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Spermatocytic Seminoma

A Report of 85 Cases Emphasizing Its Morphologic Spectrum Including Some Aspects Not Widely Known

汇 报 人 : 王 帅

精原细胞瘤（Seminoma）

- 定义：由形态一致的生殖细胞组成的肿瘤。
- 分类：①经典型精原细胞瘤

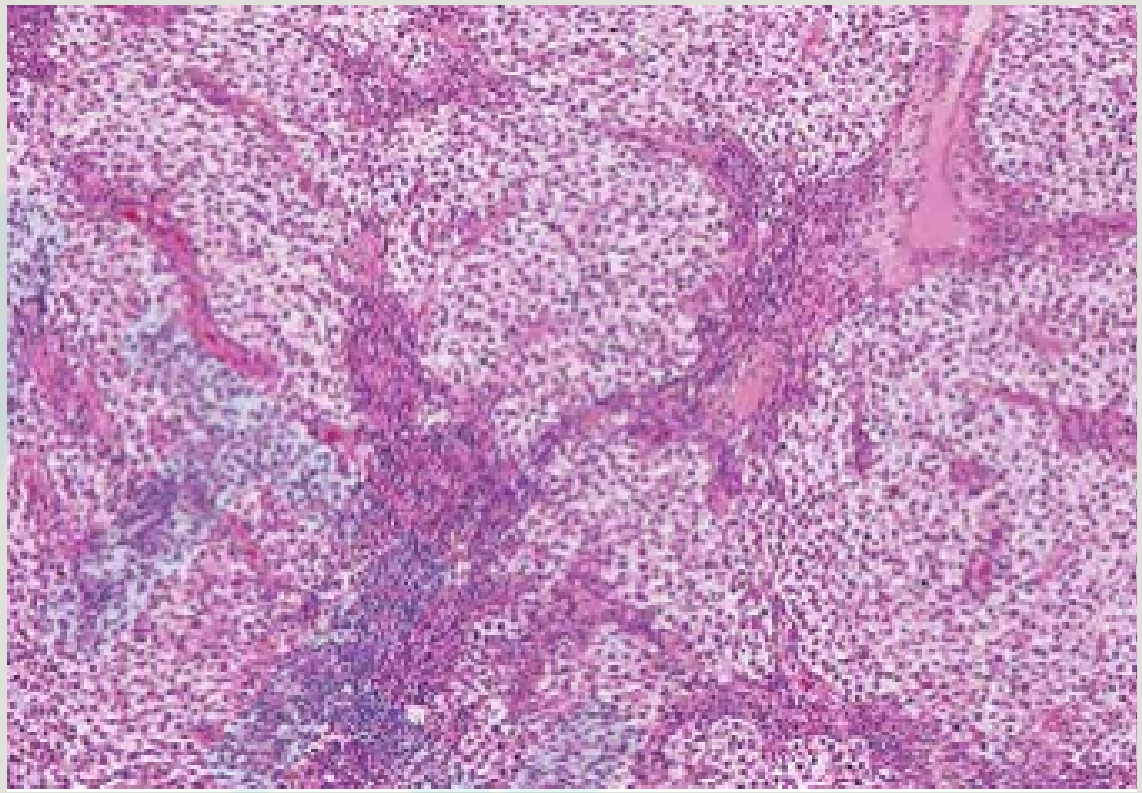
②精母细胞性精原细胞瘤

新版WHO将“精母细胞性精原细胞瘤” 改名为“精母细胞瘤”，归类为与GCNIS（原位生殖细胞肿瘤）无关的生殖细胞肿瘤

经典型精原细胞瘤（Seminoma）

- **ICD-O编码**：9061/3

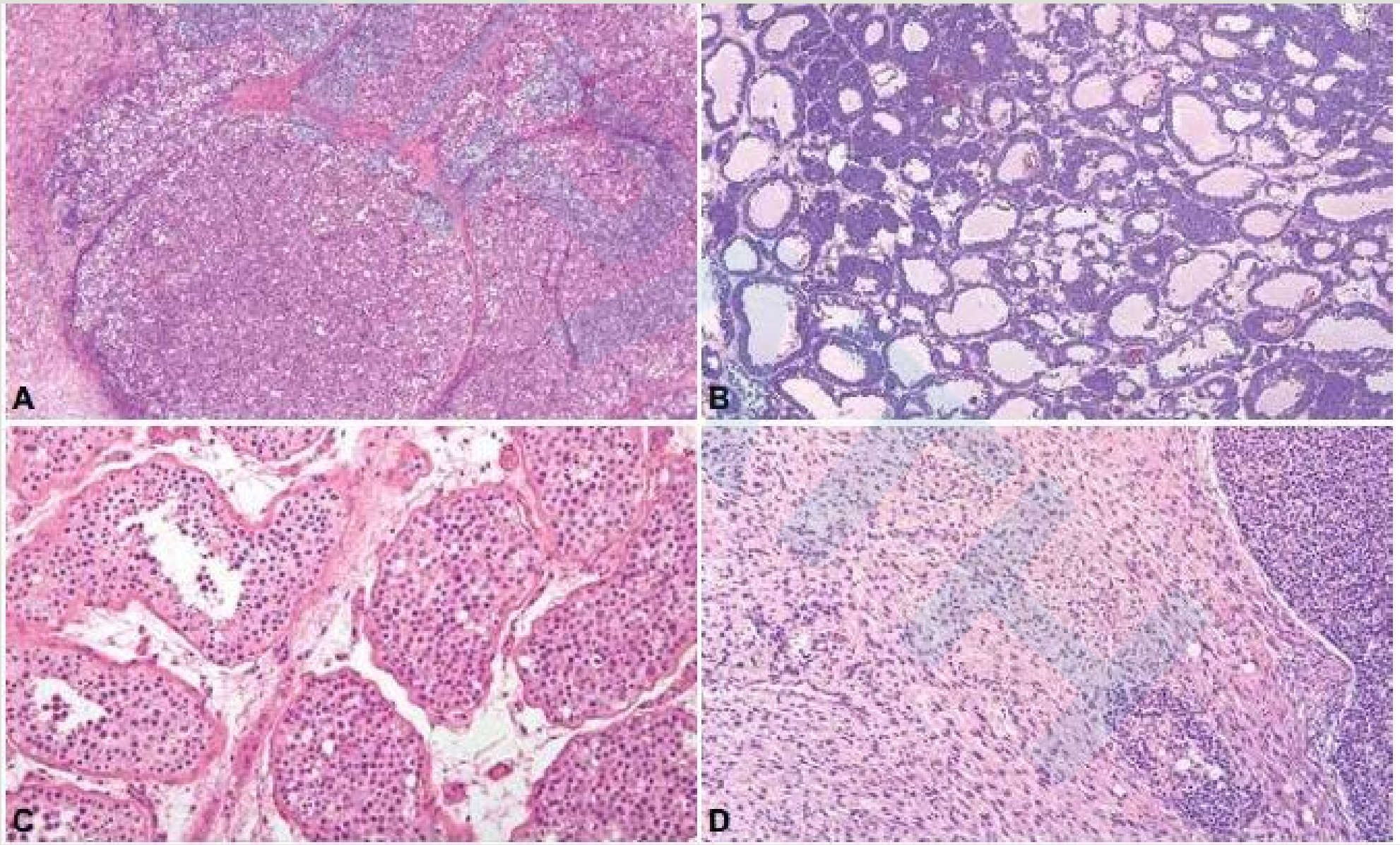
- **组织学形态**：一致的肿瘤细胞被纤细的纤维分隔成片状、条索状或柱状，伴有淋巴细胞浸润；肿瘤细胞胞质透明含有丰富的糖原，核大而规则，有一个或多个核仁，细胞胞界清楚。



精母细胞性精原细胞瘤（Spermatocytic Seminoma）

- **ICD-O编码**：9063/3
- **流行病学**：罕见，占睾丸生殖细胞肿瘤的1%
- **大体检查**：肿瘤质软，界限清楚，切面呈黏液样。可见分叶，囊性变，出血和坏死。
- **临床特点**：老年男性（52-59岁）；只发生在睾丸；肿瘤多为单侧。
- **病理形态**：肿瘤细胞间黏附性小，间质少或水肿；胶原条索包绕肿瘤三种细胞成分
- **预　　后**：预后好，手术切除后很少复发

精母细胞性精原细胞瘤
（Spermatocytic Seminoma）



研究目的

- 精母细胞性精原细胞瘤，病例非常罕见，病理诊断存在误区。
- 除了伴肉瘤成分的精母细胞性精原细胞瘤之外，它预后良好，准确诊断并将其与经典型的精原细胞瘤和其他恶性肿瘤（如淋巴瘤）区分开是至关重要的。
- 为了提供诊断性辅助信息，作者回顾了迄今为止报告的一系列病例，并详细的描述了其组织学形态的特点。

材料&方法（85例病例）

- 作者收集85例精母细胞性精原细胞瘤的病例。
- 已知年龄的78例病例，年龄30-81（平均52）；

  30-39岁占30%，40-59岁占35%，60岁以上占35%。
- 所有患者均表现为睾丸肿块或睾丸增大
- 少数患者（9/85）提供了血清方面的信息，均没有乳酸脱氢酶，β-人绒毛膜促性腺激素，甲胎蛋白水平标高。
- 已知肿瘤发生在睾丸的具体位置的65例，29例在右侧，33例在左侧，3例为双侧睾丸肿瘤。

材料&方法

- 已知肿瘤大小的病例65例，从1.4cm到15cm(平均5.7cm)
- 63例肿瘤有大体外观资料，均局限在睾丸白膜。大多数肿瘤呈粉红色、褐色或灰白色，质软，分叶状。（例外1例：肿瘤呈黄色）
- 11例肿瘤切面呈胶冻样、黏液状或水肿状。3例切面呈囊性，7例呈局灶囊性，4例中立切面可见出血、坏死。

结果1：精母细胞性精原细胞瘤形态

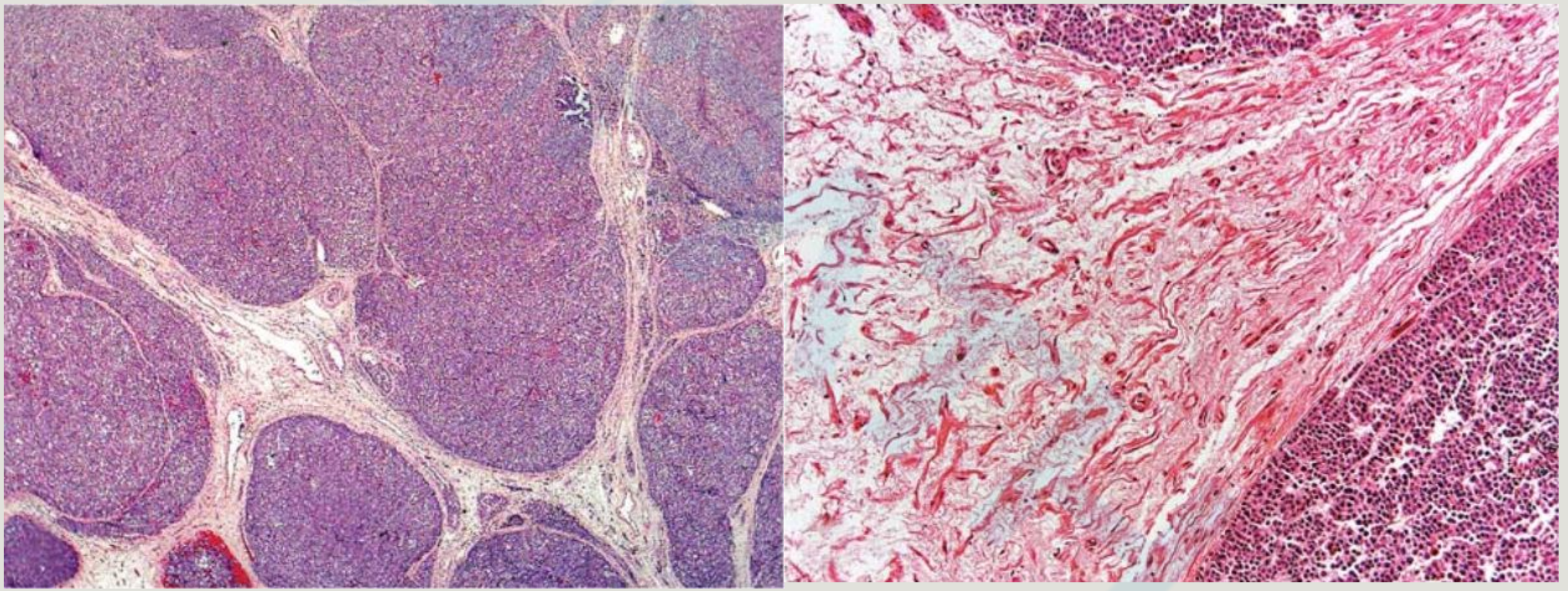


FIGURE 2. A, A typical multinodular pattern. B, Note abundant loose, fibrous stroma lacking parenchymal elements between 2 tumor nodules. C, A diffuse pattern with partial preservation of tubules, similar to the low power appearance of many lymphomas. D, At medium magnification the tumor in (C) shows early signs of the characteristic variably sized cells. E, A peripheral band of fibrin surrounds portions of 2 tumor nodules. F, A single, short fibrous band in a diffuse growth of tumor cells. Note lack of associated lymphocytes.

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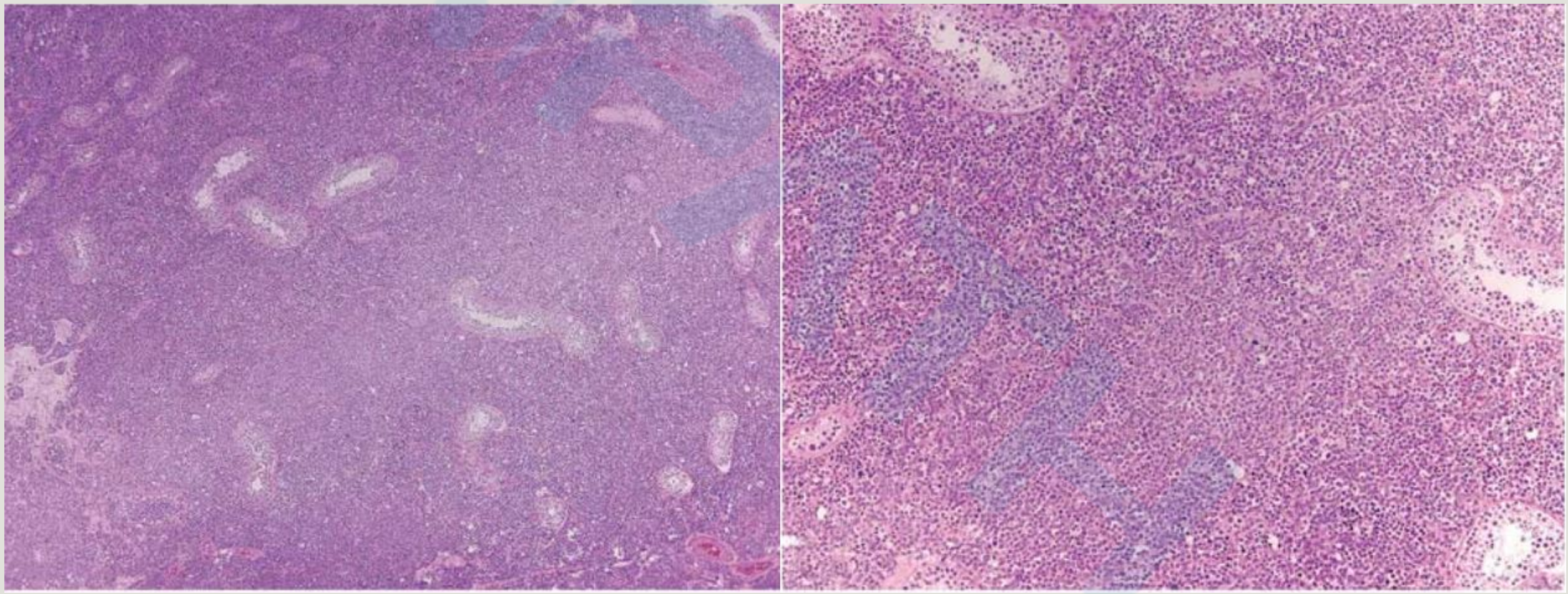

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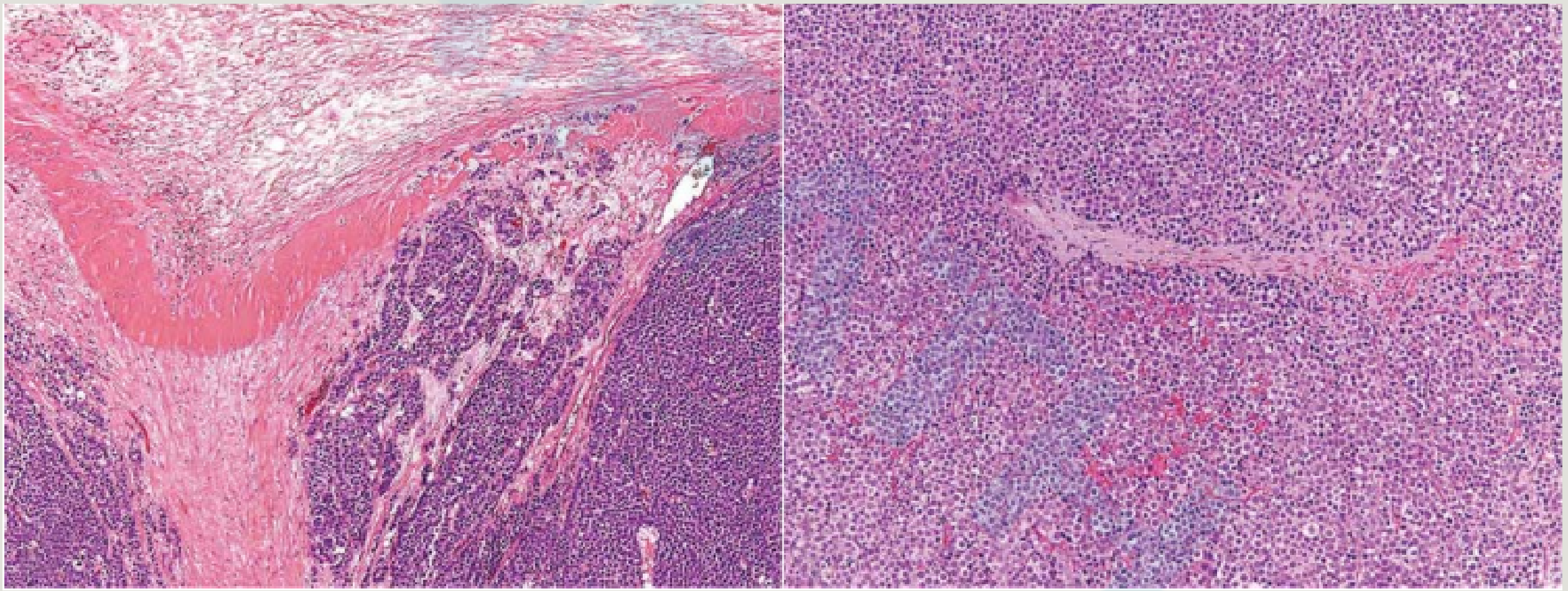

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结果1：精母细胞性精原细胞瘤形态

- 43/85病例低倍镜下肿瘤细胞呈多结节状，肿瘤结节之间可见疏松的纤维血管间质，缺少睾丸的实质残留，17/43例病例肿瘤结节周围有纤维蛋白包绕，排列成带状。

- 42/85病例肿瘤细胞弥漫分布，15例病例在弥漫生长的肿瘤细胞间可见少量纤细的纤维束。

结果2：精母细胞性精原细胞瘤形态

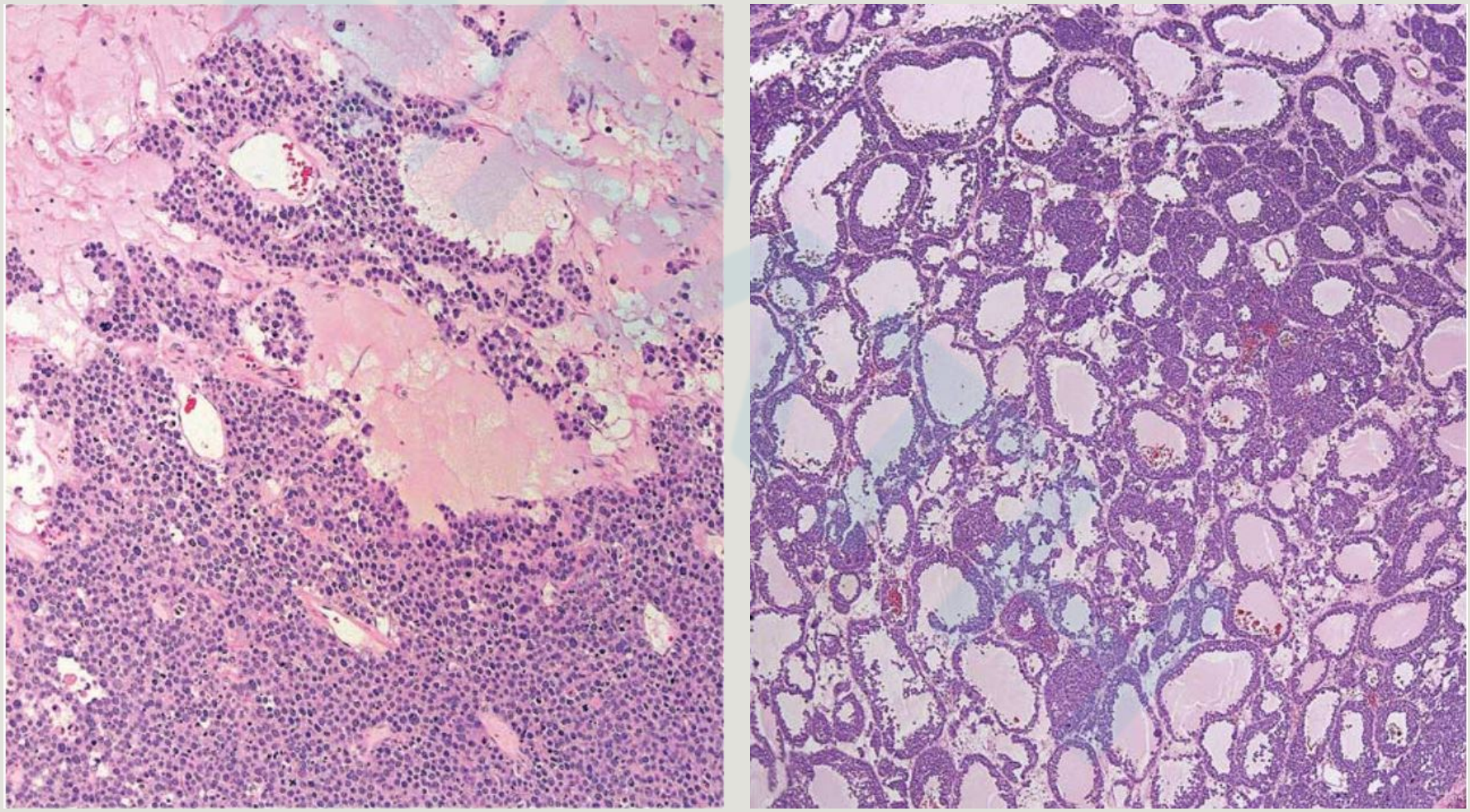

FIGURE 3. A, A large aggregate of pink fluid occupies most of the upper half of this field. B, Numerous pseudofollicles contain pink fluid. C, Edema fluid creates irregular spaces in the tumor. D, Numerous microcysts in tumor islands, some with a distinct peripheral palisade of cells.

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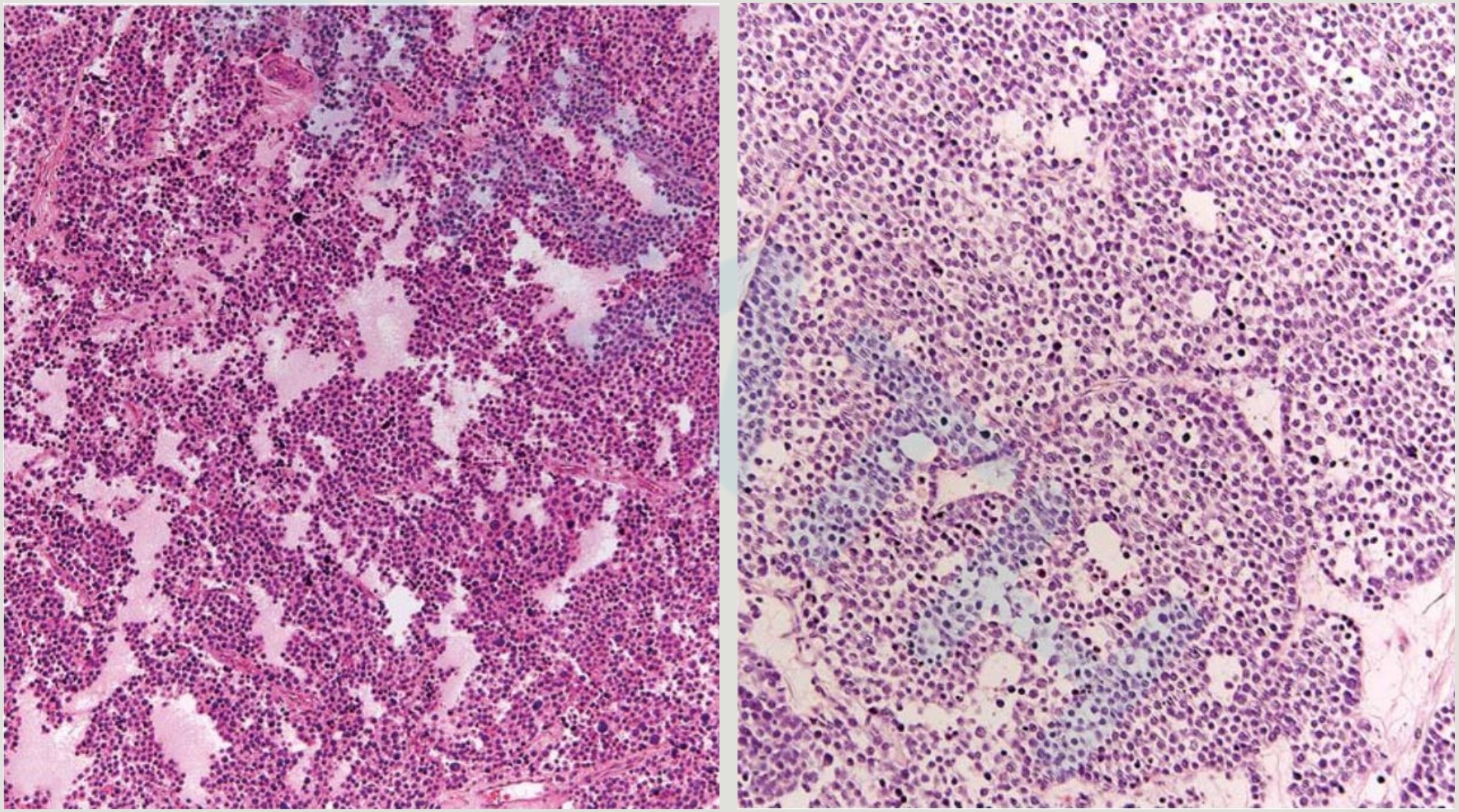

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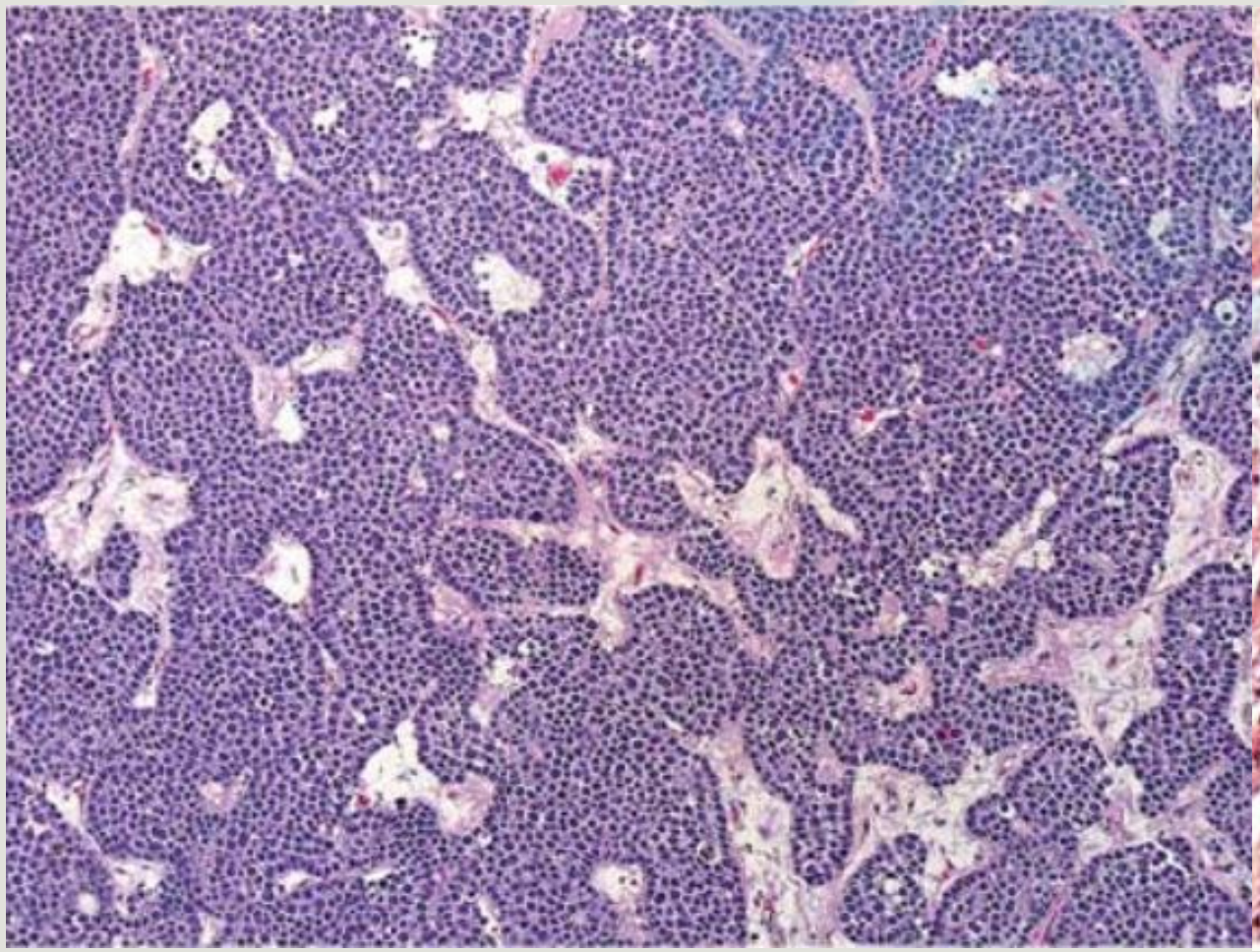
结果2：精母细胞性精原细胞瘤形态

- 74/85病例出现了或多或少的水肿液，主要是大量透明或浅粉色蛋白质物质；
- 20/74病例形成假滤泡结构（假滤泡：由多层细胞排列成相对规则的卵形到圆形结构）；
- 33/74病例水肿液聚集在肿瘤细胞之间形成不规则的间隙；
- 13/74病例微囊形成。

结果3：精母细胞性精原细胞瘤形态



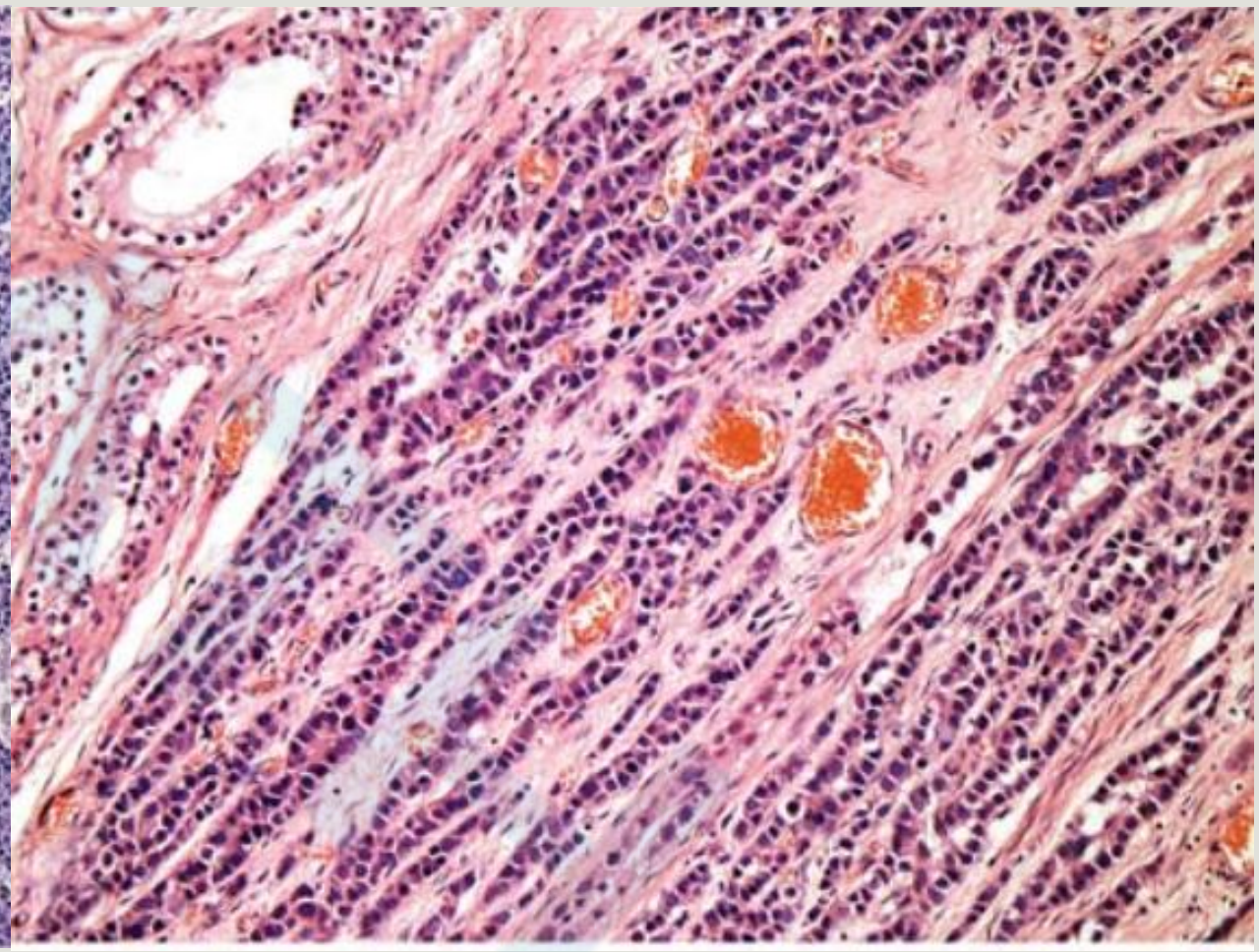


FIGURE 4. A, Anastomosing islands are seen. B, Cords, trabeculae, and pseudotubules at the periphery of a tumor nodule. C, "Tripartite" morphology. Note the predominant intermediate cells with small to inconspicuous nucleoli, small cells with dense, homogeneous chromatin, and multinucleated giant cells. D, Intermediate cells with prominent nucleoli and giant cells with "ropey" chromatin. A mitotic figure is seen. E, Unusual focus of clear, intermediate cells with well-defined cytoplasmic membranes suspended in edema fluid. F, Area of so-called "anaplastic" morphology consisting of intermediate cells with prominent nucleoli and round nuclei. Note apoptotic cells and mitotic figures.

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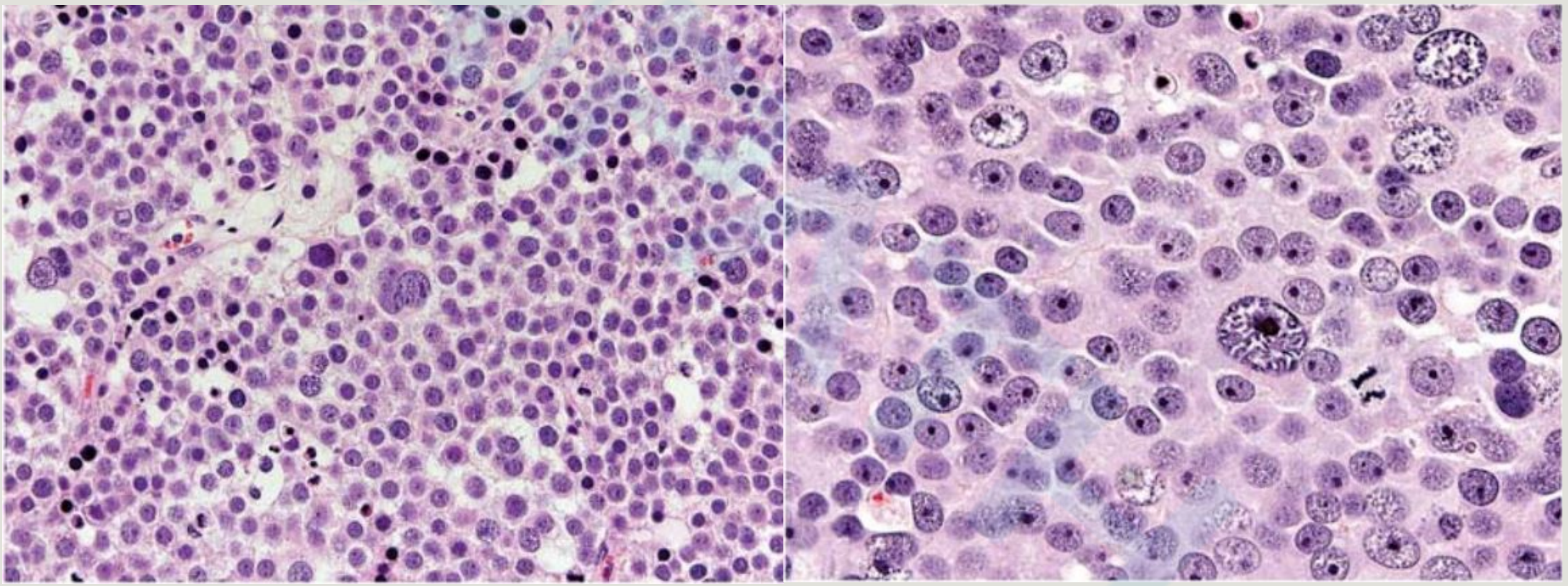

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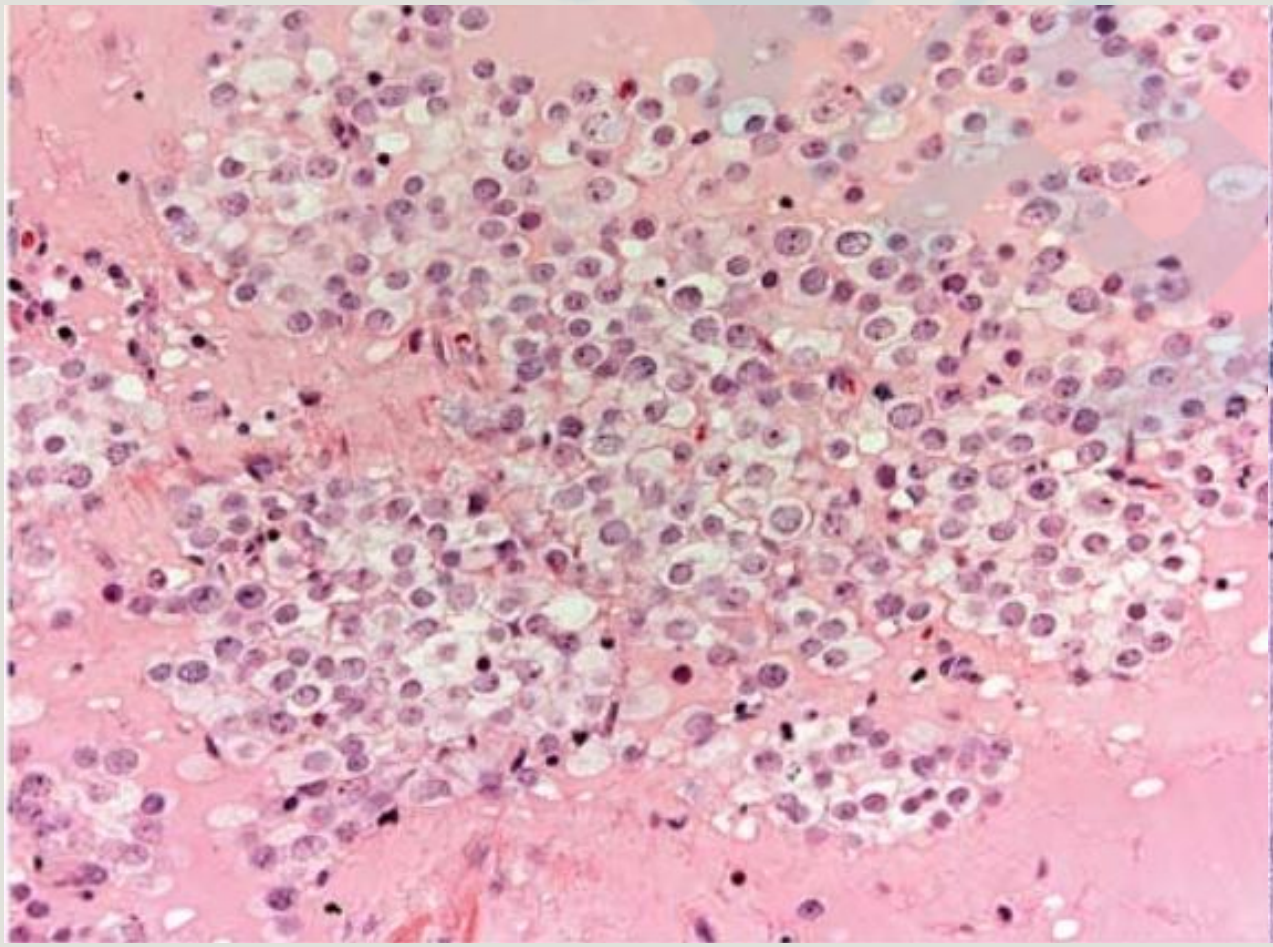

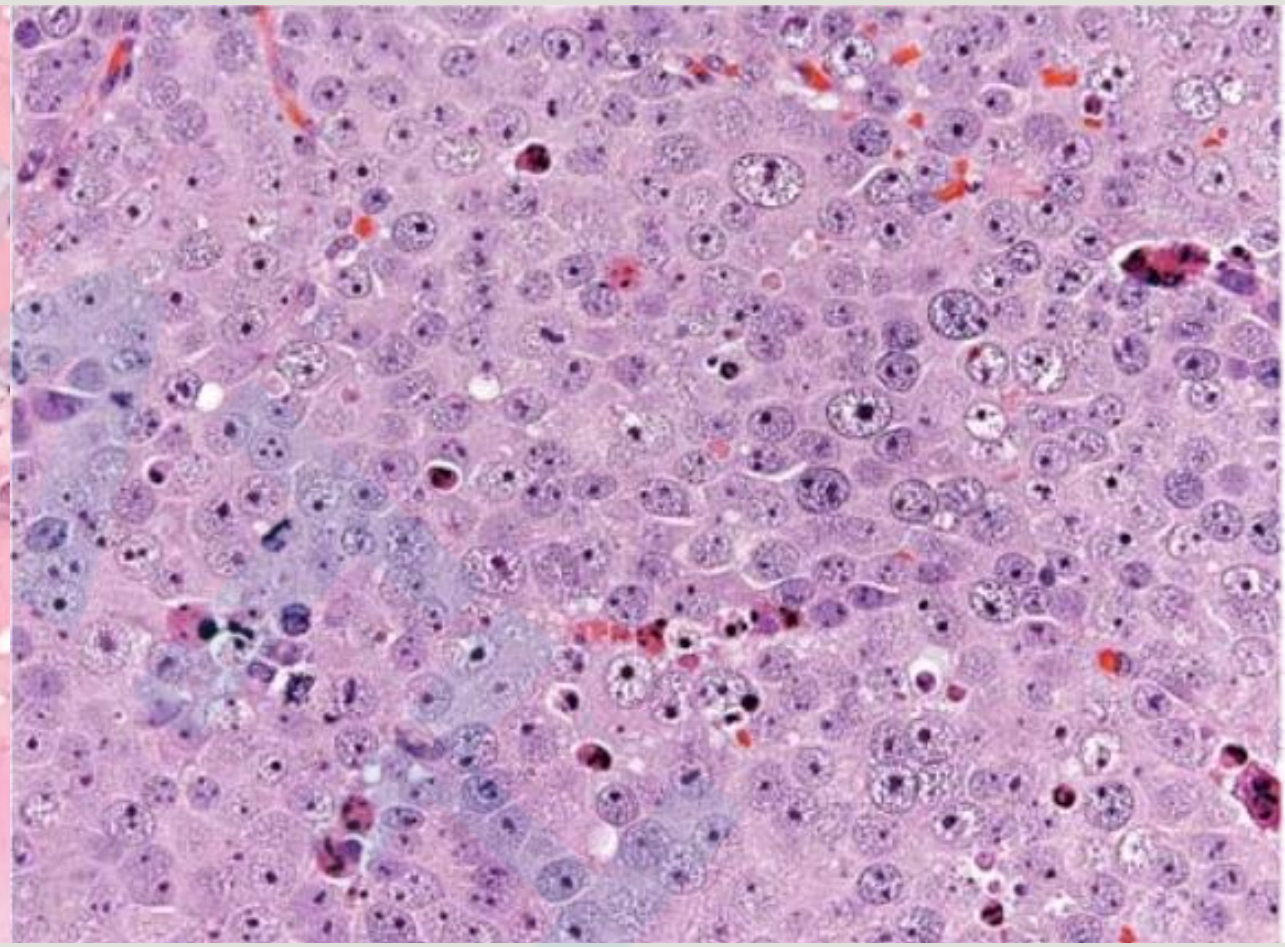

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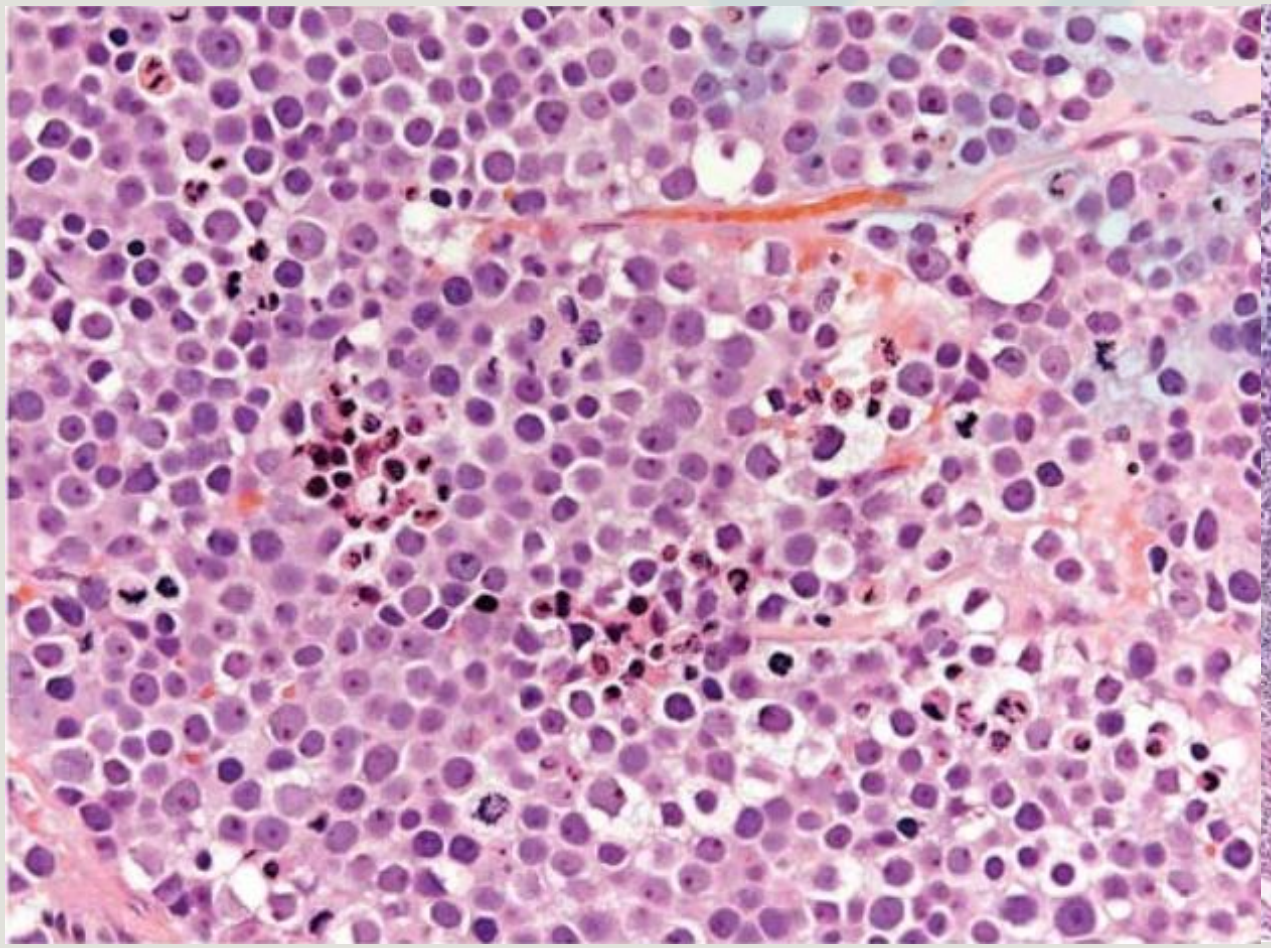
结果3：精母细胞性精原细胞瘤形态

- 16例病例肿瘤结节内可见吻合岛。18例病例肿瘤结节周边可见细胞排列成条索样、小梁状或假腺样；
- 所有肿瘤都具有典型的3种细胞成分:小细胞、中间细胞和大细胞。
- 主要类型为中间型细胞，细胞中等大小，圆形，粗细不等的颗粒状染色质，明显核仁/不明显，胞浆嗜酸。
- 第二种细胞，细胞小，体积略大于淋巴细胞，核深染，染色质致密均匀，胞浆稀少。
- 第三种细胞，为大细胞，单核、双核或多核，核圆形，染色质呈丝状或丝球状，体积是中间型细胞的2-3倍。

结果4：精母细胞性精原细胞瘤形态

A

B



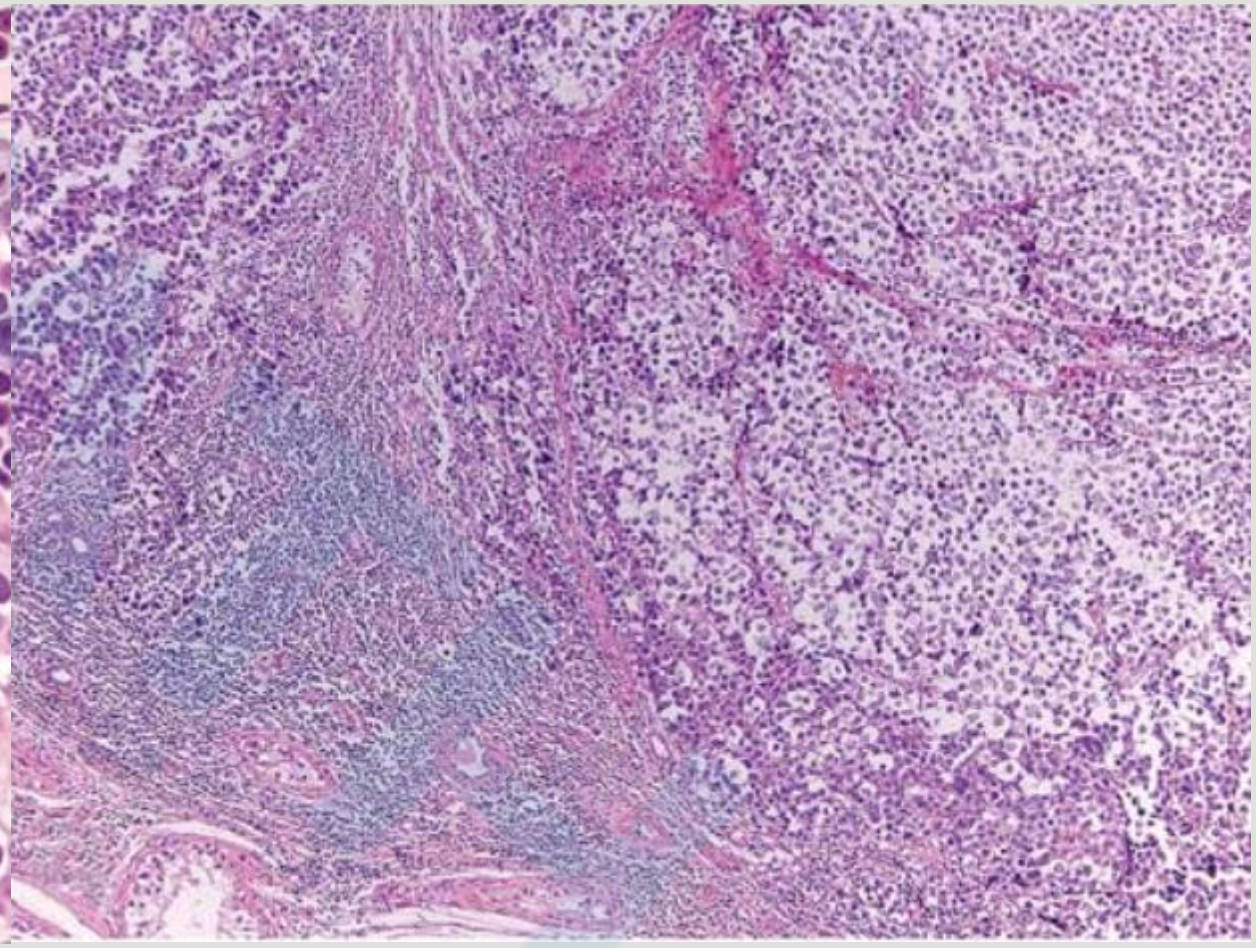
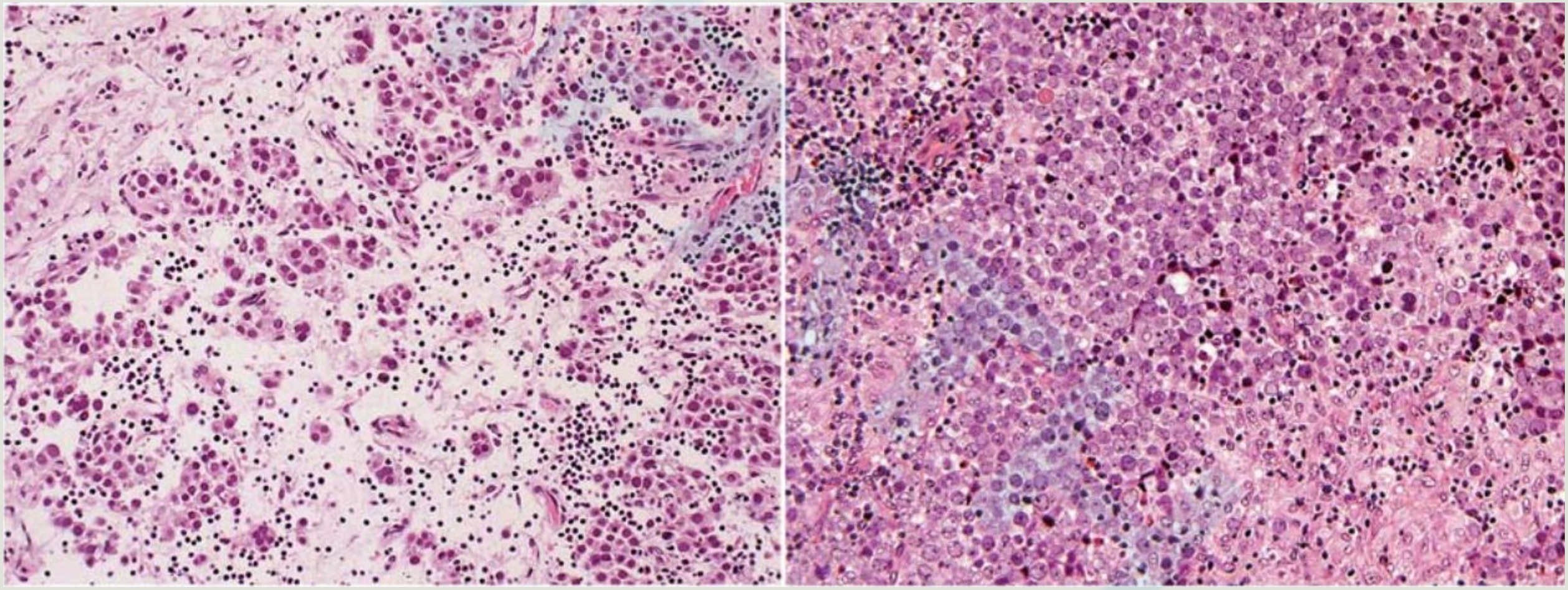


FIGURE 5. A, Clusters of apoptotic cells among intermediate cells with fine chromatin and conspicuous nucleoli. B, Abundant lymphocytes in the stroma between 2 nodules; focal fibrous septa involving the nodule on the right and tumor cells with appreciable pale cytoplasm cause a low power appearance highly suggestive of classic seminoma. C, Lymphocytes admixed with clusters of tumor cells. D, Rare case showing a lymphocytic and granulomatous reaction, the latter occurring as aggregates of epithelioid histiocytes. E, Intratubular tumor with adjacent tubules showing normal spermatogenesis. F, Intertubular growth at the periphery of a tumor nodule.

结果4：精母细胞性精原细胞瘤形态

C

D



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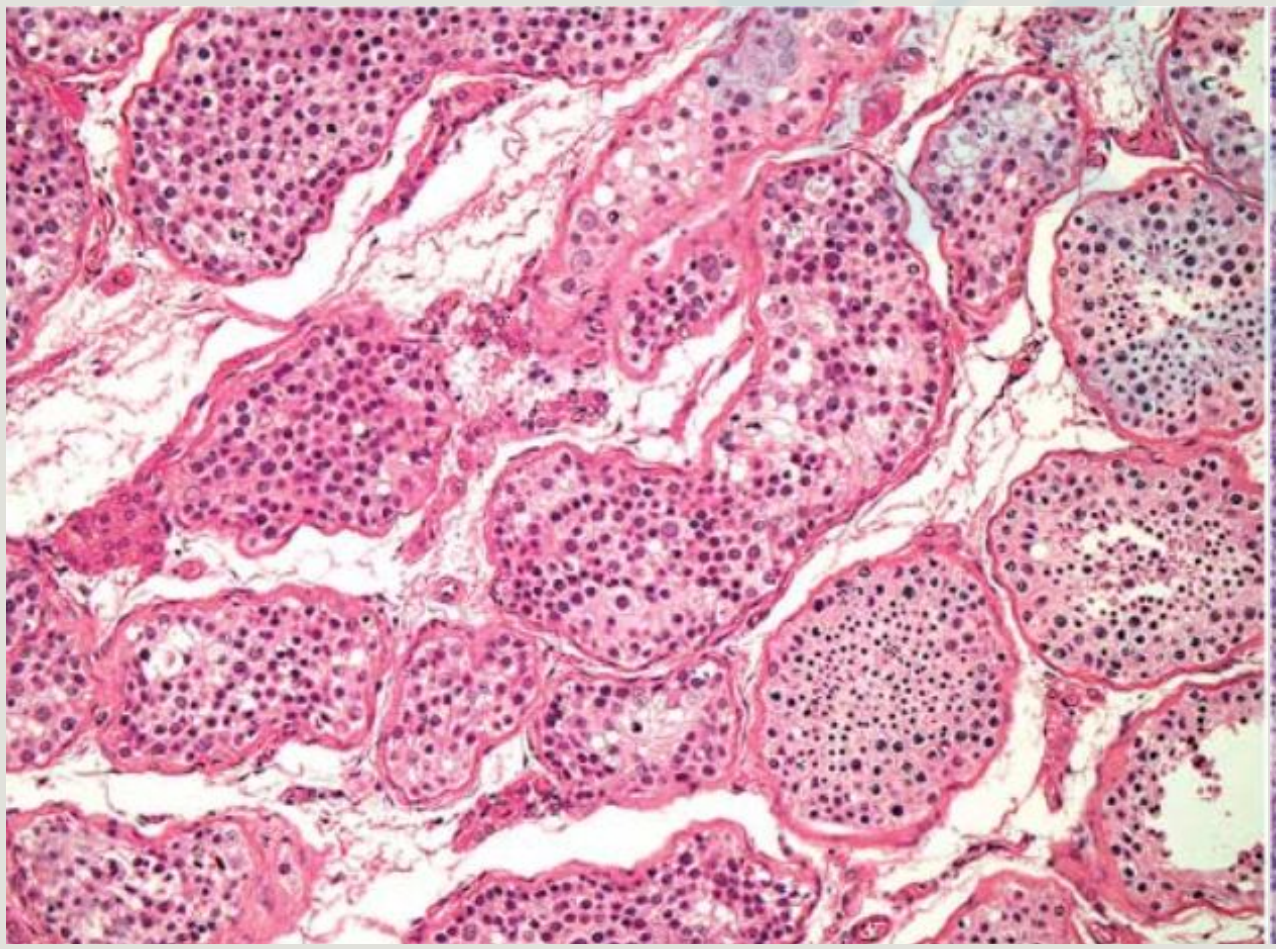
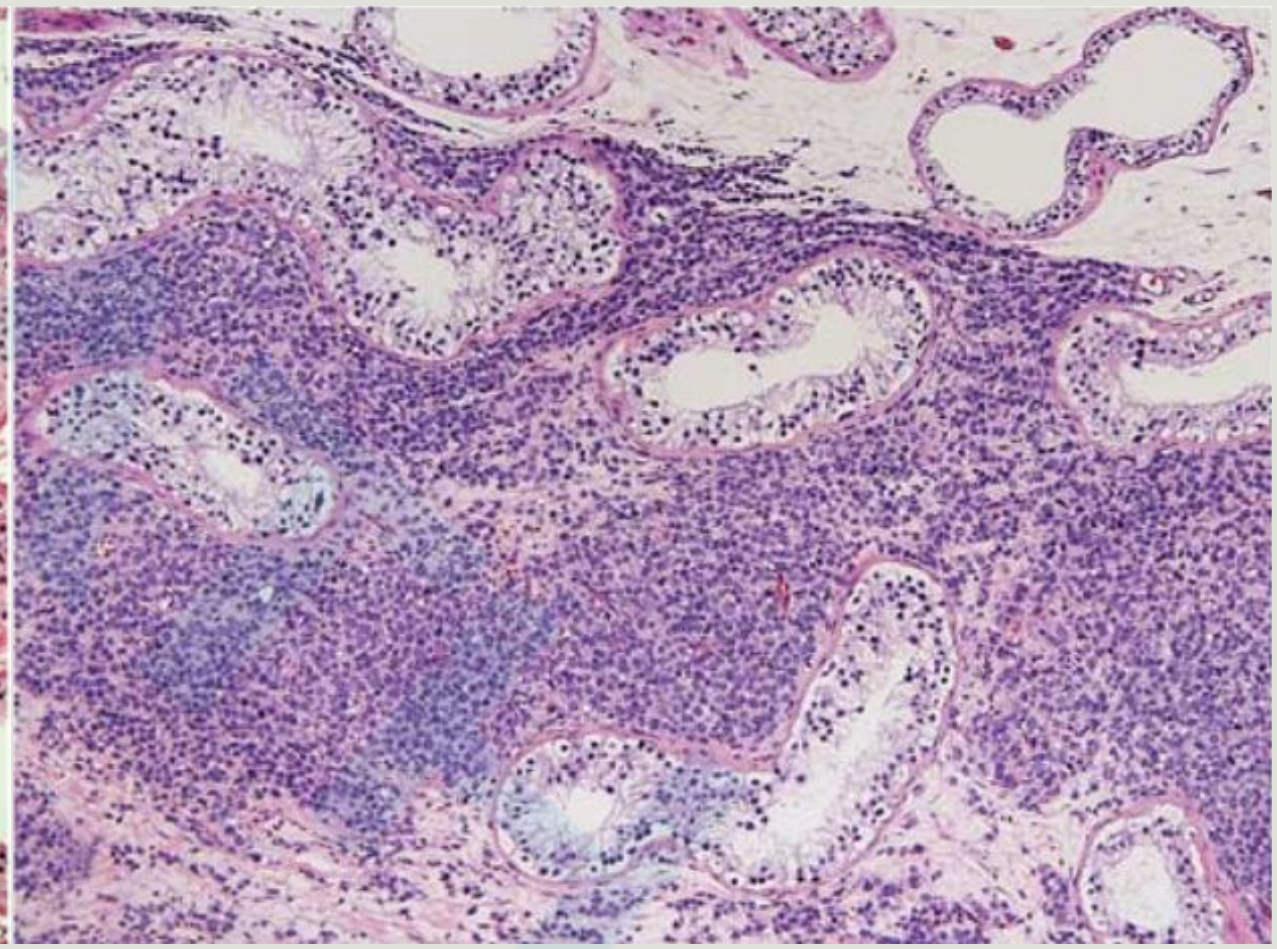
结果4：精母细胞性精原细胞瘤形态

E

F





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结果4：精母细胞性精原细胞瘤形态

- 32/85病例肿瘤可见少量淋巴细胞簇，7/85病例可见显著淋巴细胞浸润；
- 淋巴细胞主要是在肿瘤结节周围的纤维组织内浸润，少量在肿瘤细胞间浸润。
- 74例肿瘤可评估肿瘤周围组织的情况。
- 47/74病例管腔内扩散，肿瘤细胞充满生精小管；
- 29/74病例出现了肿瘤细胞管间生长。
- 邻近的非肿瘤性睾丸组织68例， 42/68例表现出一定程度的萎缩，但通常不像典型精原细胞瘤萎缩明显。

结果

TABLE 1. Histologic Features of Spermatocytic Seminoma

Morphologic Feature	% Positive
Low-power pattern	
Multinodular	51
Diffuse	49
Peripheral rim of fibrin around nodules	20
Edema fluid	87
Pseudofollicles	24
Irregular spaces	39
Microcysts	15
Anastomosing insular growth	19
Cords at periphery	21
"Tripartite" cellular populations	100
Relatively monomorphic cell population with vesicular chromatin and prominent nucleoli	6
Clusters of lymphocytes	
Rare	38
Prominent	8
Striking granulomatous inflammation	1
Lymphovascular invasion	11
Tumor necrosis	8
Intratubular tumor spread	64
Intertubular growth	39
Atrophy in adjacent parenchyma	62
Sarcomatous transformation	2

结果5：精母细胞性精原细胞瘤伴肉瘤成分

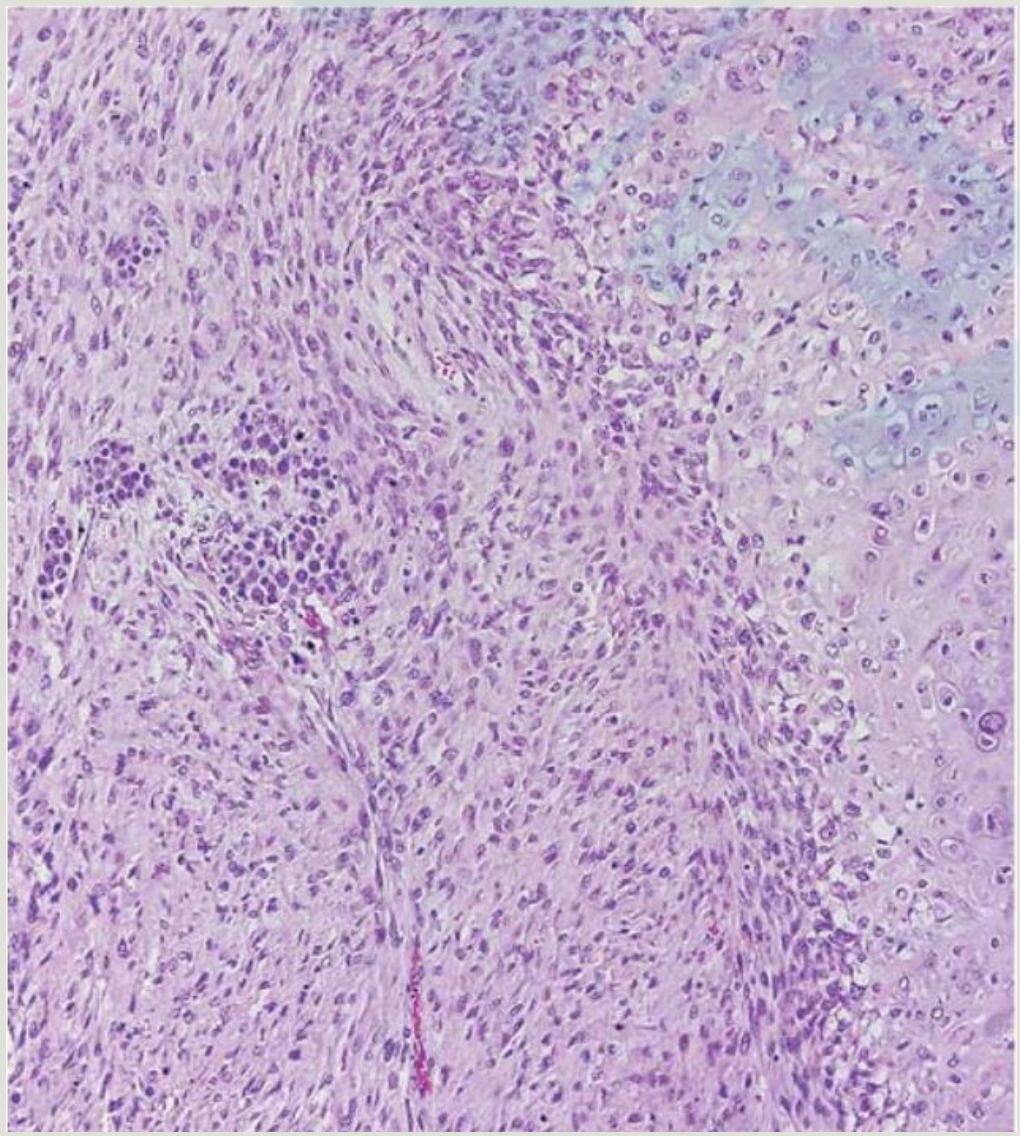
伴有肉瘤成分的精母细胞性精原细胞瘤非常罕见。

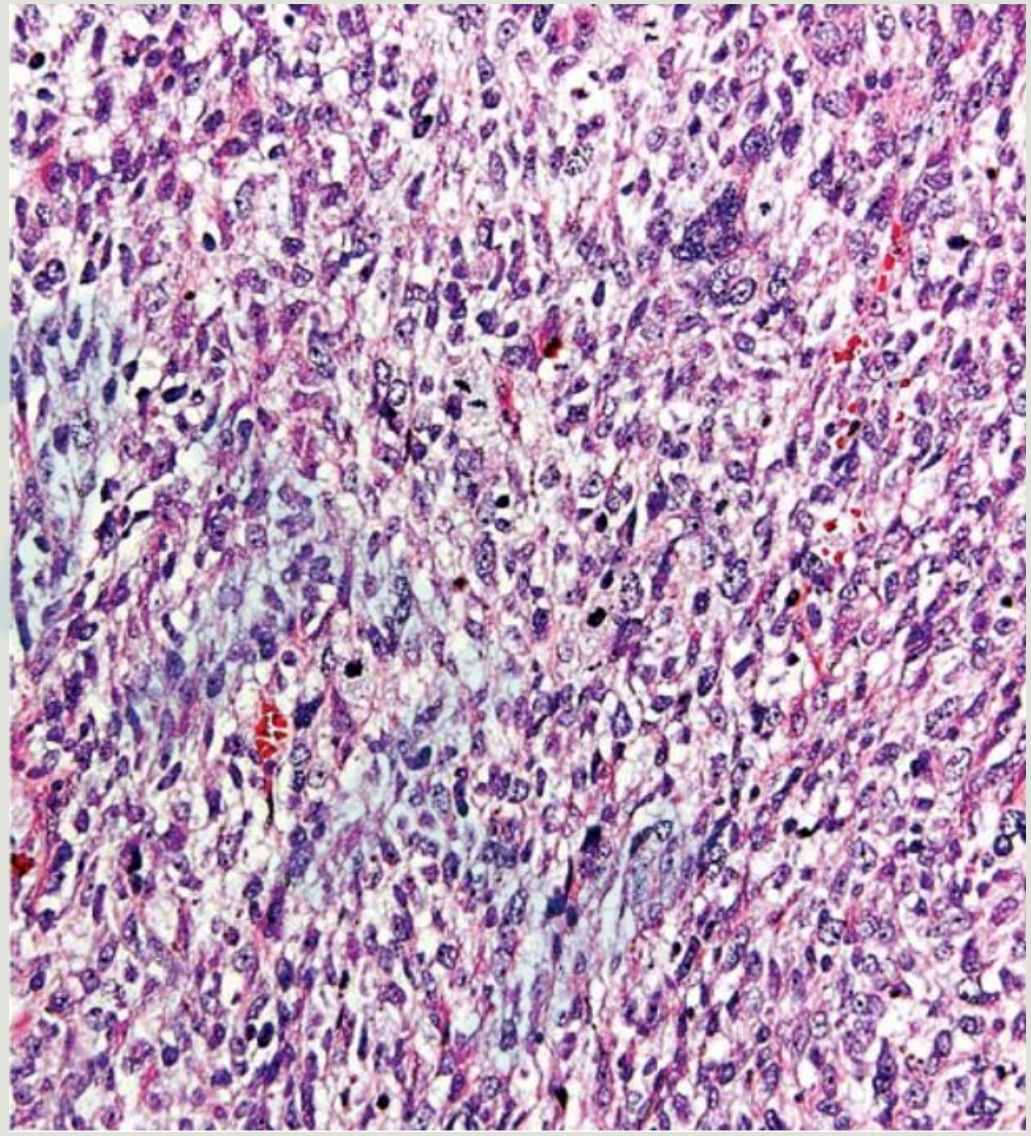
85例中有2例伴有肉瘤成分。

第一例为一名52岁男子，肿物直径9.5厘米。梭形细胞肉瘤成分，无多形性，局灶有软骨肉瘤分化。

第二例为一名39岁男子，肿物直径4.5厘米。肉瘤成分呈多形性，黏液样背景，伴有广泛坏死。

结果：精母细胞性精原细胞瘤形态





结果

TABLE 2. Reported Cases of Spermatocytic Seminoma With Sarcomatous Transformation

Case No and Reference	Age (y)	Tumor Size (cm)	Rapid Increase in Size?	Histology of Sarcoma	Metastasis
1. Floyd et al[4]	42	9.5	Yes	Spindle cell sarcoma	Lung
2. Floyd et al[4]*	55	9.0	Yes	Rhabdomyosarcoma	Lung, liver
3. True et al[5]	55	6	Yes	Spindle cell sarcoma	RPLN
4. True et al[5]	66	17	Yes	Spindle cell sarcoma	No
5. True et al[5]*	56	9	Yes	Rhabdomyosarcoma	Lung
6. True et al[5]	40	7.5	No	Spindle cell sarcoma	No
7. True et al[5]	60	25	No	Rhabdomyosarcoma	Multiple sites
8. Matoska and Talerman[6]	51	18	No	Rhabdomyosarcoma	Lung, liver
9-12. Burke and Mostofi[15]†	44-68	NA	Yes in 3/4	Undifferentiated (4/4)	NA
13. Chelly et al[21]	50	14	Yes	Rhabdomyosarcoma	Liver
14. Robinson et al[22]	44	17	Yes	Rhabdomyosarcoma	Bone
15. Menon et al[23]	55	15	Yes	Rhabdomyosarcoma	NA
16. Trivedi et al[24]	43	18	Yes	Undifferentiated	Lung
17. Narang et al[25]	38	10	Yes	Rhabdomyosarcoma	No
18. Wetherell et al[26]	29	6	No	Undifferentiated	NA
19. Stueck et al[27]	52	9.5	Yes	Focal chondrosarcoma	No
20. Hu (this study)	52	9.5	NA	Spindle cell sarcoma	NA
21. Hu (this study)	39	4.5	NA	Focal chondrosarcoma	NA

*Case 2 and case 5 are the same case that was reported in 2 separate publications.

†Four cases of spermatocytic seminoma with sarcomatous transformation were reported in this study; although details of individual cases were not available, it was noted that 3 of 4 tumors demonstrated rapid increase in size during a short period.

NA indicates not available; RPLN, retroperitoneal lymph node.

讨论1 精母细胞型精原细胞瘤特点

- 患者年龄：平均52岁，
- 比经典型精原细胞瘤平均年龄大15岁，
- 比胚胎性癌（另一种生殖细胞肿瘤）大25岁。
- 本文研究患者更倾稍年轻人群，30%患者在40岁左右，最年轻的19岁

讨论1 精母细胞型精原细胞瘤特点

- 左侧和右侧肿瘤发生比例相似（51%和44%）
- 3例发生双侧肿瘤，1例隐睾，1例左右侧不清。
- 双侧睾丸发生率高于经典型精原细胞瘤。
- 隐睾是睾丸生殖细胞瘤的危险因素，但似乎不是精母细胞型精原细胞瘤的危险因素，与精母细胞型精原细胞瘤是原位生殖细胞肿瘤无关的生殖细胞肿瘤相关。

讨论1 精母细胞型精原细胞瘤特点

- 大多数精母细胞型精原细胞瘤在外周表现为管内扩散，易误诊为原位生殖细胞瘤。
- 精母细胞型精原细胞瘤小管内由肿瘤细胞填充，基底膜不增厚，并且在许多小管内可以看到精子。
- 原位生殖细胞瘤肾小管的基底膜增厚，不存在精子。

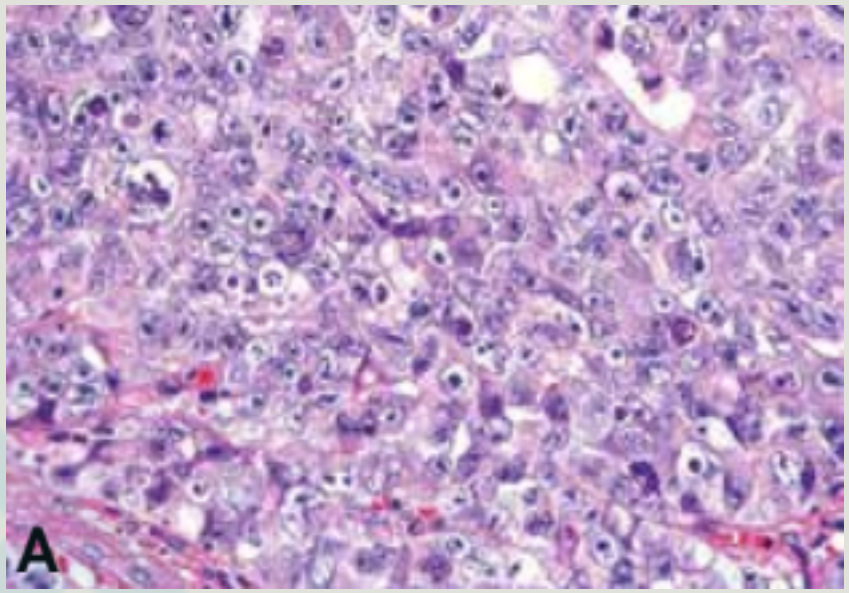
讨论1

精母细胞型精原细胞瘤最主要的诊断特征是3种细胞成分。

- 中间型细胞：中等大小，圆形，粗细不等的颗粒状染色质，有明显核仁，胞浆嗜酸，很少出现细胞拥挤及囊泡（6%）。
- 具有这种类型细胞的肿瘤在文献中被称为“间变型”。由于与胚胎癌相似，因此是一种诊断上的陷阱。

讨论2

精母细胞型精原细胞瘤和胚胎性癌



鉴别要点：

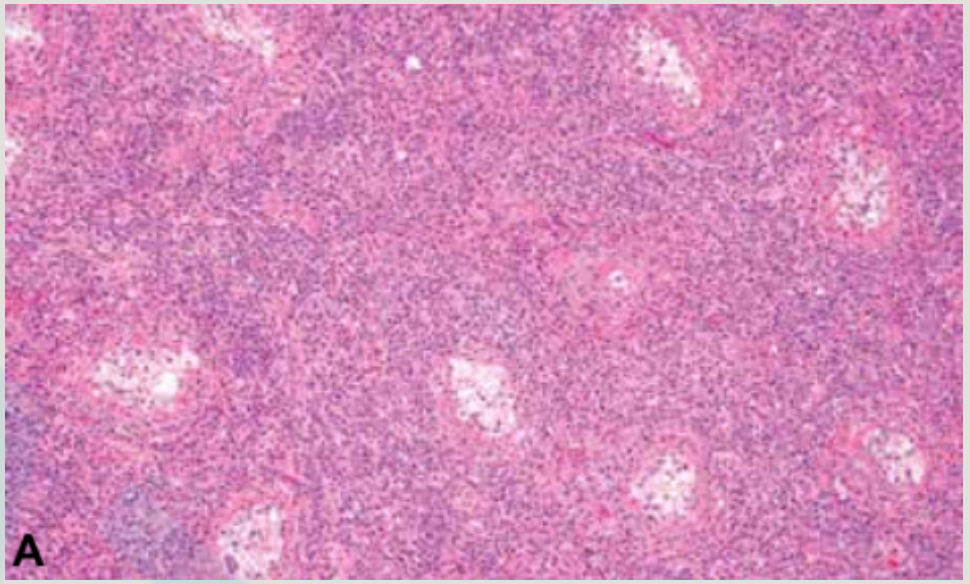
- ✓精母细胞型精原细胞瘤3种细胞成分，中间型细胞大小一致，核圆形，胚胎性癌细胞多形且拥挤，细胞界限不清，核仁明显，染色质嗜酸或嗜碱。
- ✓ 胚胎性癌 大多数CD30 and OCT3/4 (POU5F1) 阳性。

讨论2

精母细胞型精原细胞瘤	经典型精原细胞瘤
➢片状或结节状生长，被宽且水肿的纤维组织分隔开。 ➢肿瘤结节之间没有睾丸间质残留 ➢少数病例肿瘤结节周围可见纤维蛋白带 ➢少数病例肿瘤结节周围的纤维带内可见淋巴细胞浸润和肉芽肿反应。 ➢三种细胞成分 ➢PLAP少量阳性	➢被纤细的纤维分隔成片状、条索状或柱状 ➢显著的淋巴细胞浸润和肉芽肿性炎症 ➢肿瘤细胞形态一致 ➢PLAP阳性

讨论2

精母细胞型精原细胞瘤和淋巴瘤



鉴别要点：

- ✓精母细胞型精原细胞瘤通常累及单侧睾丸，既有管内生长，又可以出现管间生长，大细胞成分可以见到丝球状染色质。
- ✓淋巴瘤通常累及双侧睾丸或多灶发生，瘤组织围绕生精小管在间质内生长，引起生精功能障碍、间质纤维化、小管透明变性和消失。没有丝球状的染色质。

小结

1 作者总结了大量精母细胞性精原细胞瘤的形态学特征。强调了在低倍镜下观察到的一系列表现，包括多结节状、纤维组织带、弥漫的假腺样结构等。

2 大多发生在老年男性，但本文研究结果显示多发生于相对年轻的患者；

3 鉴别诊断：经典型精原细胞瘤、胚胎性癌、淋巴瘤

THANKS