Microscopic Examination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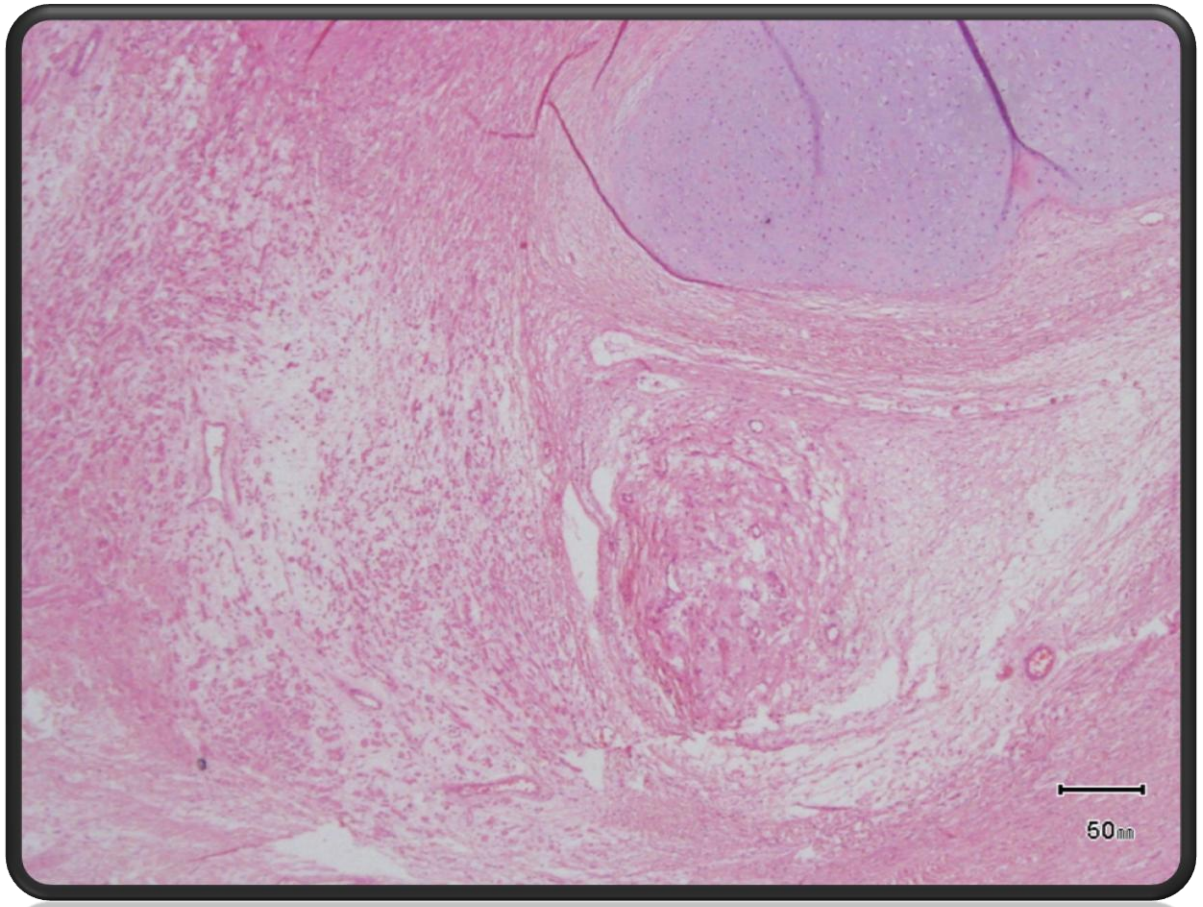
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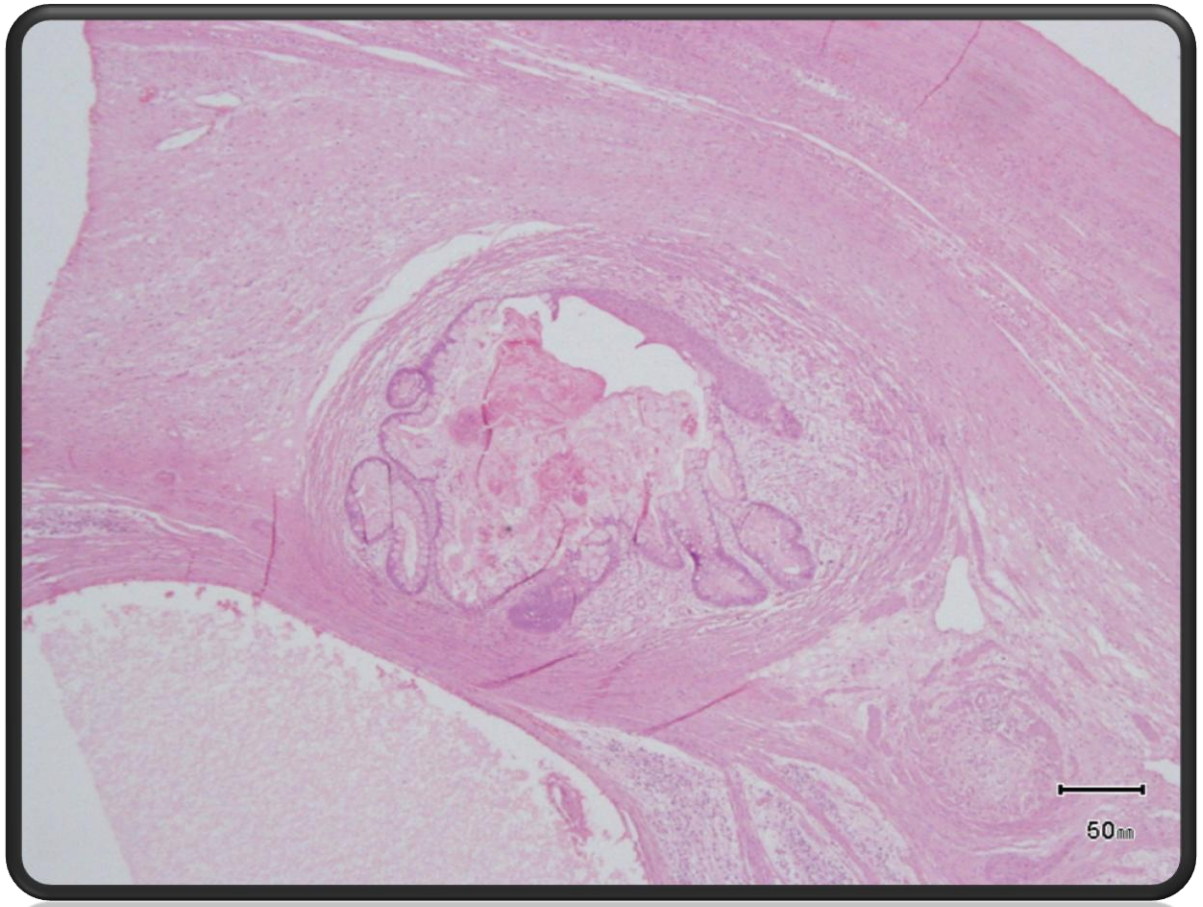
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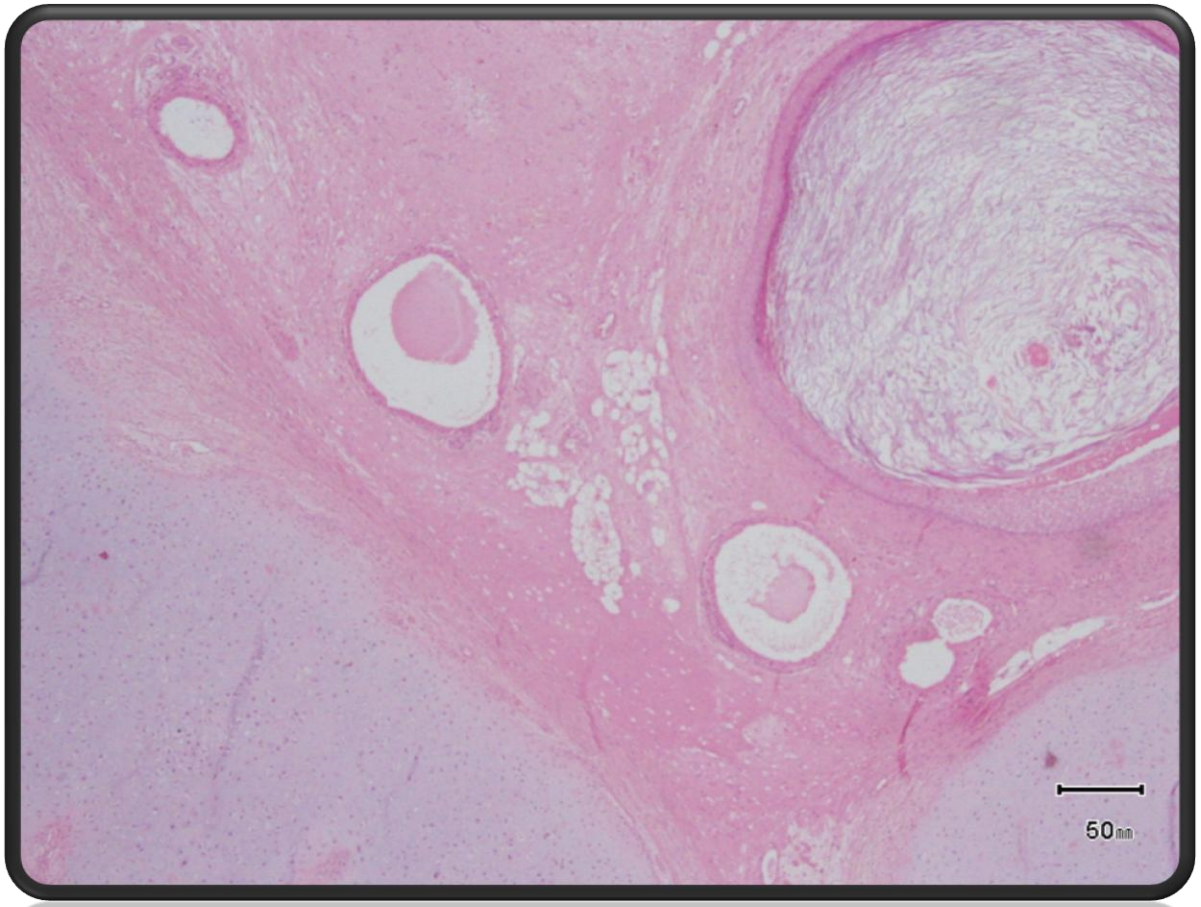
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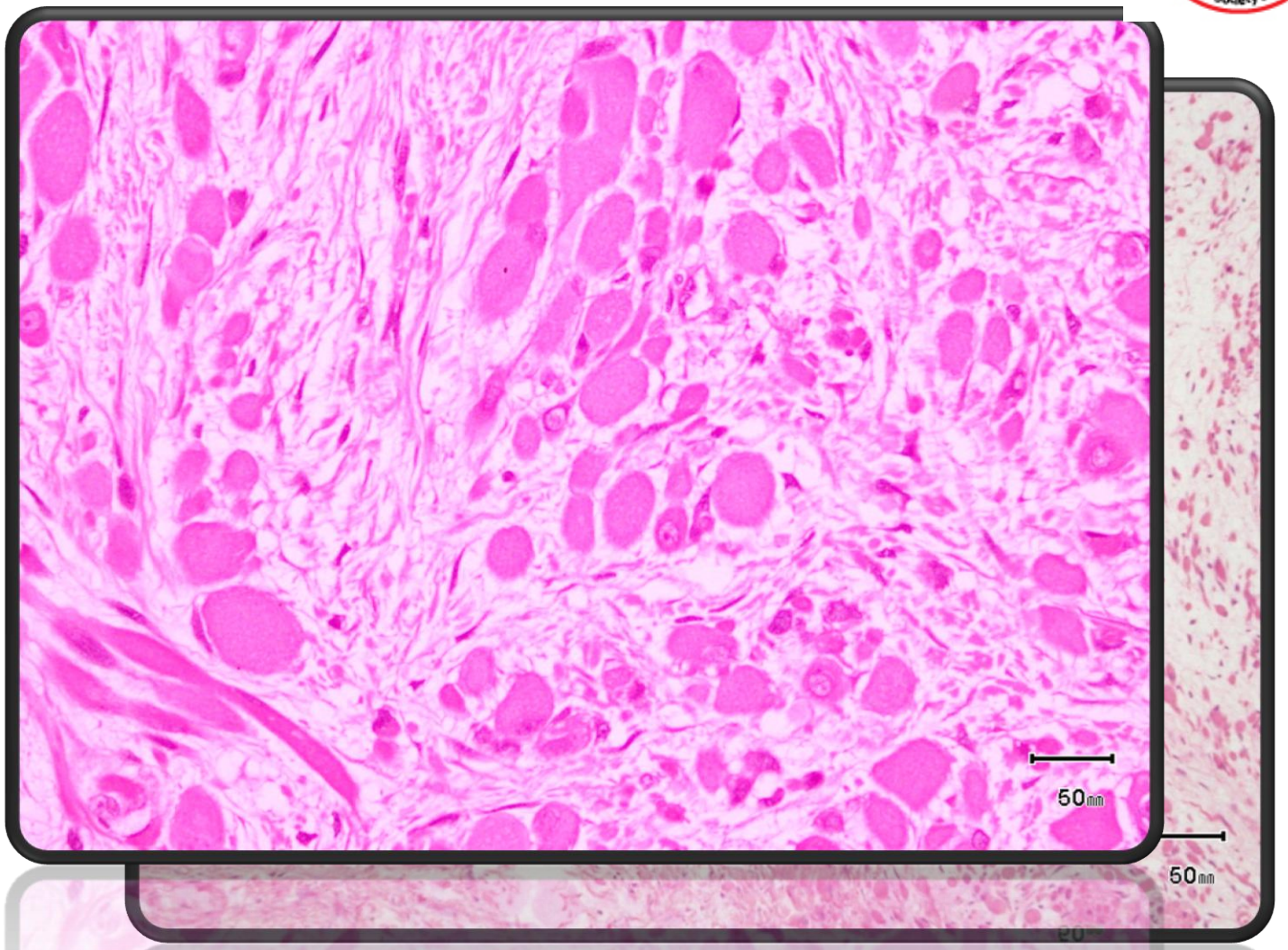
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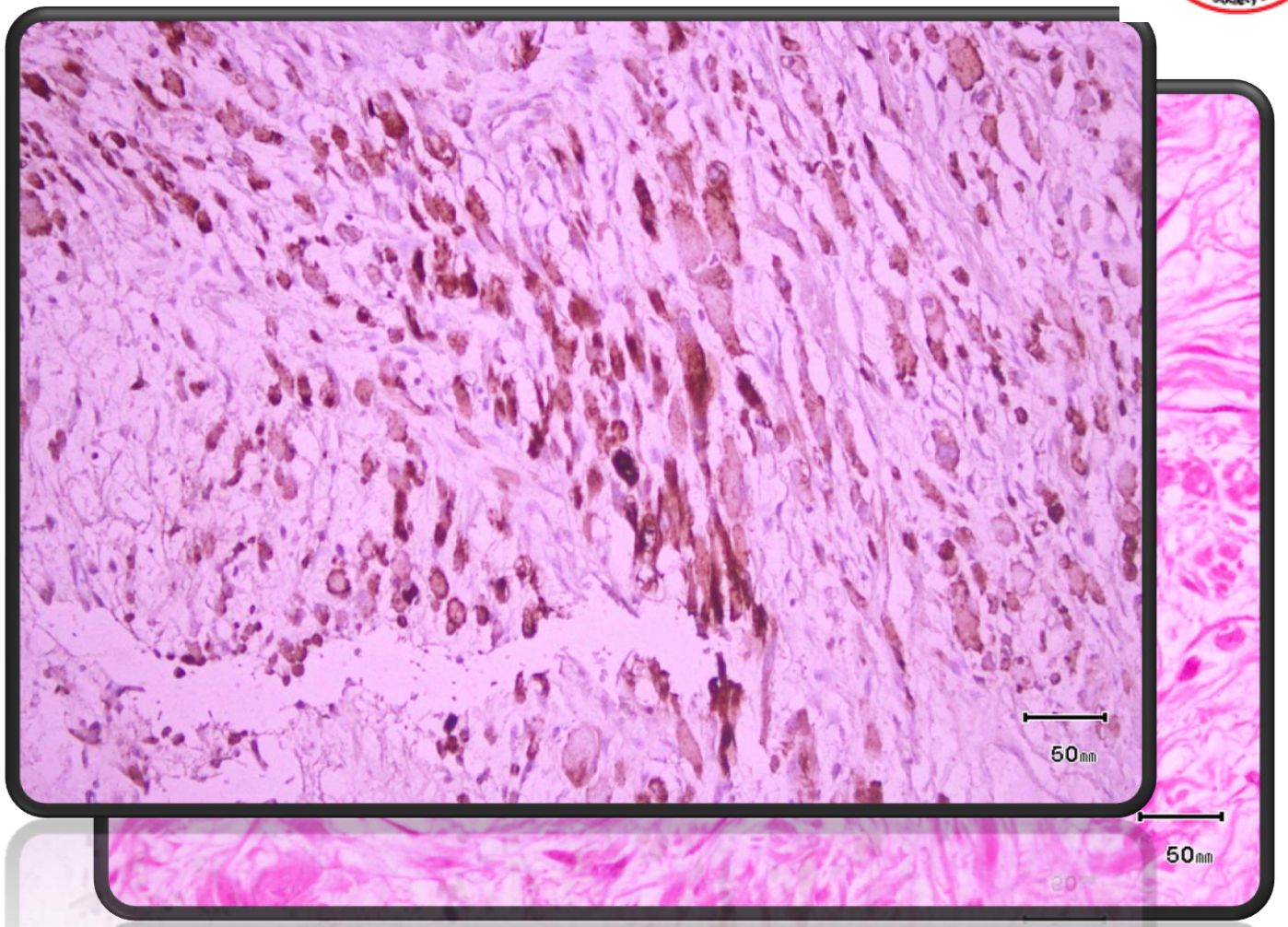
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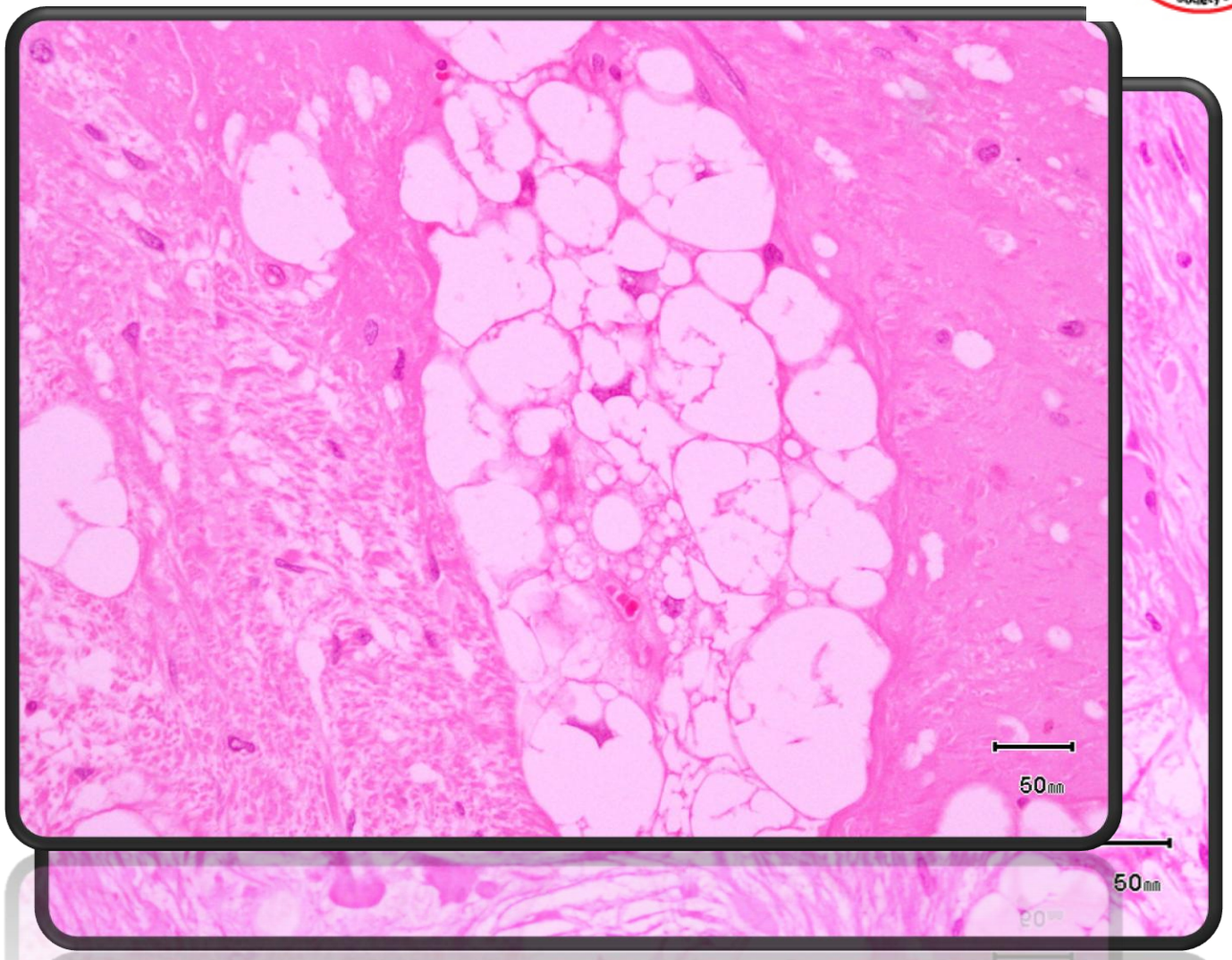

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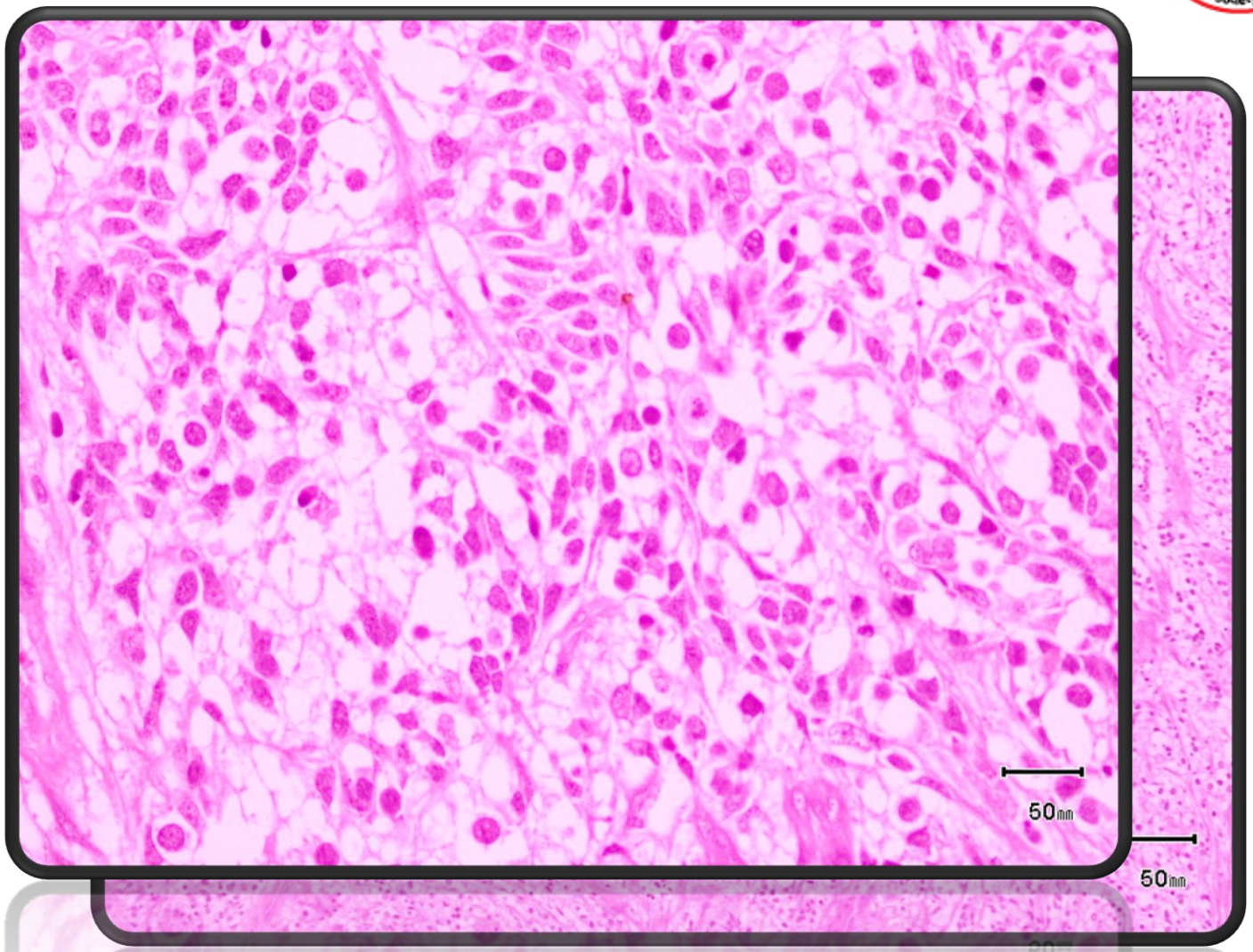
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Diagnosis

- Mixed germ cell tumor: Seminoma and Teratoma with secondary somatic-type malignant components composed of rhabdomyosarcoma, PNET and liposarcoma .

Discussion:

- Testicular neoplasms are 99% malignant.
- The germ cell tumor accounts for 90%.
- Half of germ cell tumors include more than 2 basic germ-cell tumor types.
- Germ cell tumors (GCT)rarely show transformation to malignant somatic type component(MSC).

Somatic transformation in testicular germ cell tumor(GCT).

- Most common in connection with mature and immature teratoma.
- It accounts 3% to 6.6% of GCT with teratomatous component.

Cont. Somatic Transformation in GCT.

- Sarcomas are the most common somatic malignancies observed.
- Rhabdomyosarcoma is by far the most common variety among sarcomas.
- SC may be present in:
  - Primary tumor.
  - The recurrences or
  - The metastasis.(either in combination with GCT or as in dependant tumor)

Topic of concern is the origin of Sarcomatous Components (SC) !!!

Origin of SC.

- Two possible explanations have been postulated according to Ulbright et al:
  - ✓ Partial differentiation of totipotential germ cells with concomitant malignant transformation. Or
  - ✓ New tumor arising from differentiated teratomatous elements.

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Cont. Origin of SC

- Theories proposed by several authors in the past include:
  - ✓ Dedifferentiation phenomenon.
  - ✓ Malignant transformation of certain mesenchymal elements within teratomas.
  - ✓ Origin from primitive germ cells.
  - ✓ Transformation of blastematous stroma in yolk sac tumor.

Am J Surg Pathol 2007;31:1356-1362

Does the presence of SC affect the survival and the prognosis?
How shall we treat those patient?

- There is limited number of published clinicopathologic series. Most of studies have been single-case report or including origins of testis, ovary and mediastinum).

- Very few reports had addressed the role of targeted chemotherapy for specific histologies in these neoplasms, with heterogeneous results.

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Literatures review

- Study of 46 cases showed significant differences in survival between patients with GSTSC and those with GCT but without SC.
- The sarcomatous elements have been resistant to the usual chemotherapeutic regimes.

Am J Surg Pathol 2007;31:1356-1362

Cont. Literatures review

- Analysis of 33 cases suggests that patients with SC confined to the primary testicular GCT may not have a higher risk of mortality than those at a comparable stage without a SC.

Am J Surg Pathol
2009;33:1173-1178.

Cont. Literatures review

- Only the presence of a SC in a metastasis is associated with an increased risk for mortality.

- Cisplatin-based chemotherapy is highly effective for GCTs, but not successful in those GCTs with a SC.

Am J Surg Pathol 2009;33:1173-1178.

Cont. Literatures review

- Accurate classification of somatic component in GCT is important to the type of chemotherapy used in these patients.

Am J Surg Pathol 2009;33:1173-1178.

Cont. Literatures review

- Another study including 40 cases considered as whole that malignant somatic components(MSCs) are much less sensitive to chemotherapy than usual forms of GCT.

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Cont. Literatures review

- Stage at presentation and radical surgical removal of disease appear to be the strongest disease-related prognostic factors in TSMC.

- Patient with MSC confined to the testis have a good prognosis.

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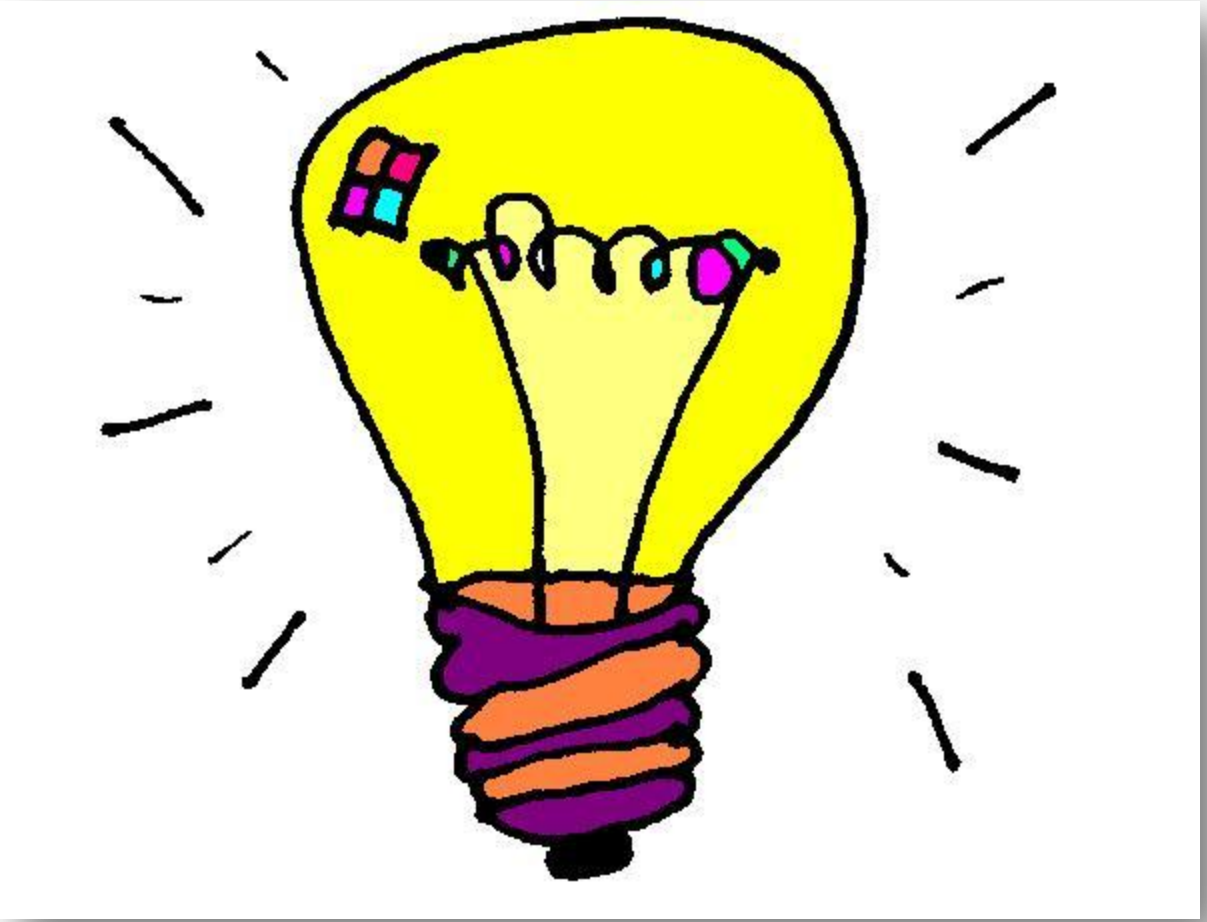
Cont. Literatures review

- Donadio et al reported that GCT patients with a single histologic type of SC responded well to specific chemotherapy when the treatment choice was based on the histology of the SC.

J Clin Oncol 2003;21:4285-4291

Conclusion.



Cont. Conclusion.

- Although testicular GCT is a highly curable disease, the development of a SC represents a challenge in treatment.
- Due to the limited number of cases. There is no consensus whether to treat them as RMS patients or not.

Cont. Conclusion.

- It is important for a general pathologist to properly recognize the occurrence of MSC within a teratoma in primary as in metastatic sites.

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Cont. Conclusion.

- What should be avoided in the evaluation of these cases is misinterpreting focal areas of atypical stromal overgrowth within conventional GCTs for true sarcomatous elements.

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Thank you..