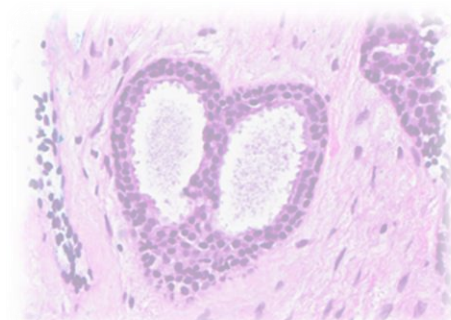
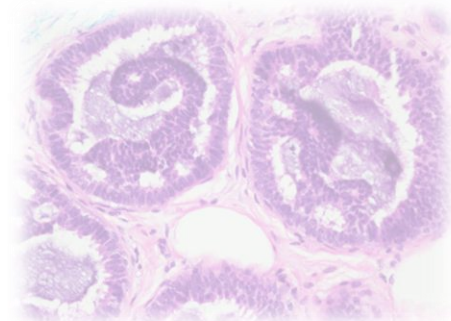
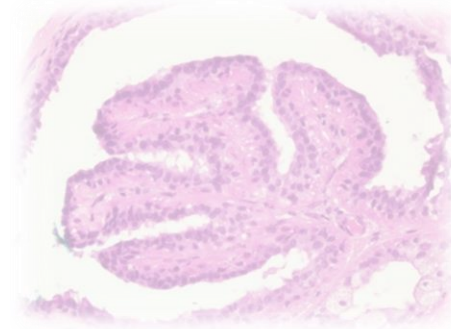
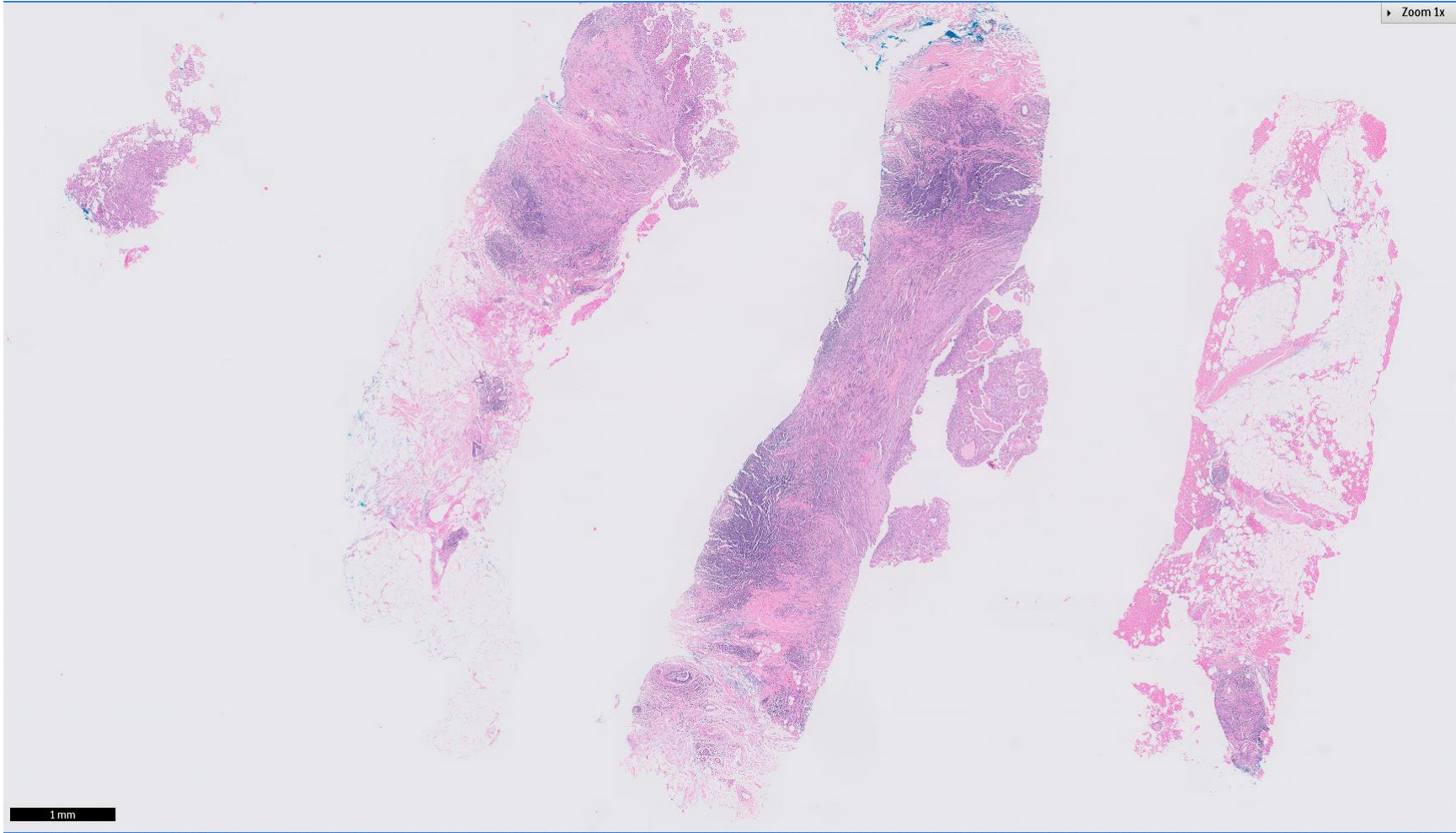


## Case 17

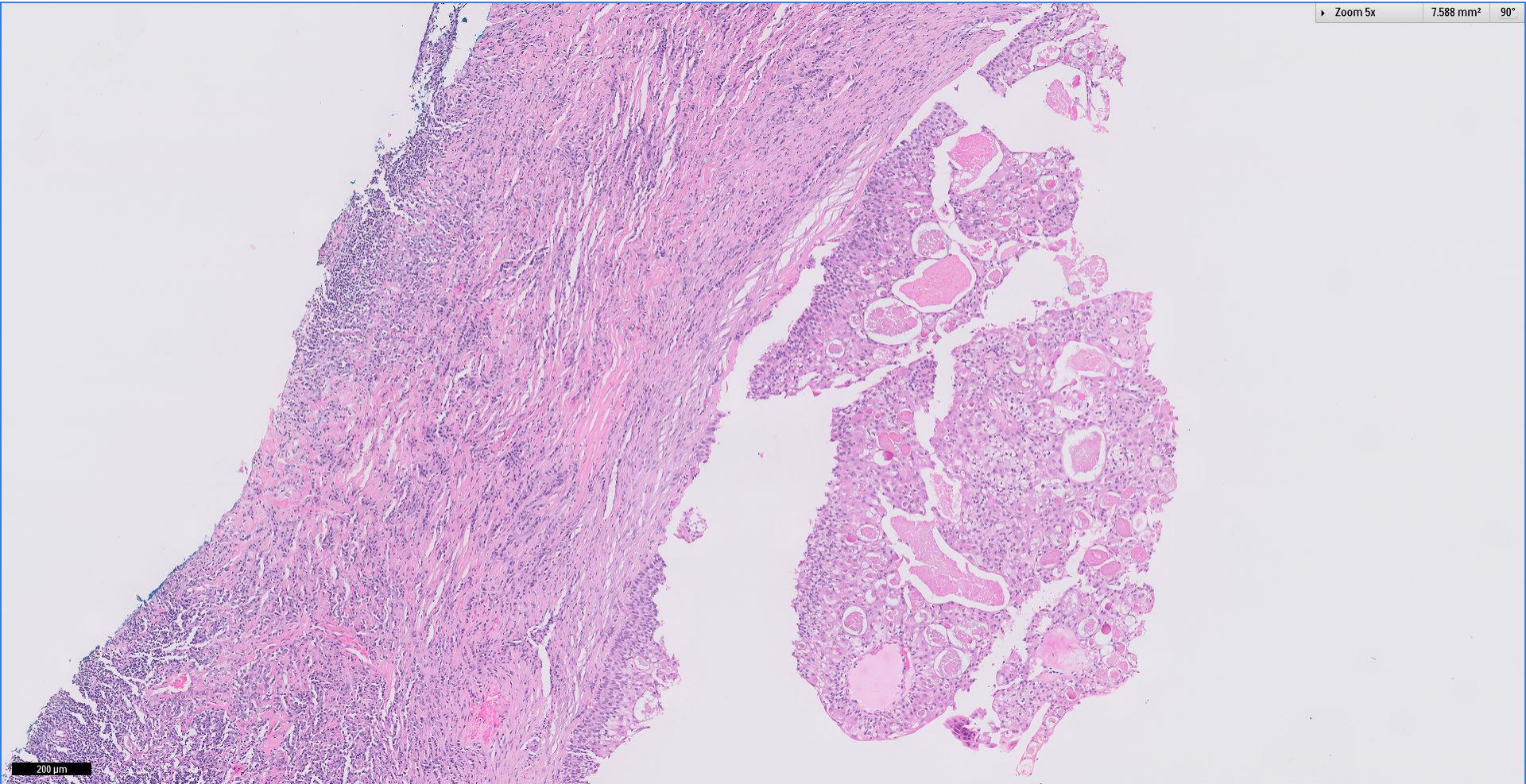
44 year old Chinese female.  
Left breast 10 o'clock nodule.  
Core biopsy (A) and subsequent  
excision (B).



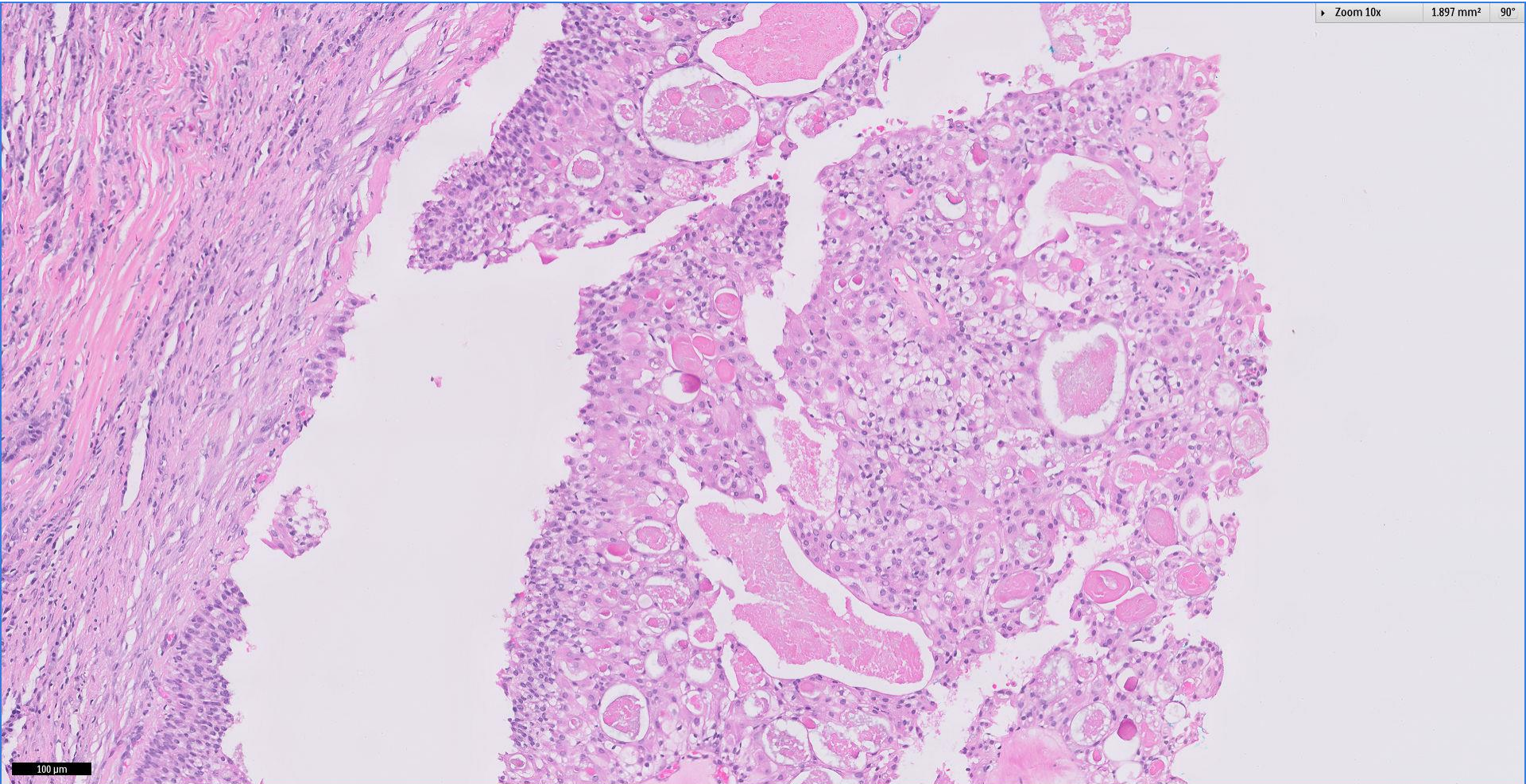
# Core biopsy (A)



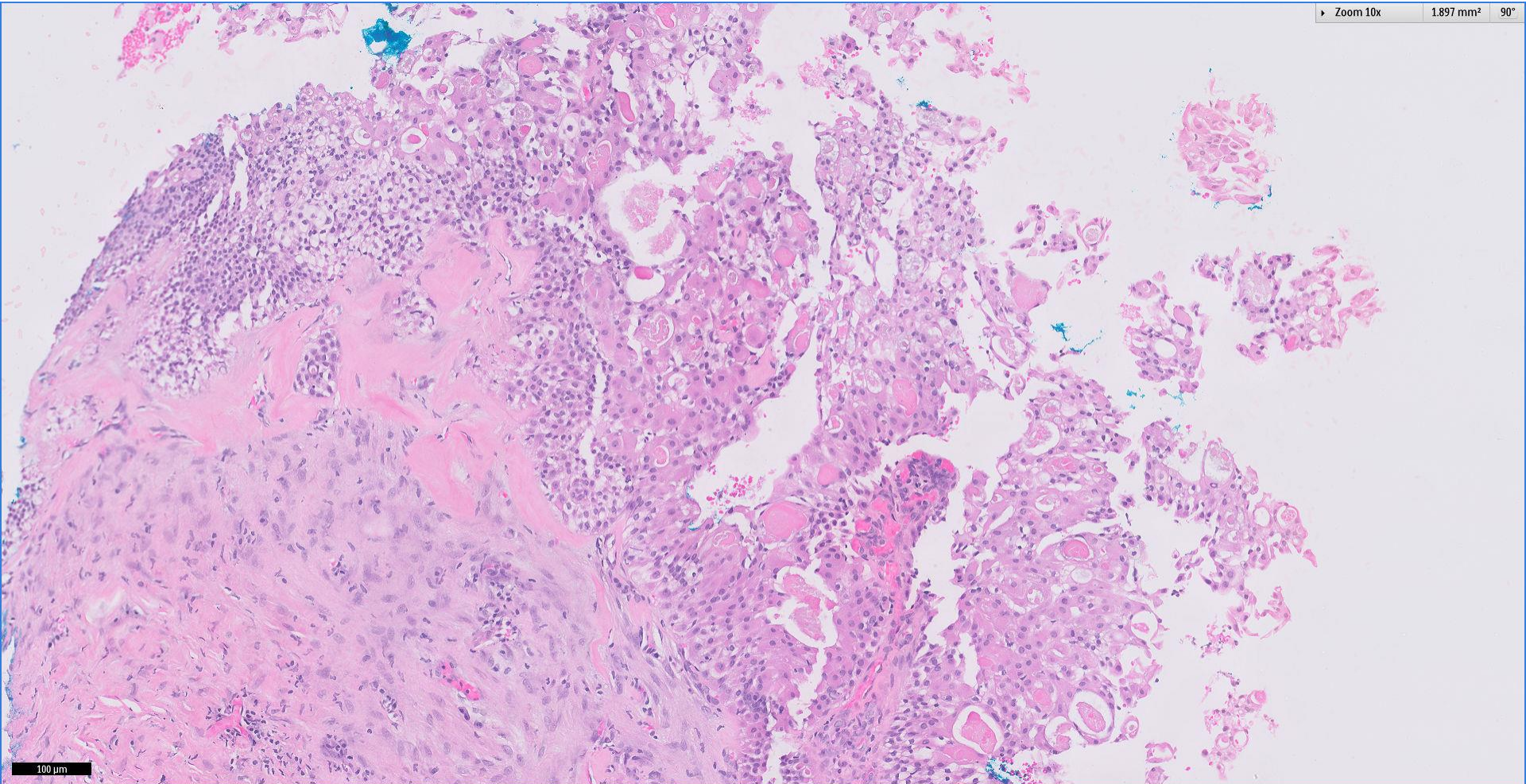
# Core biopsy (A)



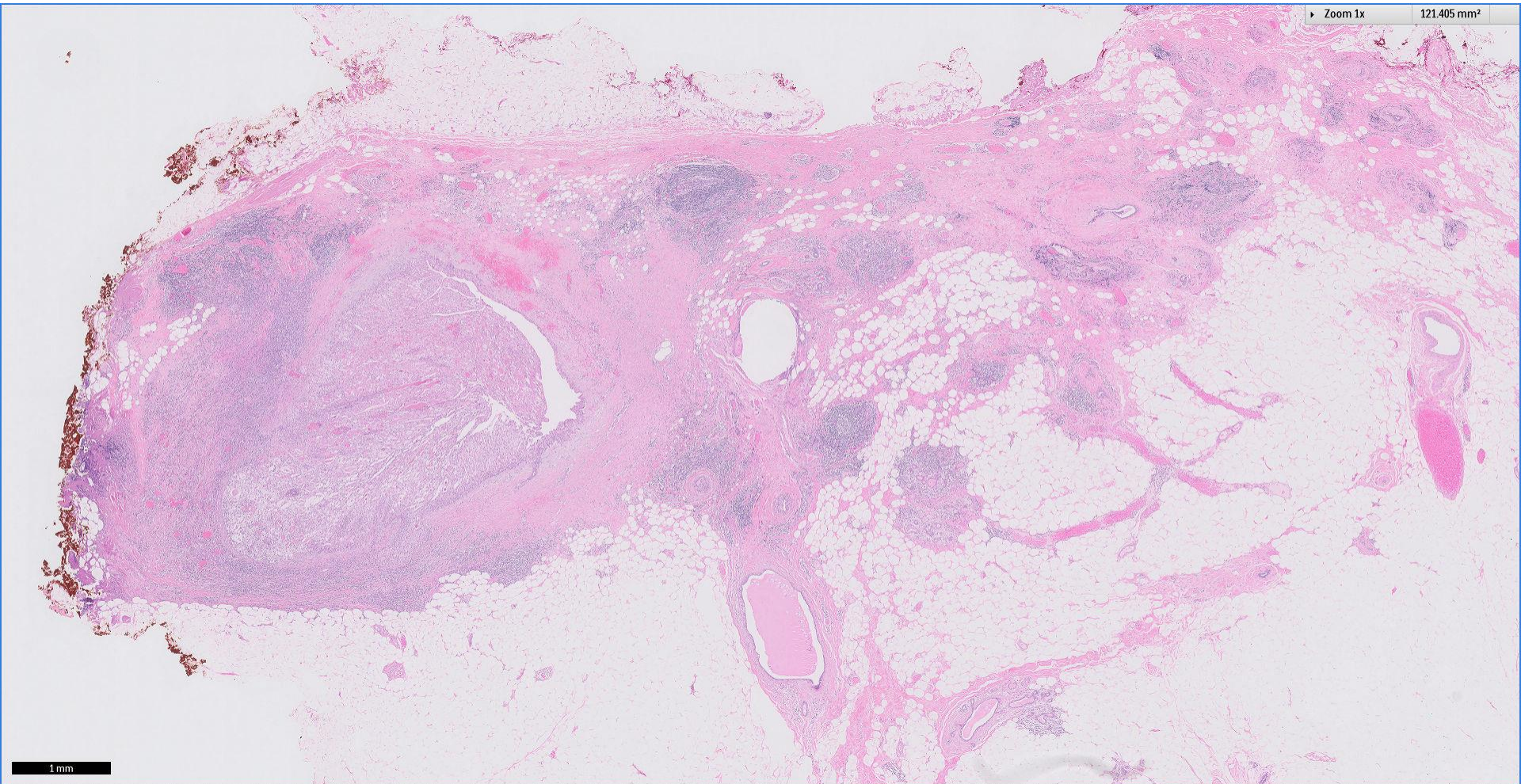
# Core biopsy (A)



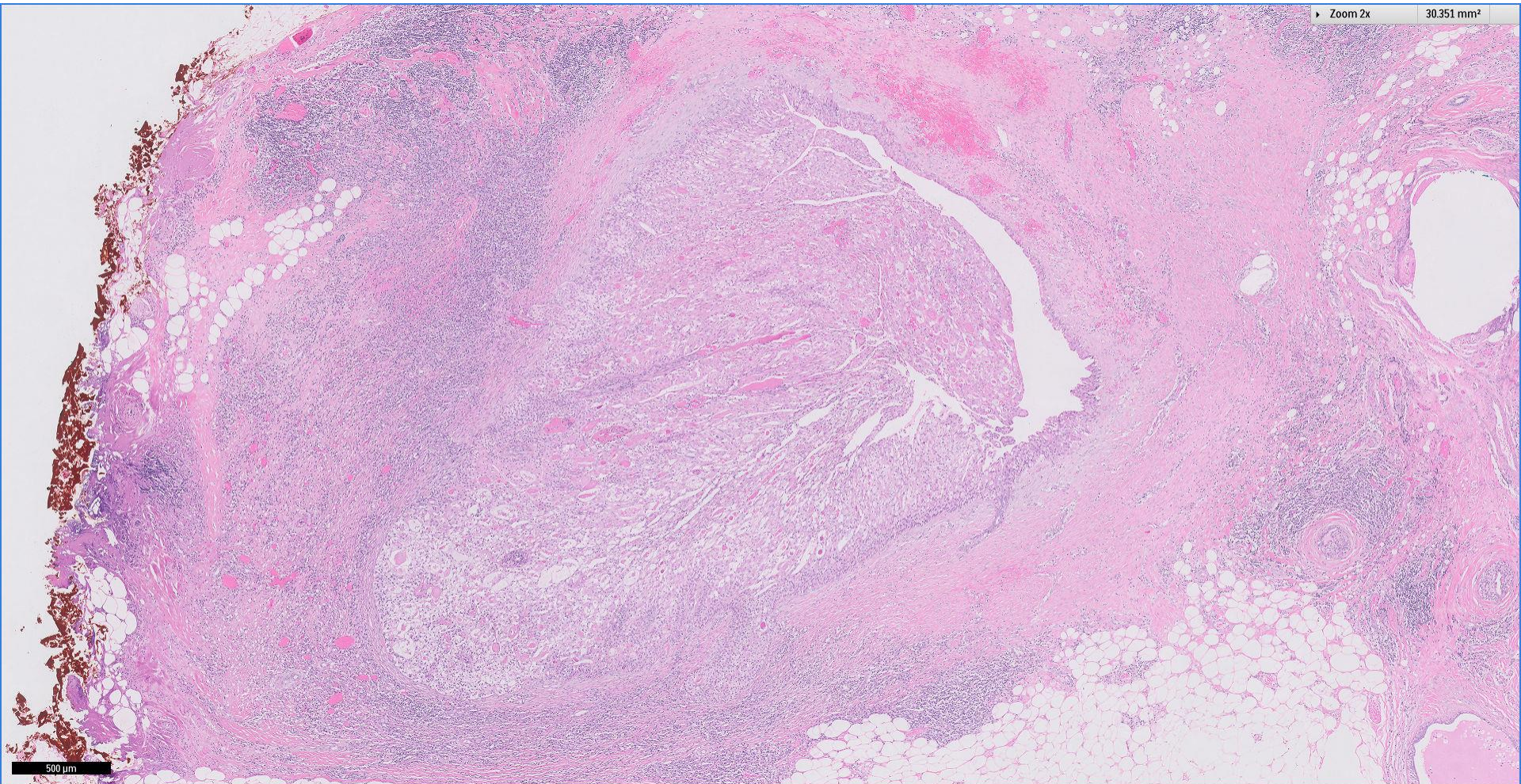
# Core biopsy (A)



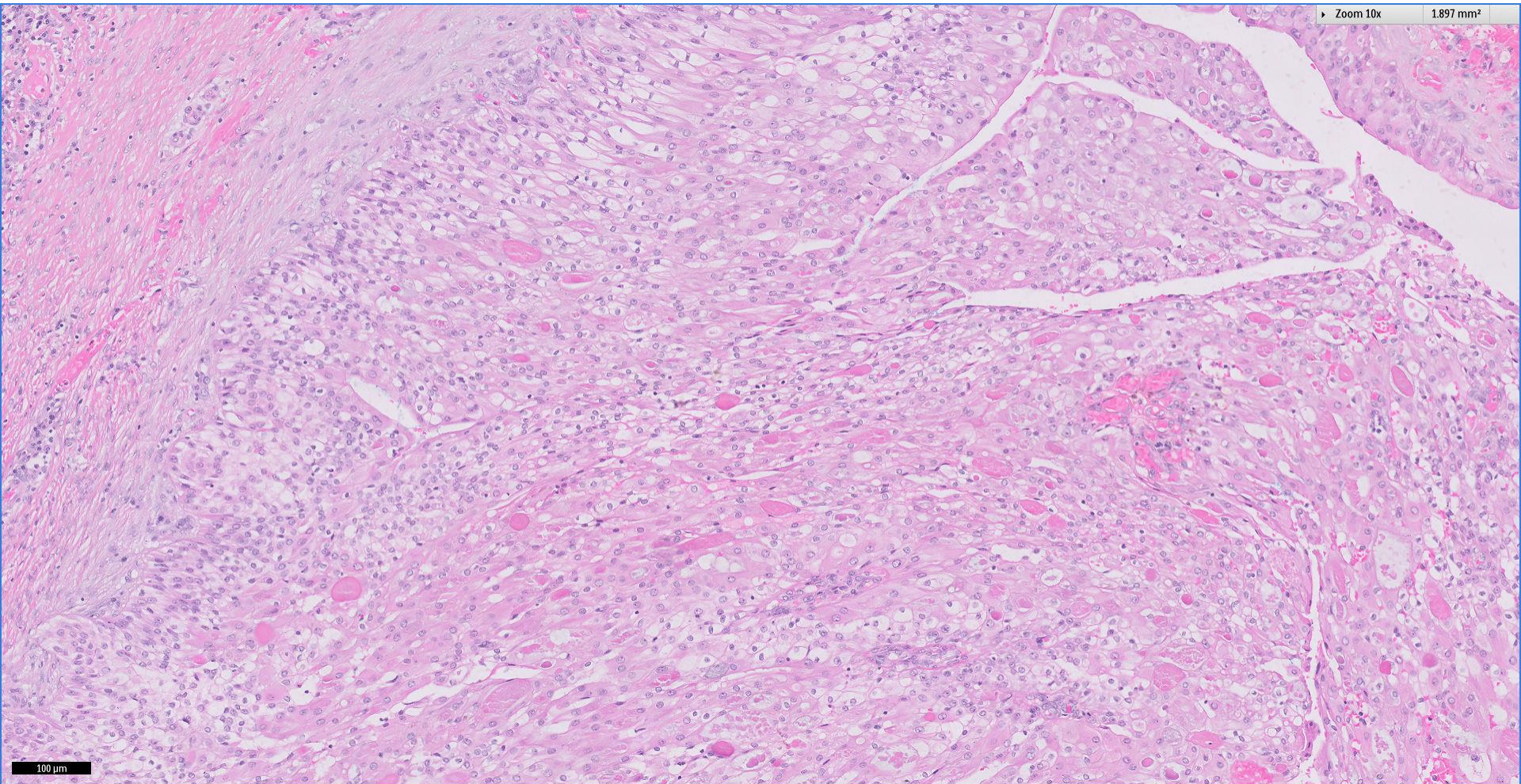
# Excision biopsy (B)



# Excision biopsy (B)

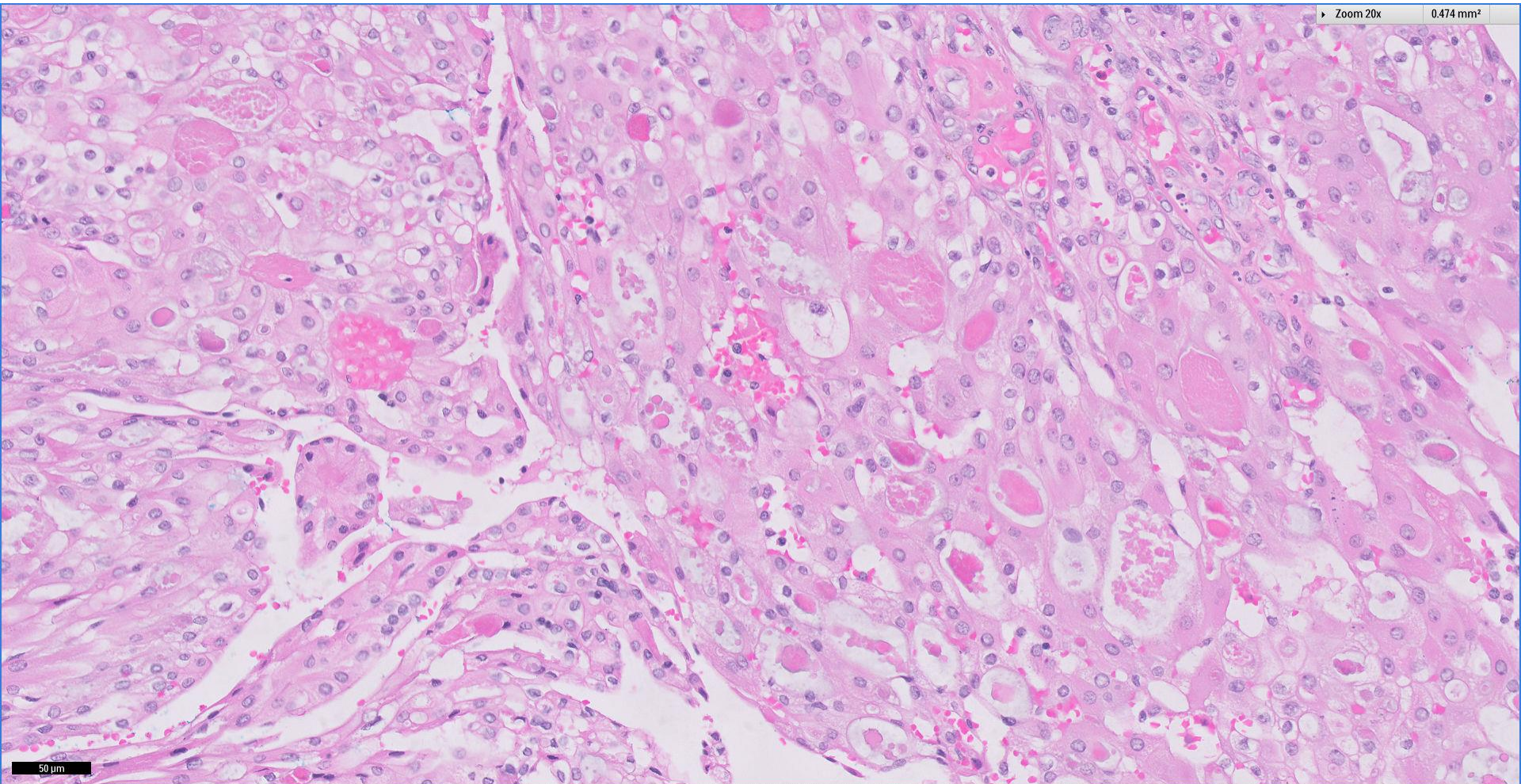


# Excision biopsy (B)



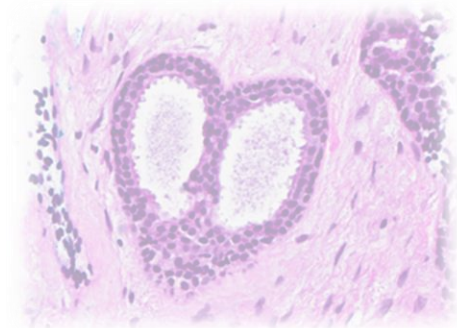
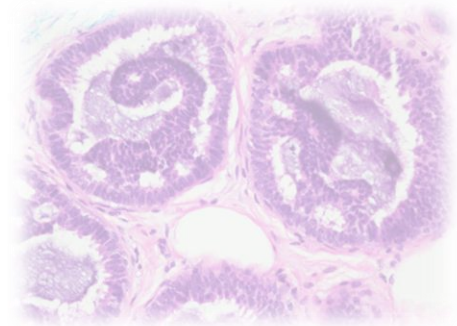
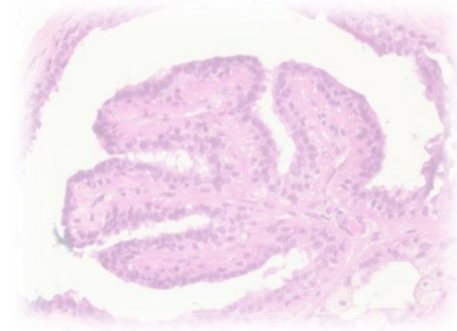


# Excision biopsy (B)



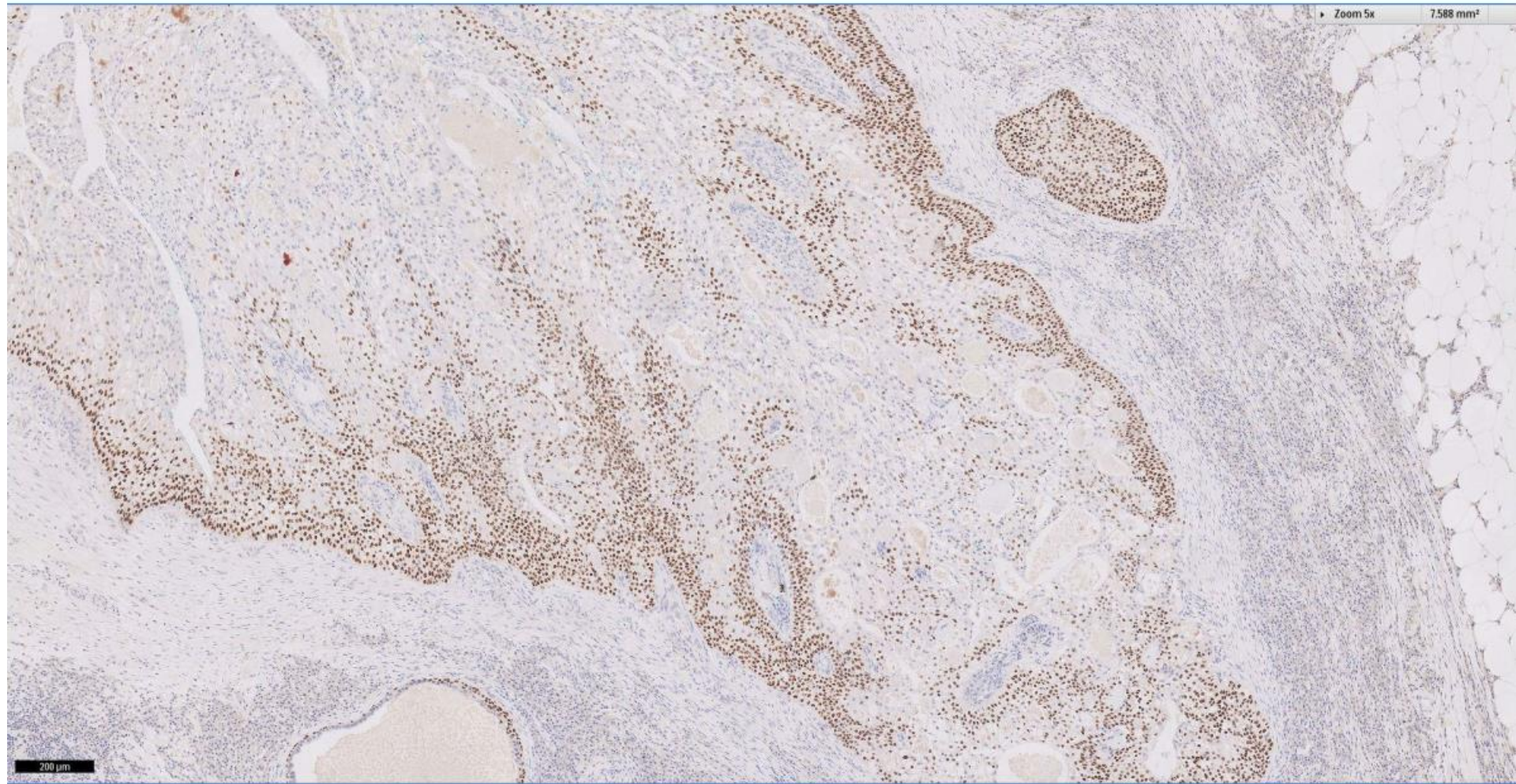
Division of Pathology  
Singapore General Hospital



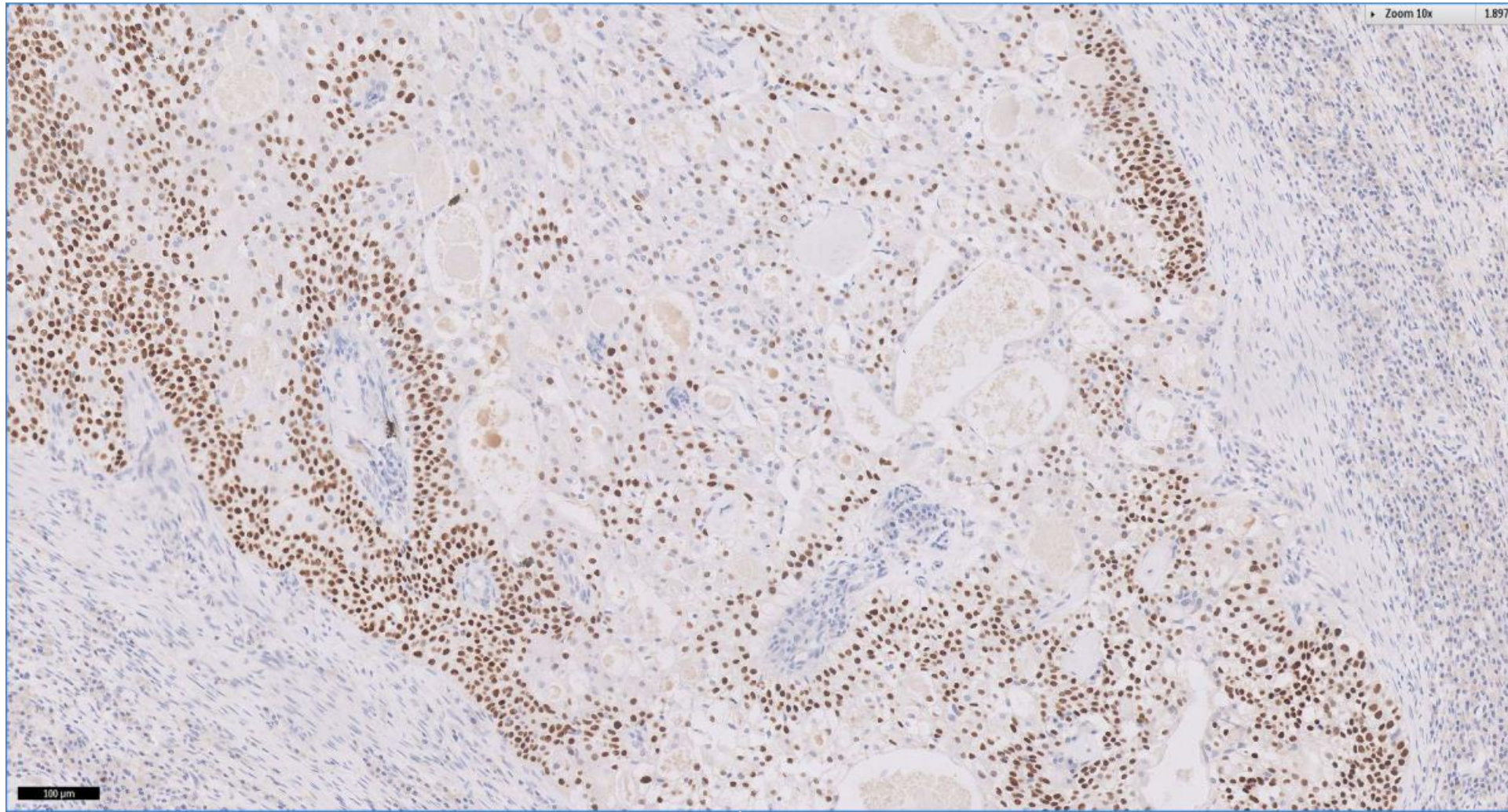


# *Additional pictures*

p63



p63

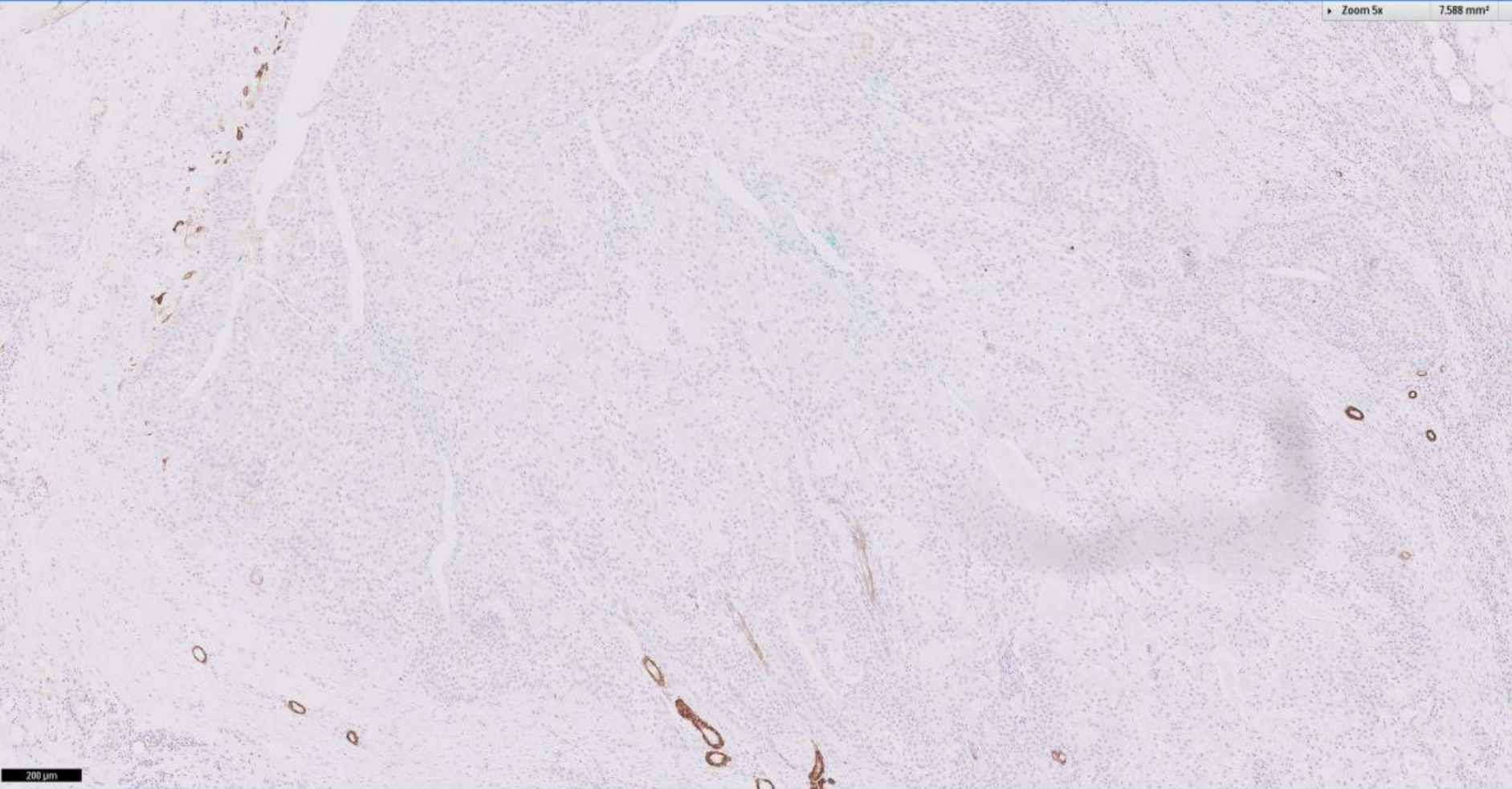


Division of Pathology  
Singapore General Hospital



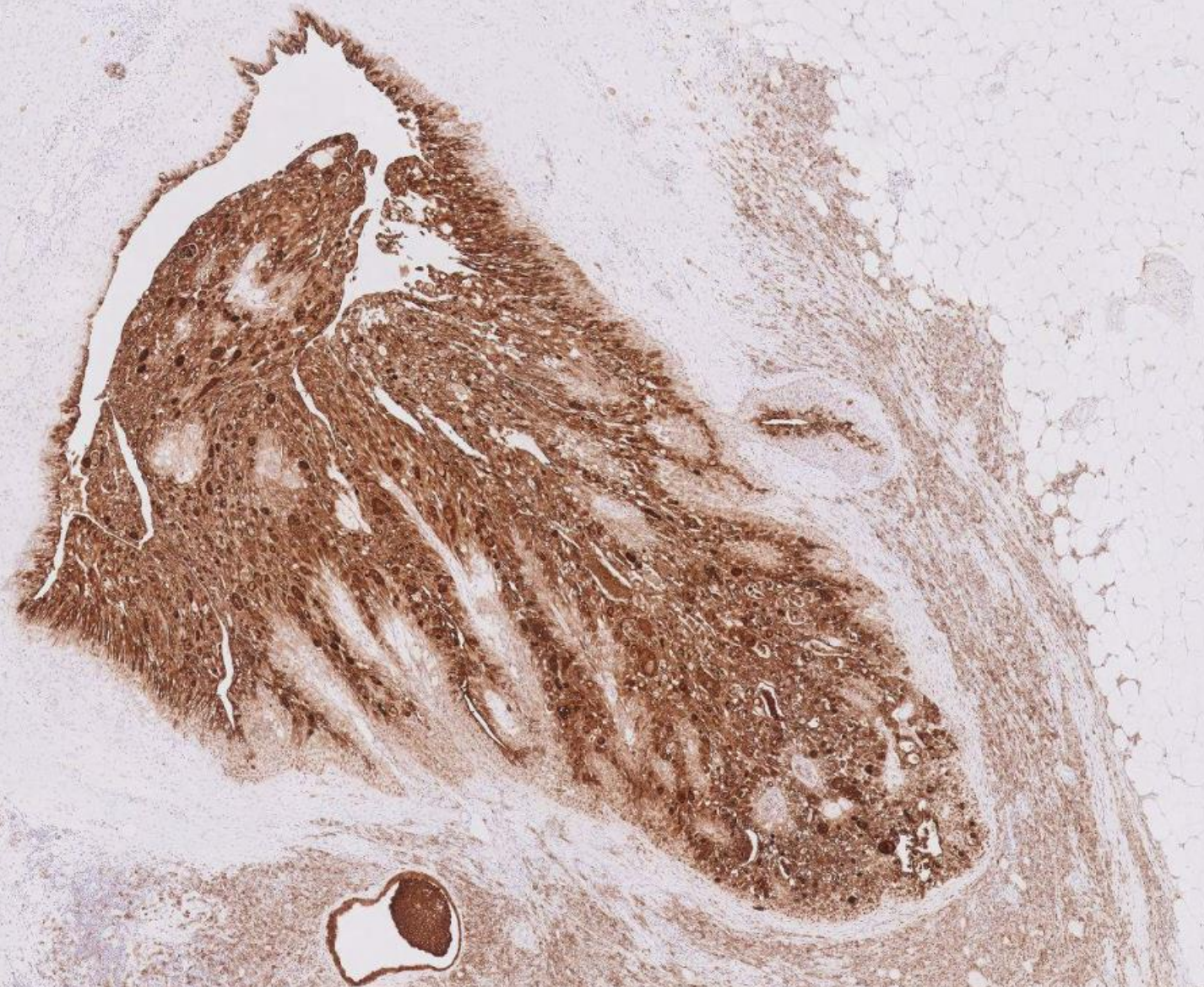
# SMMS

Zoom 5x 7.588 mm<sup>2</sup>

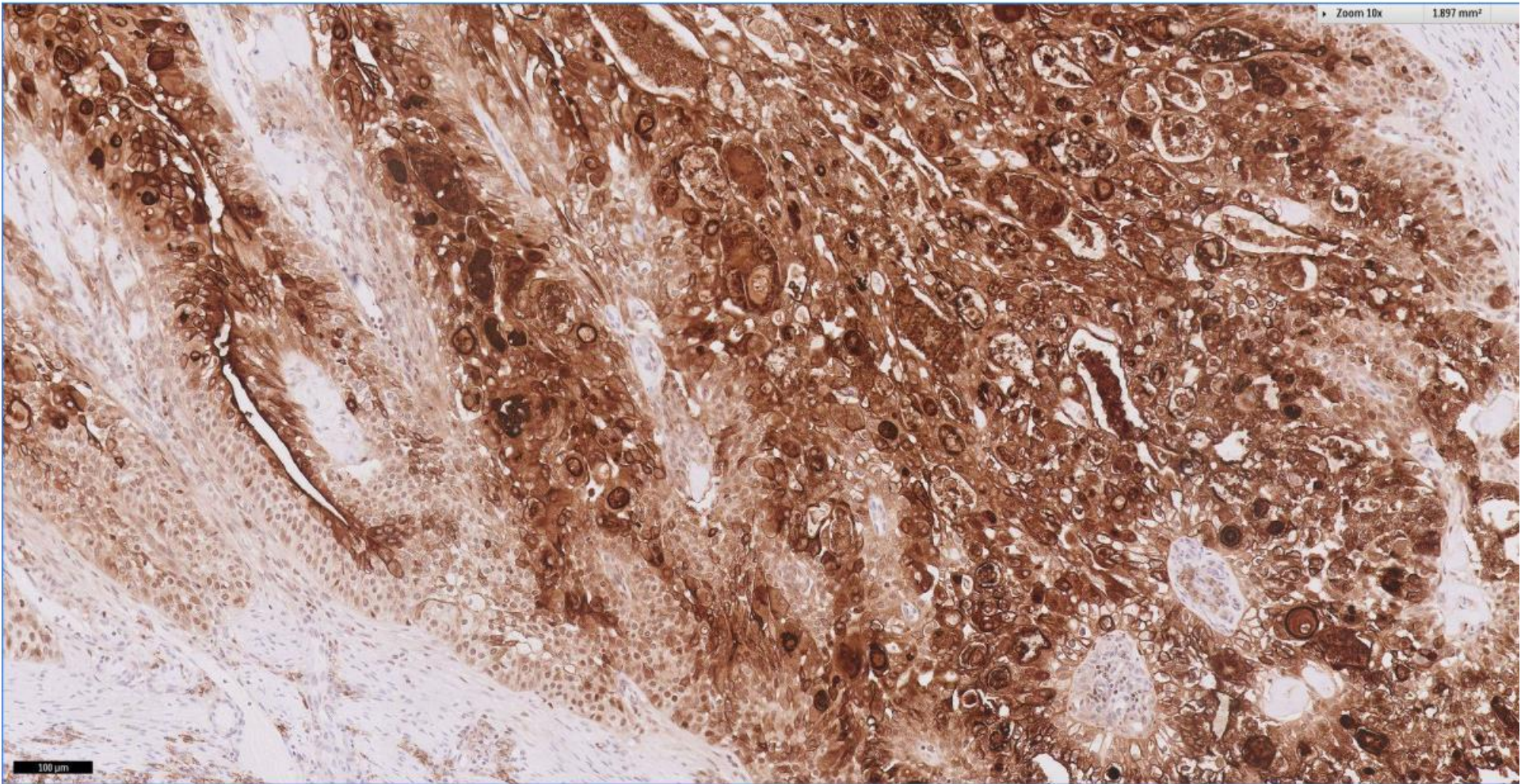


200  $\mu$ m

EMA

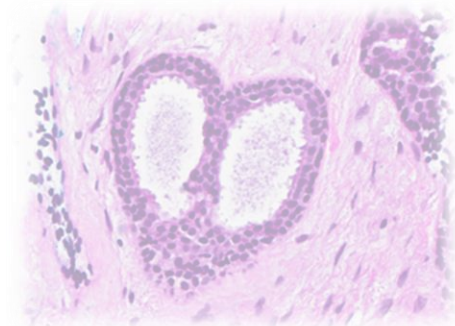
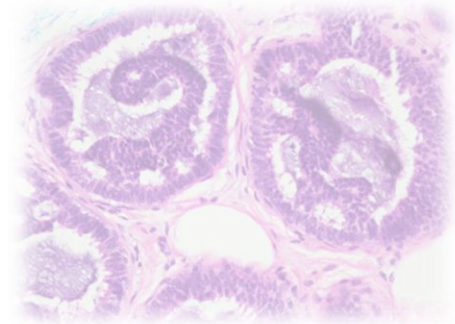
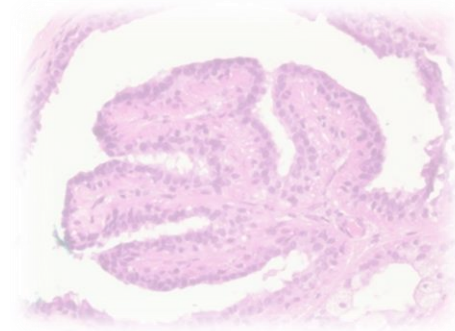


EMA



# Diagnosis, case 17

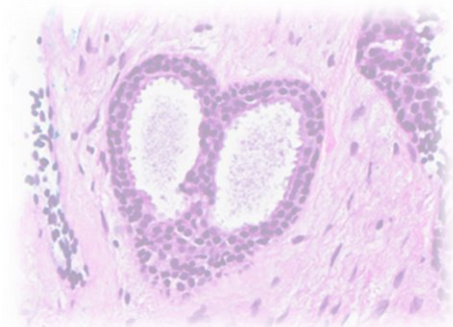
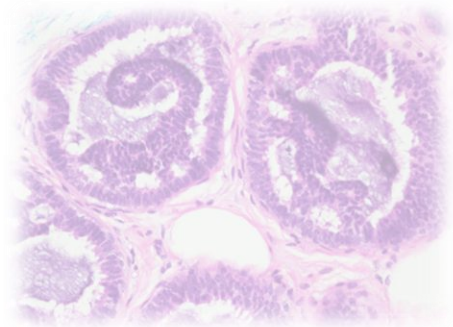
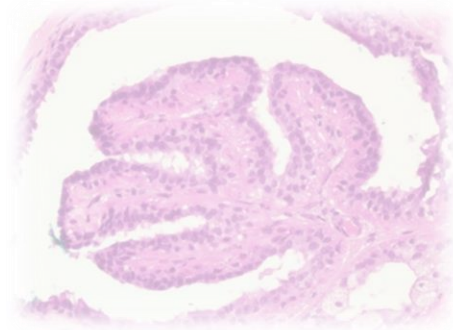
- Left breast 10 o'clock nodule, core biopsy and subsequent excision:  
Intraductal solid-papillary neoplasm, suggestive of nodular (clear cell) hidradenoma.





# *Nodular hidradenoma*

- Regarded as an eccrine sweat gland tumour.
- Two histogenetic origins ~
  - Skin adnexal glands.
  - Mammary ducts.
- Benign tumour.



*Pathology International* 1998; **48**: 907–911

Case Report

# **Nodular hidradenoma of the breast: Report of two cases with literature review**

**Hideharu Domoto, Shintaro Terahata, Kimiya Sato and Seiichi Tamai**

*Department of Laboratory Medicine, National Defense Medical College, Tokorozawa, Japan*

*Pathology International* 1998; **48**: 907–911

**Two cases of nodular hidradenoma of the breast with possibly different origins are reported. Case 1 is of a 58-year-old female with a breast mass in the left, outer lower-quadrant. A histogenetical origin in the skin adnexal glands was suspected due to its superficial location and immunohistochemical findings. Case 2 is of a 44-year-old male with a subareolar nodule and nipple discharge. Histological examination demonstrated that the tumor was located deep in the breast tissue, was surrounded by dilated mammary ducts and exhibited intraductal extensions, which are all features mimicking those of breast cancer. Immunohistochemical positivity against gross cystic disease fluid protein-15 was weakly identified and negativity for endoplasmic reticulum was observed. This case can be interpreted as arising in the mammary ducts. It is well known that various kinds of skin adnexal tumors arise in the breast tissue; however, nodular hidradenoma of the breast is still a rare benign neoplasm. Clinically, nodular hidradenoma of the breast tends to occur in the nipple or subareolar region of the female breast. It should be kept in mind that nodular hidradenoma may occur in mammary ducts and it should be included when differential diagnoses are made of subareolar breast tumors.**

**Table 1** Review of hidradenoma of the breast

Case no.	Author, year	Sex	Age (yr)	Right or left	Location	Greatest dimension (cm)	Chief complaint
1	Fick FM, 1968 <sup>24</sup>	F	46	NS	Upper inner quadrant	4.0	Nipple discharge
2		F	61	Right	Upper outer quadrant	3.0	Breast mass
3		M	42	Left	Subareolar	2.0	Nipple enlargement
4		F	42	Left	Nipple	0.7 (Multiple)	Nipple discharge
5		F	60	NS	Subareolar	NS	Breast mass
6		F	30	Right	Nipple	1.5	Breast mass
7	Hertel BF, 1976 <sup>30</sup>	F	57	NS	Subareolar	2.0	Nipple discharge
8	Kobayashi T, 1994 <sup>4</sup>	M	63	Left	Nipple	3.0	Nipple discharge
9	Cyrlak, 1995 <sup>10</sup>	F*	25	Right	Inner quadrant	7.0	Breast mass/nipple discharge
10	Kumar N, 1996 <sup>4</sup>	F	75	Left	Upper inner quadrant	3.0	Breast mass
11	Present case 1	F	58	Left	Outer lower quadrant	3.0	Breast mass
12	Present case 2	M	44	Left	Subareolar	2.0	Nipple discharge

\* Ma.

NS, not specified.

*Pathology International* 1998; **48**: 907–911

# Skin-Type Hidradenoma of the Breast Parenchyma With t(11;19) Translocation: Hidradenoma of the Breast

Dmitry V. Kazakov, MD, PhD,\* Tomas Vanecek, PhD,\* Irena E. Belousova, MD, PhD,†  
Petr Mukensnabl, MD,\* Dagmar Kollertova, MD,‡ and Michal Michal, MD\*

**Abstract:** Skin adnexal type tumors situated in the parenchyma of the breast are very rare. We report herein a case of solid-cystic hidradenoma of the breast. The tumor was situated in the parenchyma of the breast of a 55-year-old female and showed no connection to the overlying skin on ultrasound and radiology investigations, grossly and microscopically. Histologically, the tumor was identical to its cutaneous counterpart and was surrounded by breast tissue. The neoplasm was composed of solid and cystic areas. The cystic component, which predominated in the lesion, was filled with homogeneous eosinophilic material. The solid component consisted of several nodules with vague lobulated architecture protruding into the cystic spaces. The nodules were composed of cuboidal monomorphous cells that were continuous with larger polygonal cells and rare, large mucinous cells with basophilic granular cytoplasm. Several mammary ducts in close proximity to the tumor showed features of columnar cell hyperplasia. A 120-bp *MECT1/MAML2* fusion transcript was identified by RT-PCR and subsequent sequencing technique. This t(11;19) translocation has been reported in approximately 50% of hidradenomas of the skin.

**Key Words:** cutaneous adnexal tumors, apocrine, hidradenoma, breast, primary, columnar hyperplasia, *MECT1*, *MAML2*

(*Am J Dermatopathol* 2007;29:457–461)

On closer inspection of 12 cases of (nodular) hidradenoma of the breast that we found in the literature,<sup>34–39</sup> only two of them (excluding the malignant tumor reported as malignant eccrine acrospiroma<sup>37</sup>) were most likely primary breast neoplasms.<sup>34,39</sup> We report herein a new case of hidradenoma of the breast that, albeit relatively superficially situated in the breast parenchyma, showed no connection to the overlying skin. This tumor was accompanied by columnar cell lesions in the surrounding breast tissue, a feature not previously reported (to our knowledge) in skin-type hidradenomas involving the breast. In addition, the neoplasm harbored a t(11;19)(q21;p13) translocation attributable to fusion of the mucoepidermoid carcinoma translocated 1 (*MECT1*) gene and mastermind-like 2 (*MAML2*) gene, a feature found in approximately 50% of hidradenomas of the skin.<sup>40,41</sup>

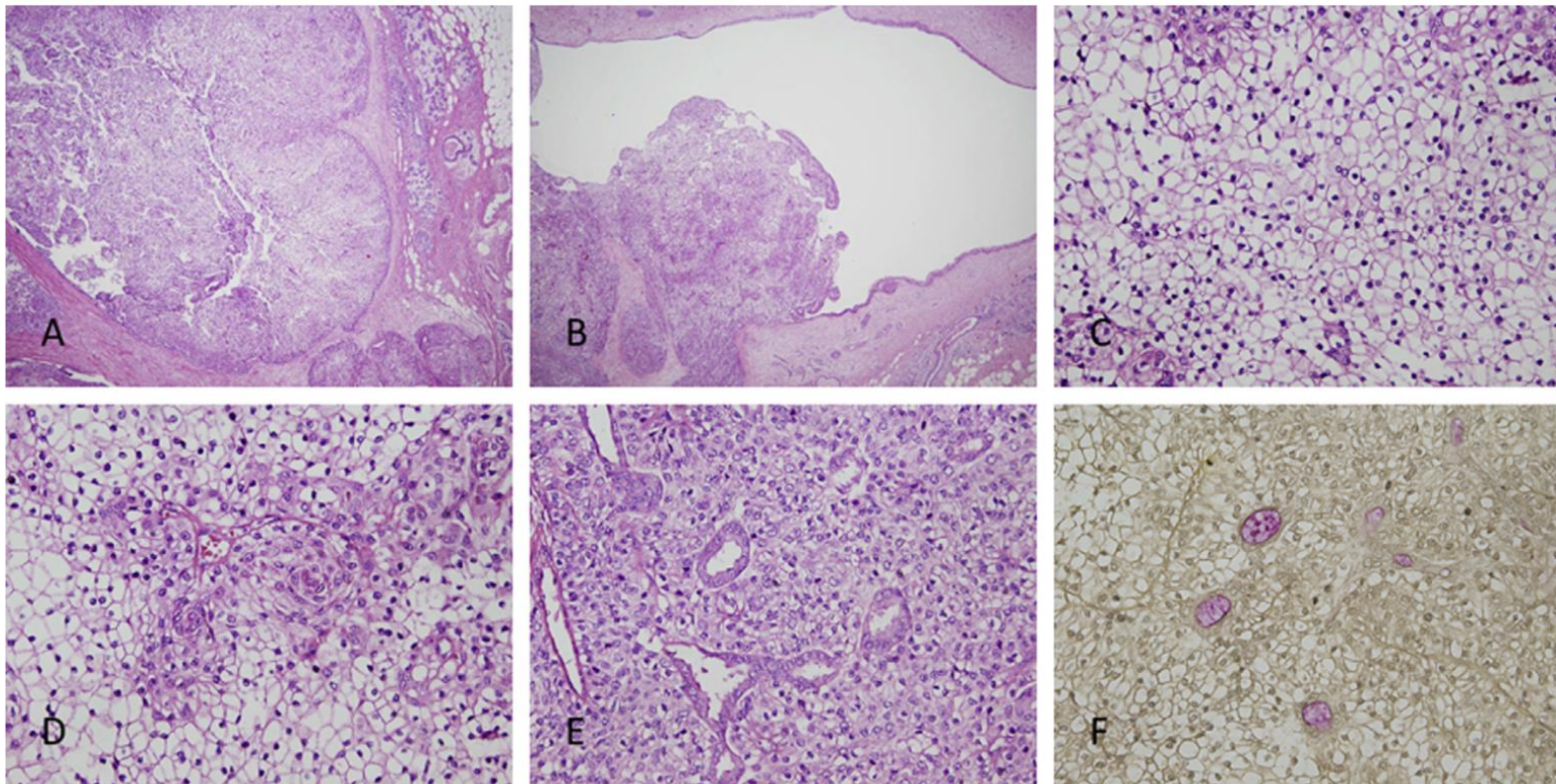
## CASE REPORT

A 55-year-old female presented with a palpable nodule in her left breast that she had been aware of for approximately 6 months. No nipple discharge was reported. Clinical examination revealed an intramammary asymptomatic infiltrate in the upper-outer-quadrant palpable near the areola of the left breast. The overlying skin was unremarkable, and there was no axillary lymphadenopathy. Ultrasound investigation revealed a 10 × 6-mm hyperechoic solid area

## Clear cell hidradenoma of the breast with *MAML2* gene rearrangement



<sup>1</sup>Department of Pathology, National Taiwan University Hospital and National Taiwan University College of Medicine, <sup>2</sup>Graduate Institute of Pathology, National Taiwan University College of Medicine, and <sup>3</sup>Department of Surgery, National Taiwan University Hospital and National Taiwan University College of Medicine, Taipei, Taiwan



**Fig. 1** (A) The tumour was multilobulated and separated by fibrous stroma; (B) focal cystic changes were not uncommon; (C) clear cells had abundant clear cytoplasm, small round nuclei, and well-defined cell borders; (D) squamoid cells had pale eosinophilic cytoplasm and were arranged in whorls; (E) basophilic ductal cells formed ducts and tubules interspersed in the clear cells; (F) mucin in ductal spaces was detected by mucicarmine stain.

*Thank You*