

## Images in hematology-oncology

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### A palpable breast mass in a 34-year old woman

A 34-year old woman presented with palpable mass in the upper outer quadrant of the right breast. The woman's previous medical history was not available.

Macroscopically the lesion was a well circumscribed, nodular mass which was 8.5 cm in diameter. The cut surface was cream colored, fibrous with multiple cysts. There was no evidence of necrosis or hemorrhage.

The histological examination revealed a tumor which was composed of fibrous stroma, containing non-vascular slit-like spaces. These spaces were lined with endothelial-like spindle cells and didn't contain any proteinaceous material or red blood cells. Neither stromal nor epithelial cells showed atypia. Immunohistochemically these cells expressed CD34. In the stroma there were interlacing fascicles of spindle cells which had eosinophilic cytoplasm. Immunohistochemically, they showed desmin expression. The dilated cysts were lined with columnar cells with apical snouts.

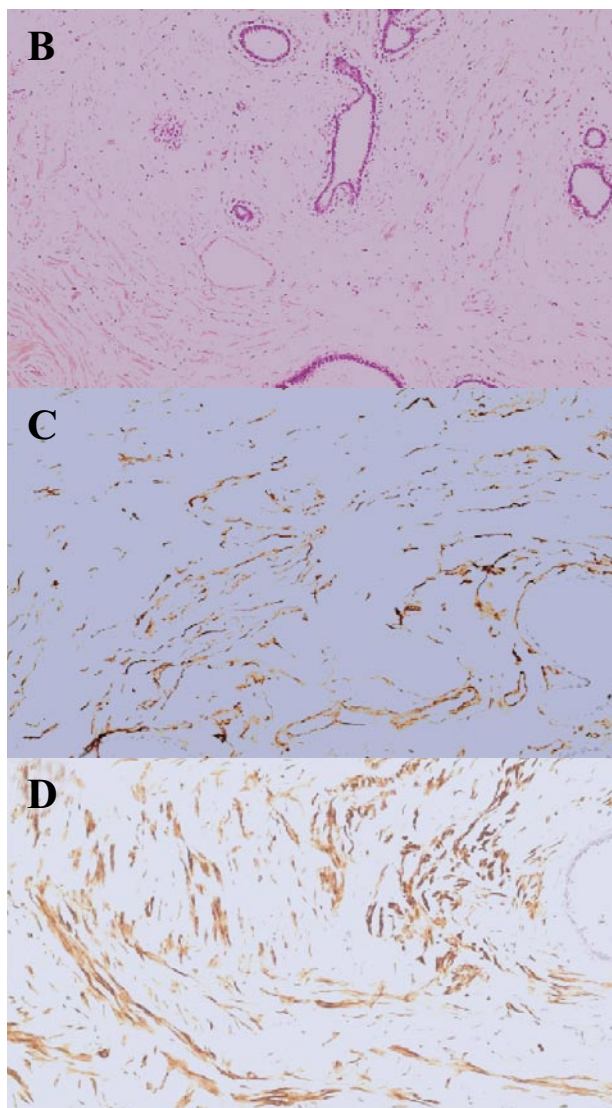
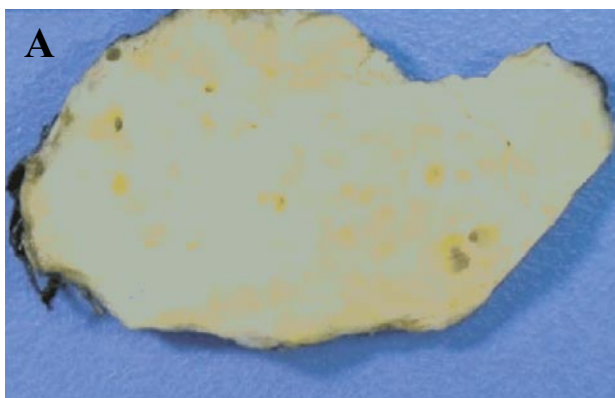


Fig 1 (A&B&C&D). (A): Macroscopic picture of the mass; (B): Microscopic photomicrograph showing slit-like spaces lined by spindle cells; (C): CD34 and (D): desmin expression in the lesion

**What is your diagnosis?**

## **PATHOLOGIC DIAGNOSIS**

Nodular pseudoangiomatous stromal hyperplasia (PASH) of the breast.

## **DISCUSSION**

Pseudoangiomatous stromal hyperplasia (PASH) of the breast is a benign proliferation of mesenchymal cells with irregular slit-like formations. The term is proposed to emphasize the fact that the histological pattern mimics a vasoformative proliferation (1).

The age at diagnosis ranges from teenage to 50s (1). The nodular PASH is typically well circumscribed and the cut surface is pale, fibrous and homogenous. Macroscopically, nodular PASH is usually indistinguishable from

fibroadenoma ranging in size from 2 to 15 cm (1). Histologically, PASH can be mistaken for a low-grade angiosarcoma but it can be distinguished by its growth pattern and cytological features (2).

The origin of the cells which line up the slit-like spaces is thought to be myofibroblasts. Therefore in addition to CD34, positivity for smooth muscle actin, desmin and calponin can be detected in these cells.

PASH can be identified in diffuse form or nodular form. Microscopic foci of PASH can be identified in up to 23% of breast biopsies obtained for benign or malignant conditions (3). Most of the nodular cases are detected in premenopausal women suggesting that hormonal factors may play a role in its development.

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## **References**

1. Rosen PP. Rosen's Breast Pathology, Lippincott Williams and Wilkins, 2009
2. Tavassoli FA, Devilee P. WHO Pathology and Genetics: Tumours of the Breast and Female Genital Organs. IARC-Press, Lyon 2003.
3. İbrahim RE, Sciotto CG, Weidner N. Pseudoangiomatous hyperplasia of mammary stroma. Some observations regarding its clinicopathologic spectrum. *Cancer* 1989;63:1154-60.