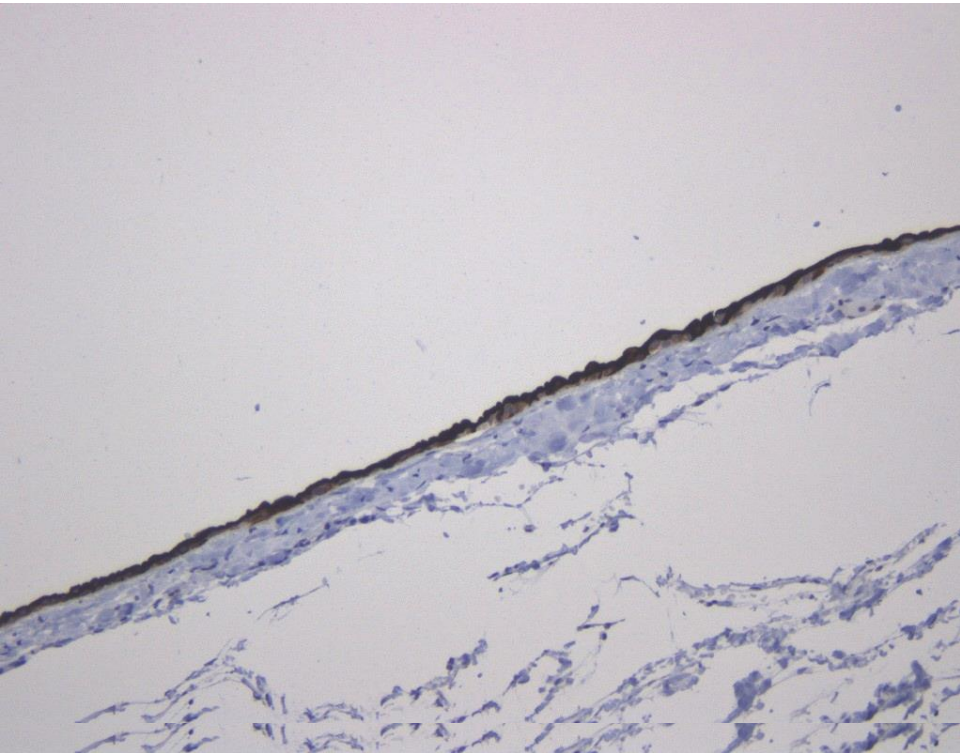


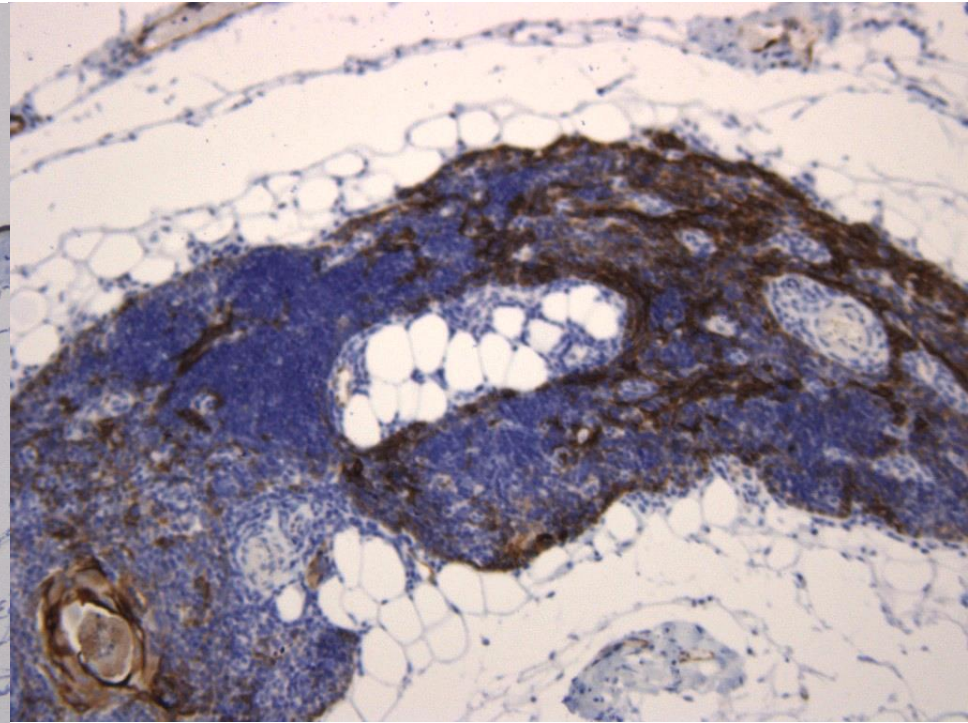
# Differential Diagnosis

- 1) **Thymic cyst**
- 2) **Broncogenic cyst**
- 3) **Mullerian cyst**
- 4) **Benign serous cyst**
- 5) **Pericardial cyst**
- 6) **Others**

# Cytokeratin 7

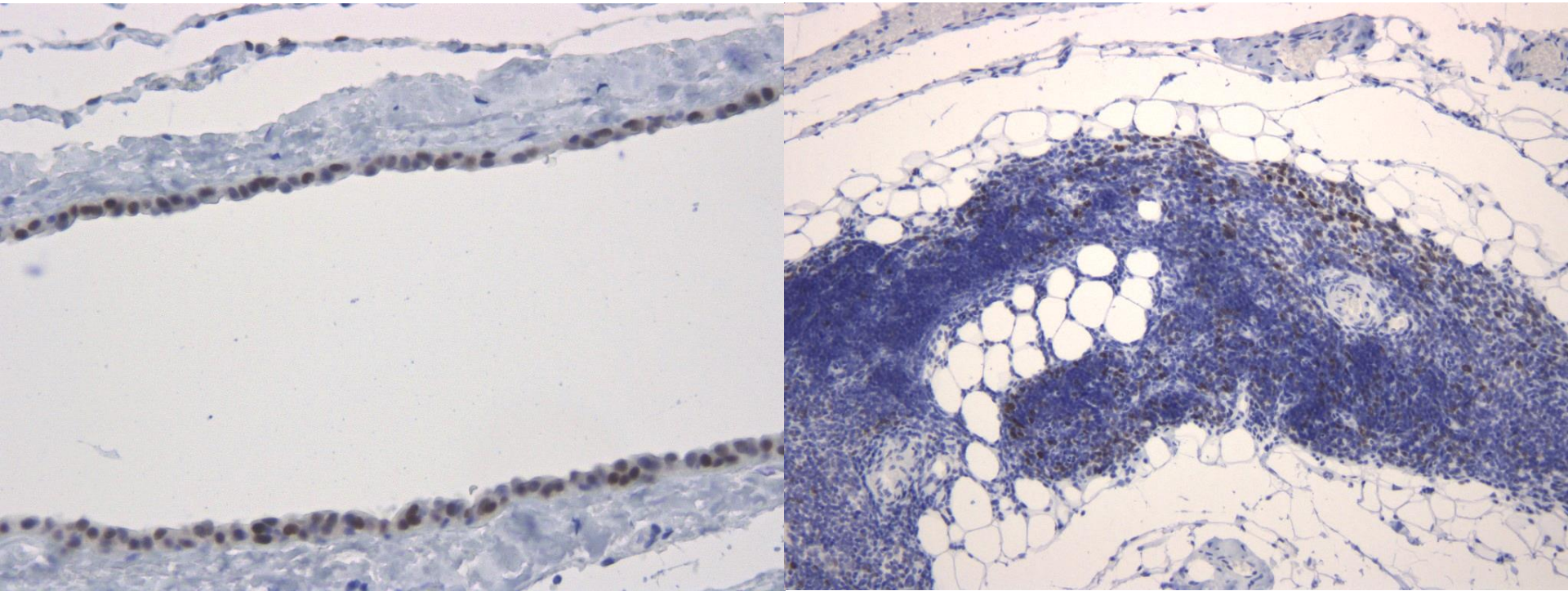


囊胞



正常胸腺

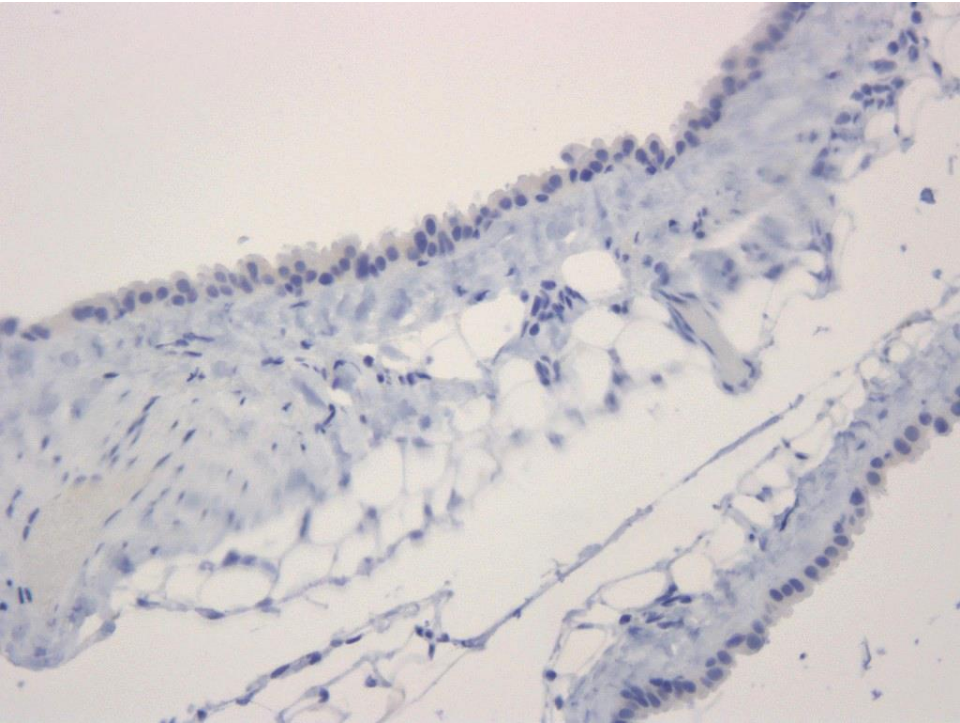
# ER



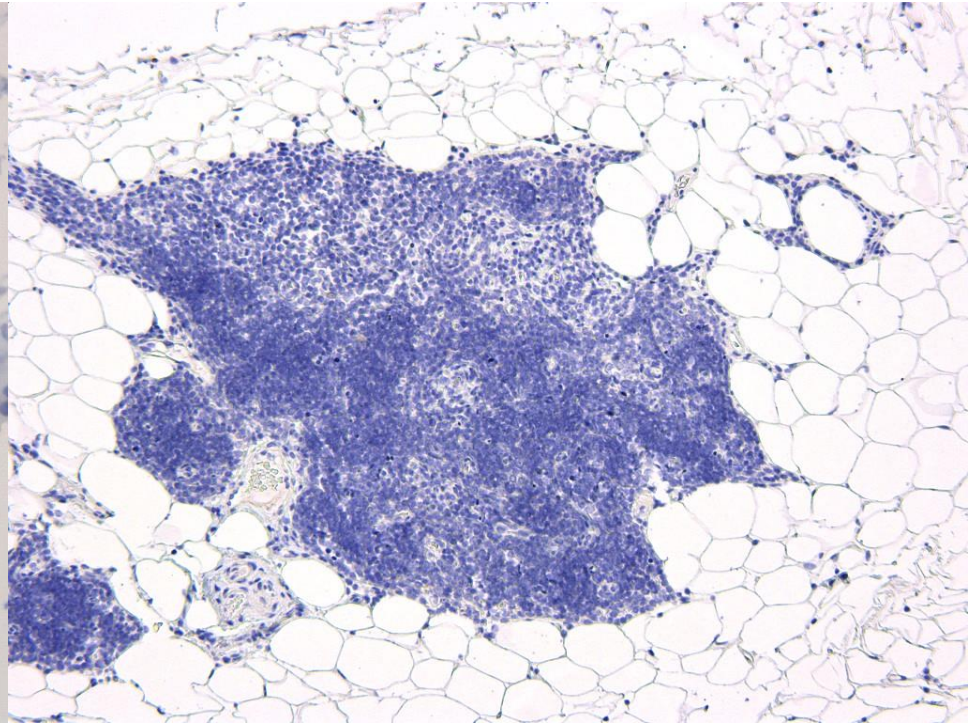
囊胞

正常胸腺

# PgR



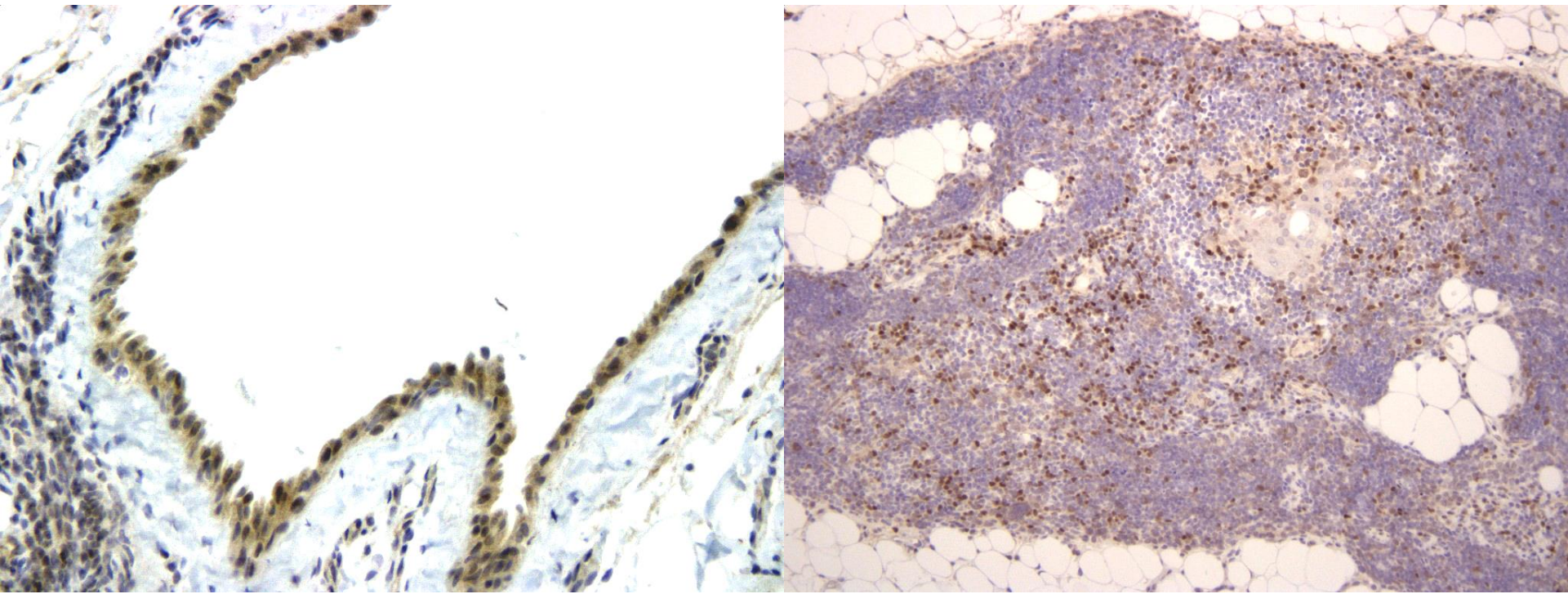
**囊肿**



**正常胸腺**



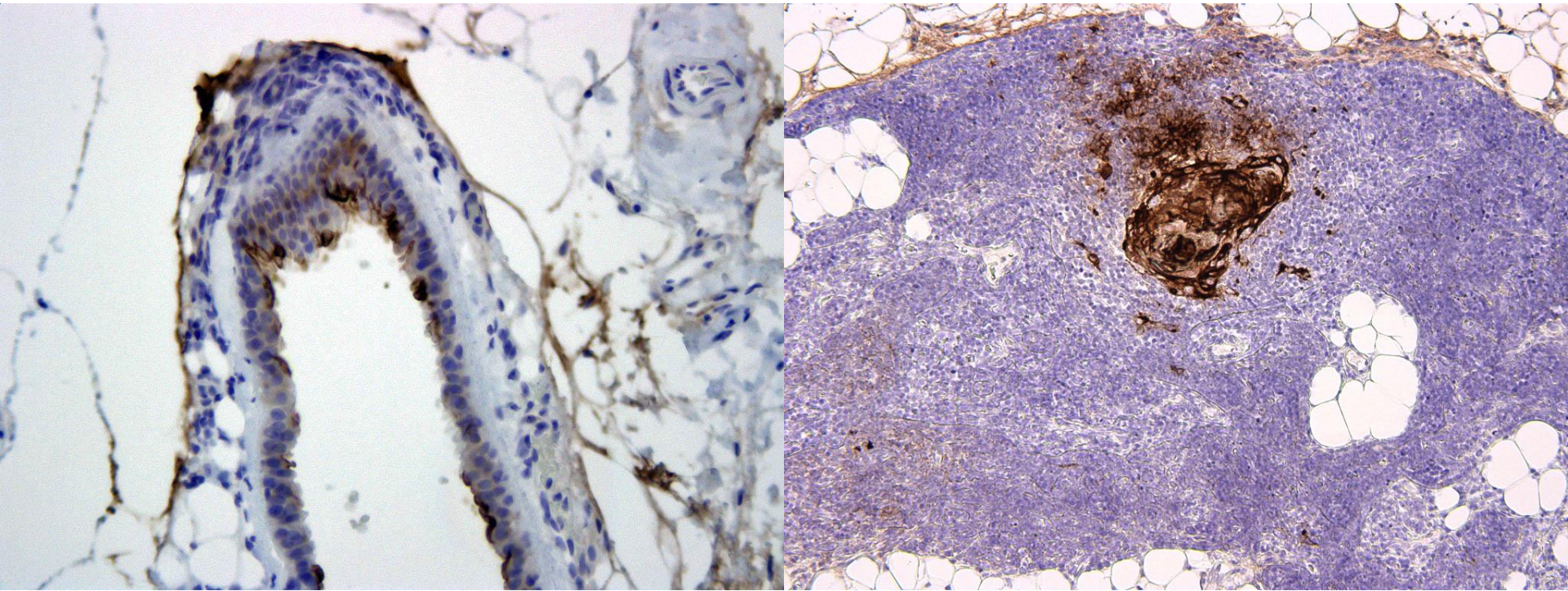
# PAX8



囊肿

正常胸腺

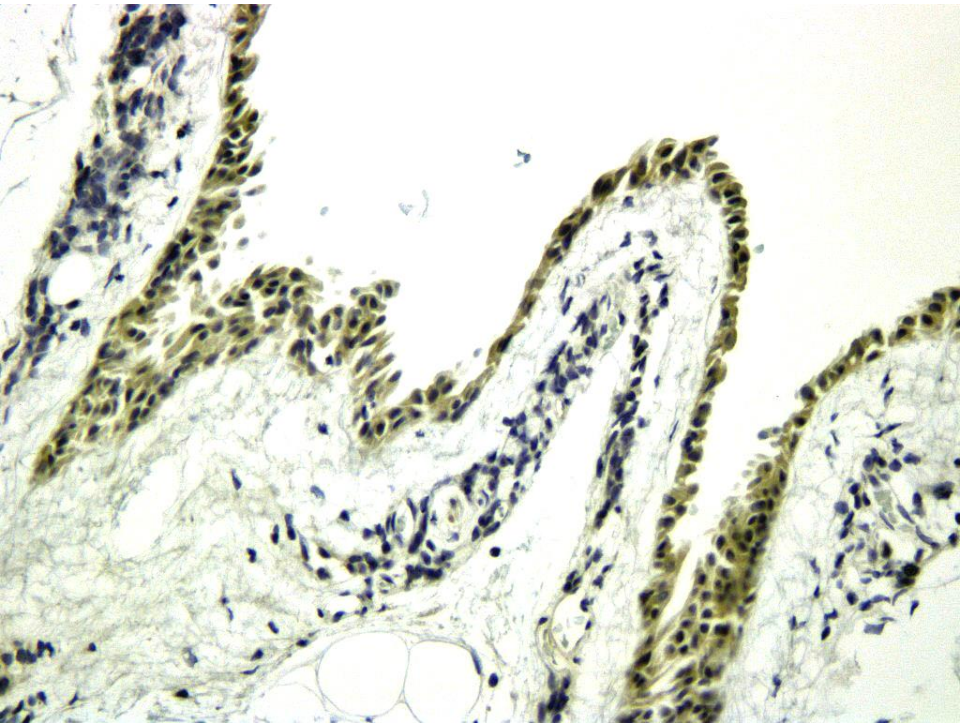
# CA125



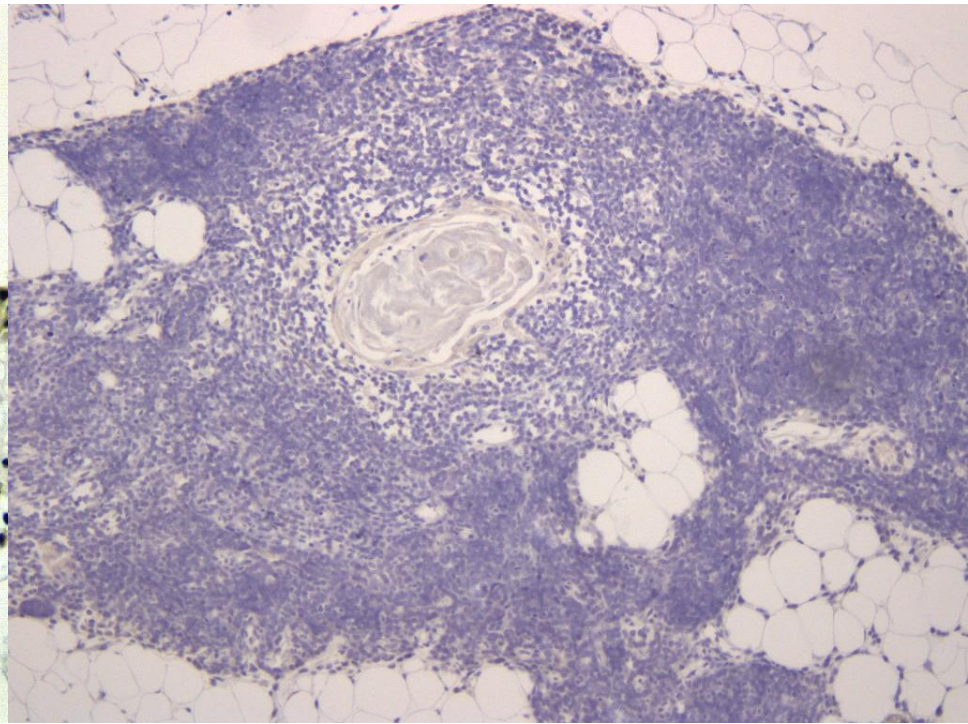
囊肿

正常胸腺

# WT1

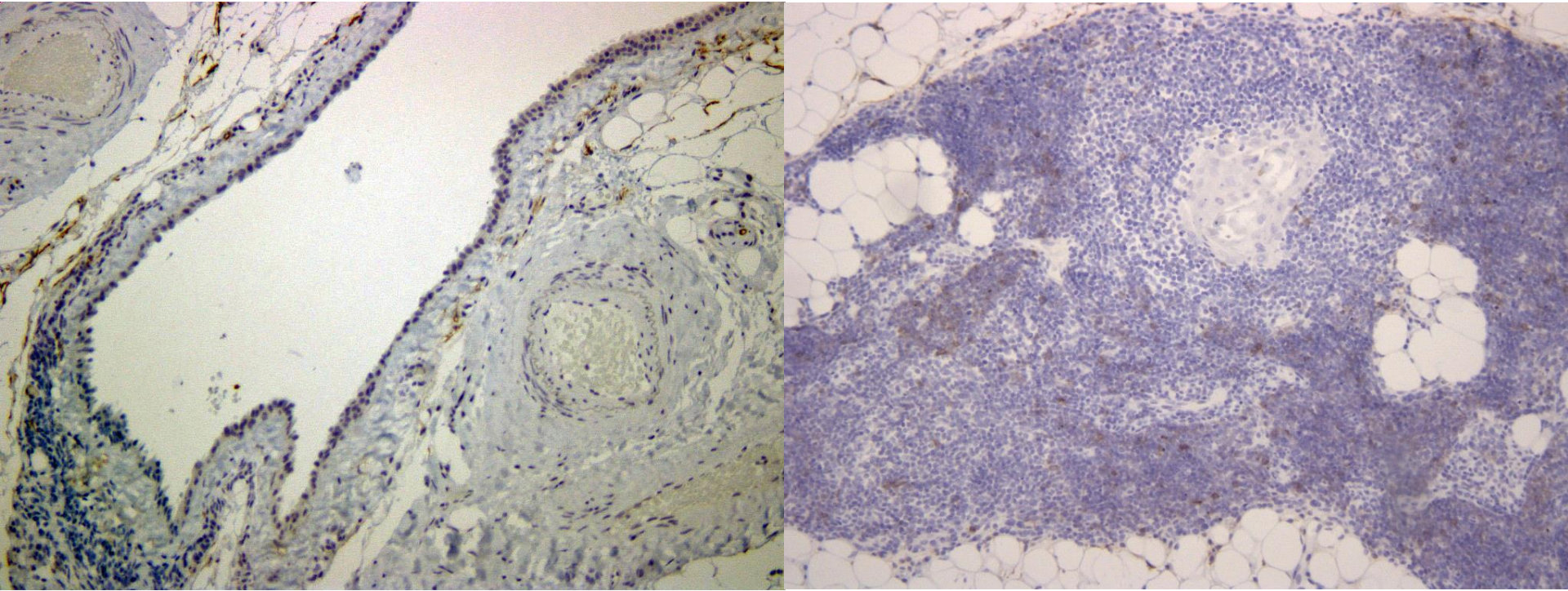


囊胞



正常胸腺

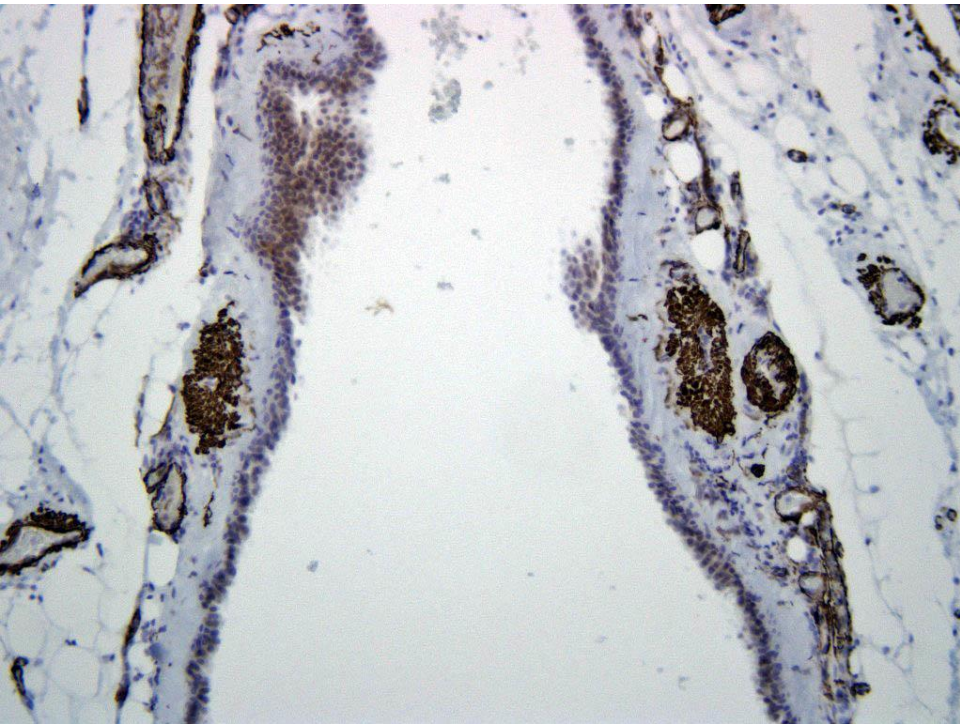
# CD10



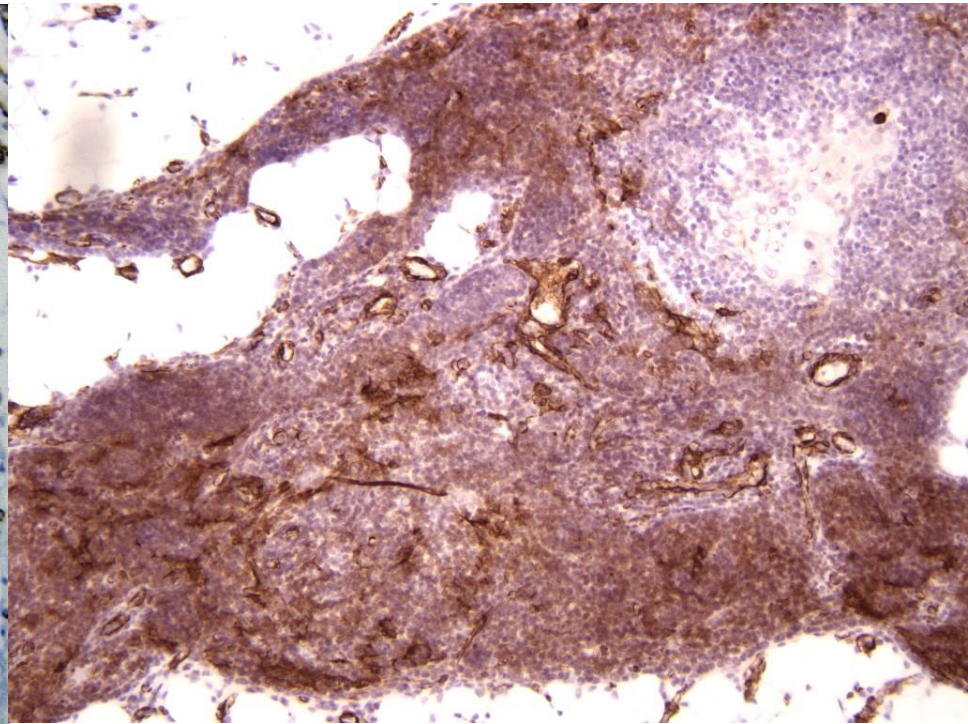
囊肿

正常胸腺

# ASMA



囊胞



正常胸腺

# **Final Diagnosis**

**Thymic cyst?**

**Bronogenic cyst?**

**Mullerian cyst?**

**Benign serous cyst?**

# Thymic cyst

- 1) **Unilocular: pediatric, simple cysts with virtual absence of reactive or inflammatory changes**
- 2) **Multilocular: adult, lined by squamous epithelium, fibrosis, inflammatory infiltrates**

Am J Anat. 1979 Sep;156(1):91-7.

## **Origin of necklace particles in thymic ciliating cells.**

Cordier AC, Haumont S.

### **Abstract**

The formation of ciliary necklaces during ciliogenesis in a **thymic cyst** was observed in freeze-etched replicas. The necklaces first appear as clusters of particles arranged in concentric circles on a flat area of the cell membrane. As soon as the cilium begins to grow, the particles move to the periphery.



## Multilocular thymic cyst associated with follicular hyperplasia: clinicopathologic study of 4 resected cases.

Izumi H<sup>1</sup>, [Nobukawa B](#), [Takahashi K](#), [Kumasaka T](#), [Miyamoto H](#), [Yamazaki A](#), [Sonobe S](#), [Uekusa T](#), [Suda K](#).

### Author information

### Abstract

We report here 4 cases of multilocular **thymic** cysts (MTCs) with reactive lymphoid follicular hyperplasia. They were admitted to our hospital to examine anterior **mediastinal** masses demonstrated on chest computed tomographic scans. Three patients presented high-grade intermittent fever, and 2 patients were associated with Sjogren syndrome with elevated serum antinuclear antibody levels. All patients were subjected to extended thymectomy. Interestingly, their fever disappeared immediately after surgery. Histologically, the lesions were characterized by several cystic spaces separated by various thick walls with dense lymphoid tissue containing large reactive germinal centers. The inner **cyst** walls were lined by flattened cuboidal epithelia in some portions. Columnar epithelia with focal cilia were partially observed in 2 cases. These pathological findings led to a diagnosis of MTCs that were thought to result from cystic transformation of medullary duct derivatives by acquired inflammatory processes. The pathological findings, together with clinical courses of our cases, suggest that inflammation accompanied by autoimmune diseases may play, in part, an important role in the development of MTCs.

## Cysts of the posterior mediastinum showing müllerian differentiation (Hattori's cysts)

Vincent Thomas-de-Montpréville, MD\*, Elisabeth Dulmet, MD

*Department of Pathology, Marie Lannelongue Surgical Center, 92350 Le Plessis Robinson, France*

### Abstract

Cysts of probable müllerian origin have recently been recognized in the mediastinum by Hattori (*Virchows Arch.* 2005;446:82-84; *Chest.* 2005;128:3388-3390). In a retrospective study, we found 9 such cases, accounting for 5.5% of a series of 163 consecutive mediastinal nonneoplastic cysts operated in our institution. These cysts occurred in 9 women aged 40 to 58 years (mean, 50.6 years). These women often had overweight (n = 4) or various gynecologic history (n = 5). Cysts were paravertebral (n = 8) or prevertebral (n = 1). They were initially classified as bronchogenic or unspecified benign serous cysts. Their diameter measured 1.3 to 5 cm. Their thin wall contained smooth muscle. They were lined by a simple cylindrical or cuboidal, nonmucinous, and often ciliated epithelium resembling uterine tubal epithelium. This epithelium expressed cytokeratin 7, epithelial membrane antigen and estrogen and progesterone receptors. It was negative for cytokeratin 5/6. In the same series, there were 66 bronchogenic cysts, 6 being paravertebral. In conclusion, cysts with müllerian differentiation account for a small proportion of mediastinal cysts and have a usual but nonspecific paravertebral location.

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Table 1

Main clinicopathologic data of the 9 mediastinal cysts with müllerian differentiation

Age (y)	Symptoms	Paravertebral location	Size (cm)	Preoperative diagnosis	Histologic initial typing
40	Chest pain, dysphagia	Left T4	1.5	Neurinoma	Benign serous cyst
46	Cough	Left T4	3.3	Neurinoma	Bronchogenic cyst
47	Cough	Right T4/T5	5	Neurinoma	Bronchogenic cyst
48	Asymptomatic, known for 7 y	Left T5	3	Bronchogenic cyst	Benign serous cyst
50	Ancient asthma, chest pain	Right T3/T4	3.2	Neurinoma or cyst	Bronchogenic cyst
51	Asymptomatic	Left T3/T4	3	Cyst	Bronchogenic cyst
56	Asymptomatic	Left T8	1.3	Neurinoma	Bronchogenic cyst
58	Cough	Prevertebral T5	4.5	Bronchogenic cyst	Benign serous cyst
59	Chest pain	Right T2 through T4	2.5	Neurinoma	Bronchogenic cyst

T3, T4, T5, and T8 indicate third, fourth, fifth, and eighth thoracic vertebrae.

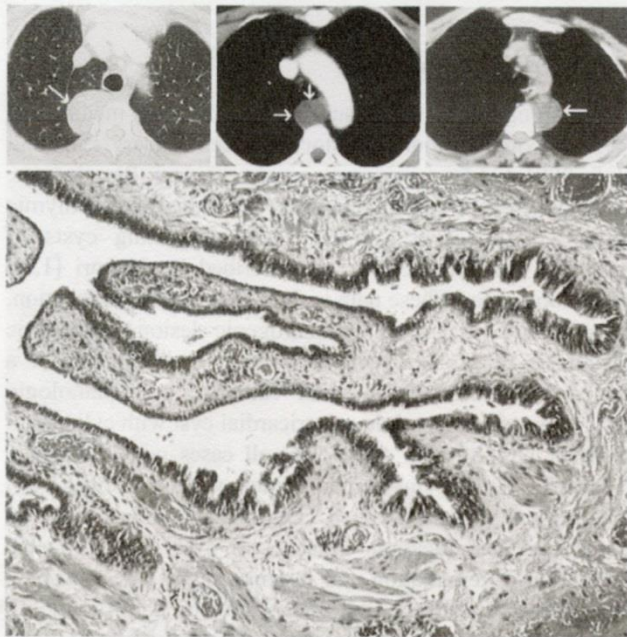


Fig. 1. Mediastinal cysts showing müllerian differentiation. (Top, from left) Computed tomographic scan of left paravertebral, prevertebral, and right paravertebral cases. (Bottom) Low magnification of cyst wall forming papillary-like structures lined with cylindrical to cuboidal epithelium and containing bundles of smooth muscle fibers.

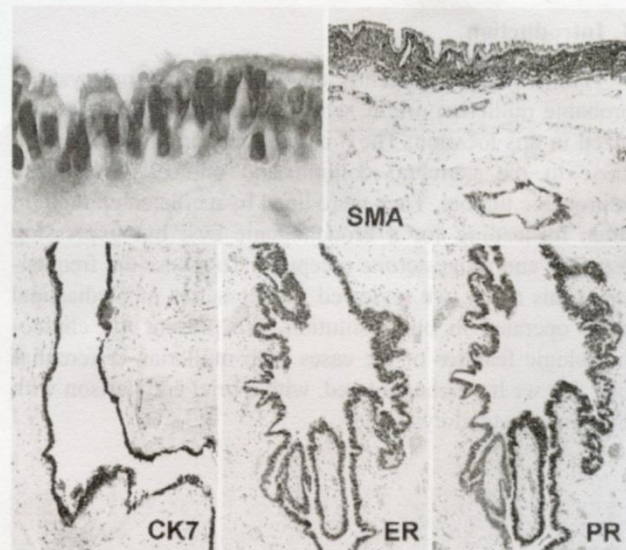


Fig. 2. Mediastinal cysts showing müllerian differentiation. (Top left) High magnification showing ciliated and nonciliated epithelial cell. (Top right) Immunostaining of the subepithelial layer of smooth muscle by anti-smooth muscle actin (SMA). (Bottom and from left) Cysts epithelial linings showing cytoplasmic expression of cytokeratin 7 (CK7), nuclear expression of estrogen receptor (ER), and nuclear expression of progesterone receptor (PR).

# High Prevalence of Estrogen and Progesterone Receptor Expression in Mediastinal Cysts Situated in the Posterior Mediastinum\*

*Hideo Hattori, MD*

**Background:** To identify and estimate the prevalence of mediastinal cysts lined by the epithelium expressing steroid receptors.

**Methods:** We retrieved 19 mediastinal cysts from our pathology files from 1996 to 2004, and examined estrogen receptor (ER) and progesterone receptor (PR) expressions in the cysts.

**Results:** Three paravertebral cysts, all in women, one bronchogenic cyst in a woman, nine thymic cysts, and six pericardial cysts were found in the pathology files. Paravertebral cysts were situated in the posterior mediastinum and were attached either to the left or the right of the vertebral column. All cysts were radiologically diagnosed before surgery as neurogenic tumors. They were excised by video-assisted thoracoscopic surgery. The epithelial lining of the cyst in all three cases was strongly positive for both ER and PR. A thymic cyst in one woman was weakly positive only for the ER. In all other cases, the lining was entirely negative for both ER and PR.

**Conclusions:** Posterior mediastinal paravertebral cysts characteristically express ER and PR. They should be recognized as a distinct type of mediastinal cyst because they are biologically different from bronchogenic cysts, seem not to be infrequent, and sometimes are misdiagnosed as a neurogenic tumor. *(CHEST 2005; 128:3388–3390)*

**Key words:** estrogen receptor; paravertebral cyst; posterior mediastinum; progesterone receptor

**Abbreviations:** ER = estrogen receptor; PR = progesterone receptor

**Table 1—Clinical Data, Pathologic Diagnoses, and Results of Immunostaining for ER and PR\***

Case	Age, yr/Sex	Diagnosis	ER/PR
1	52/F	Paravertebral	(+)/(+)
2	18/F	Paravertebral	(+)/(+)
3	49/F	Paravertebral	(+)/(+)
4	18/F	Bronchogenic	(-)/(-)
5	28/F	Pericardial	(-)/(-)
6	66/F	Pericardial	(-)/(-)
7	66/F	Pericardial	(-)/(-)
8	61/F	Pericardial	(-)/(-)
9	71/F	Pericardial	(-)/(-)
10	31/M	Pericardial	(-)/(-)
11	54/F	Thymic	(-)/(-)
12	55/M	Thymic	(-)/(-)
13	78/M	Thymic	(-)/(-)
14	41/M	Thymic	(-)/(-)
15	58/F	Thymic	(-)/(-)
16	48/M	Thymic	(-)/(-)
17	58/F	Thymic	(+)/(+)
18	65/M	Thymic	(-)/(-)
19	61/M	Thymic	(-)/(-)

\*- = negative; + = positive; ER = estrogen receptor; PR = progesterone receptor.

# 過去の 17例の縦隔発生 Mullerian cystの報告

## 発生部位

後縦隔-16例

中縦隔-1例

前縦隔-なし

## 性

すべて女性

# Two cases of cyst with Mullerian differentiation (?)

Case	Sex	Age	Location	IHC
1	41	F	Middle	CK7, WT1, PgR+
2	73	F	Anterior	CK7, ER, PAX8, CA125+





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Clinical Imaging 36 (2012) 837–839

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CLINICAL  
IMAGING

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## Thymic cyst arising in the middle mediastinum posterior to the left atrium—a peculiar location

Lyndon Luk\*, Pierre D. Maldjian, Abhishek Kumar, Stephen Peters

*Department of Radiology, University of Medicine and Dentistry of New Jersey, New Jersey Medical School, Newark, NJ 07103, USA*

Received 16 September 2011; received in revised form 14 December 2011; accepted 24 February 2012

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### Abstract

While masses of thymic origin are commonly located within the anterior mediastinum, abnormal migration of thymic tissue during development can result in thymic lesions in other intrathoracic locations. Ectopic thymic lesions in the middle mediastinum are extremely rare. We present a case of a calcified thymic cyst located posterior to the left atrium entirely within the caudal aspect of the middle mediastinum, a location not previously reported.

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*Keywords:* Thymic cyst; Middle mediastinum

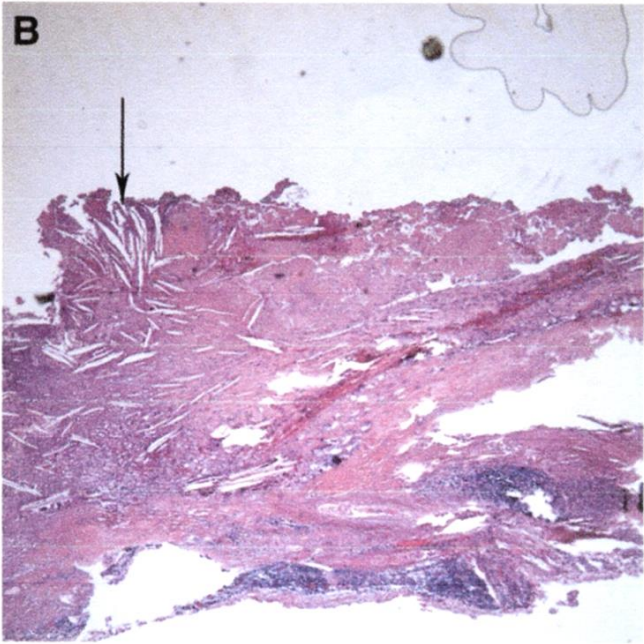
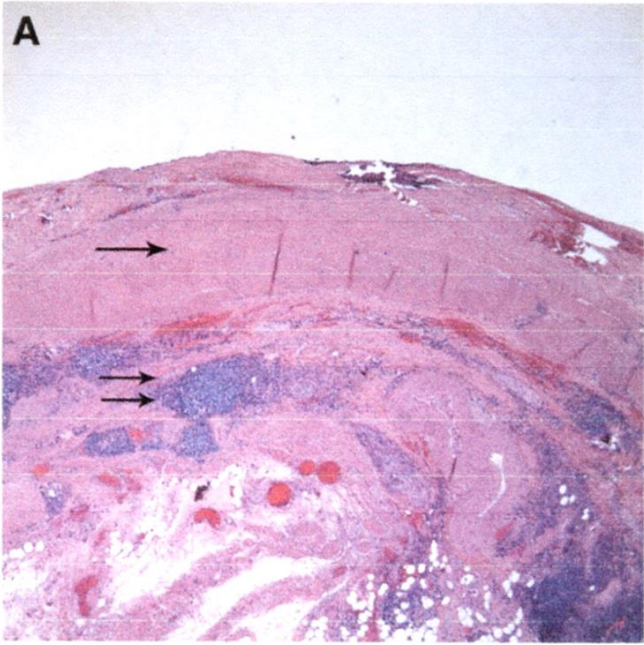


FIG. 2. (A) Normal histology of the placenta. (B) Histology of the placenta showing fibrosis.

## ●症 例

## 胸腺に発生した気管支性嚢胞の1例

谷脇 聡<sup>1)</sup> 田中 宏紀<sup>1)</sup> 船戸 善彦<sup>1)</sup>花木 英和<sup>2)</sup> 竹山 慎二<sup>2)</sup> 川上 誠<sup>2)</sup>

要旨：気管支性嚢胞は、縦隔発生の嚢胞性腫瘤の中では頻度の高い疾患であるが、一般に、中縦隔から後縦隔に発生し、特に気管分岐部付近に好発する。今回、我々は前上縦隔、胸腺内に発生し、術前、術中に胸腺嚢胞と鑑別が困難であった症例を経験した。嚢胞は胸骨柄の背側、左腕頭静脈の腹側で、胸腺の正中頭側に認められた。嚢胞の大きさは5.5×3.5×1.2cmで、胸腺と共に摘出したが、術中、気道系との接触や索状物による連続性は認めなかった。組織学的には、1層の線毛上皮と明瞭な平滑筋組織が見られ、気管支性嚢胞と診断した。嚢胞の内容液は黄色混濁を呈し、術前に施行したCT、MRIでは、位置的な異常を除けば、本疾患に比較的特徴的な所見を示した。気管支性嚢胞が胸腺内に発生したという報告は、我々が検索しえた限りでは認められず、非常に稀な症例と考えられたので報告した。

キーワード：気管支性嚢胞，胸腺，前縦隔

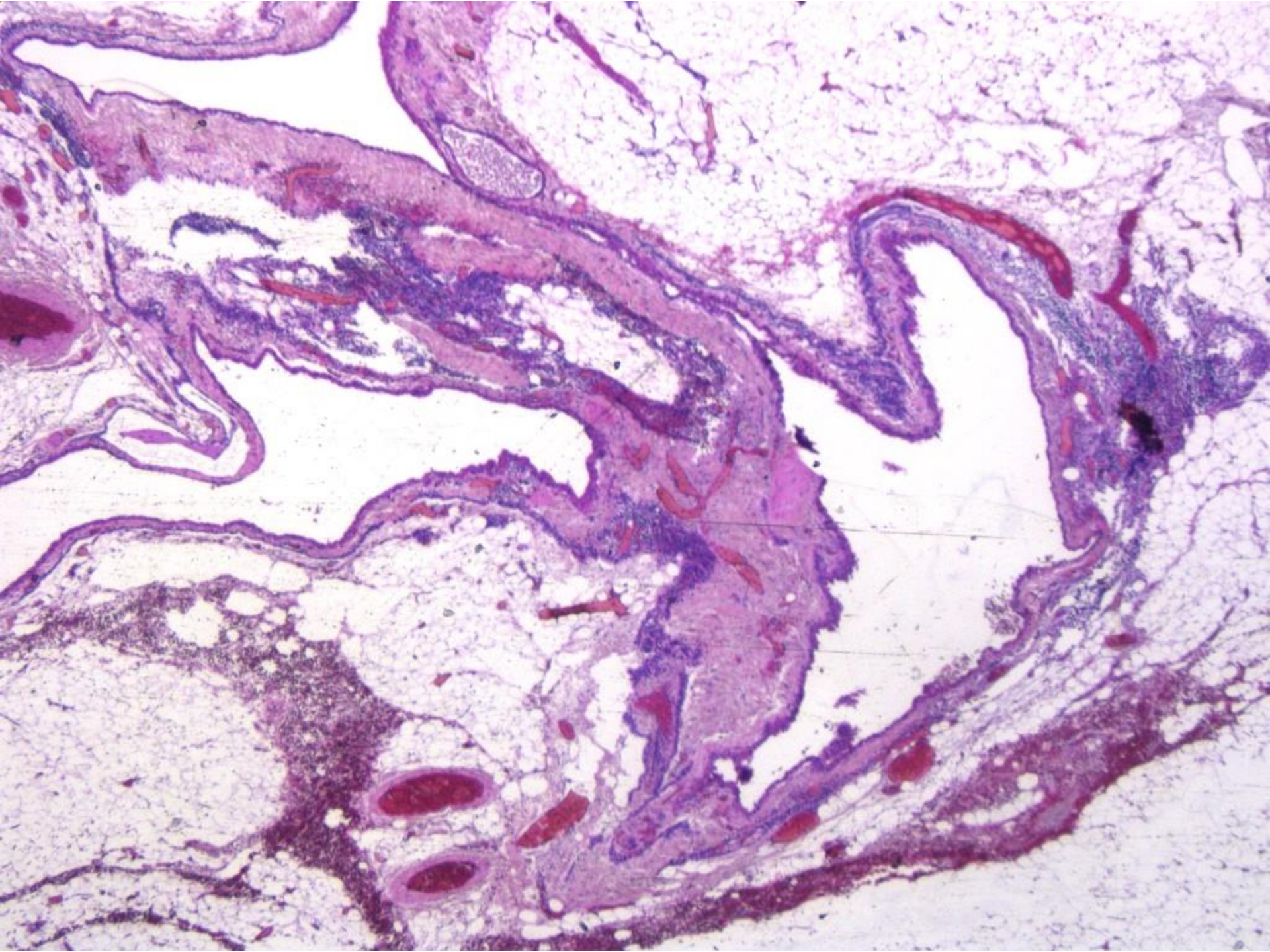
Bronchogenic cyst, Thymus, Anterior mediastinum

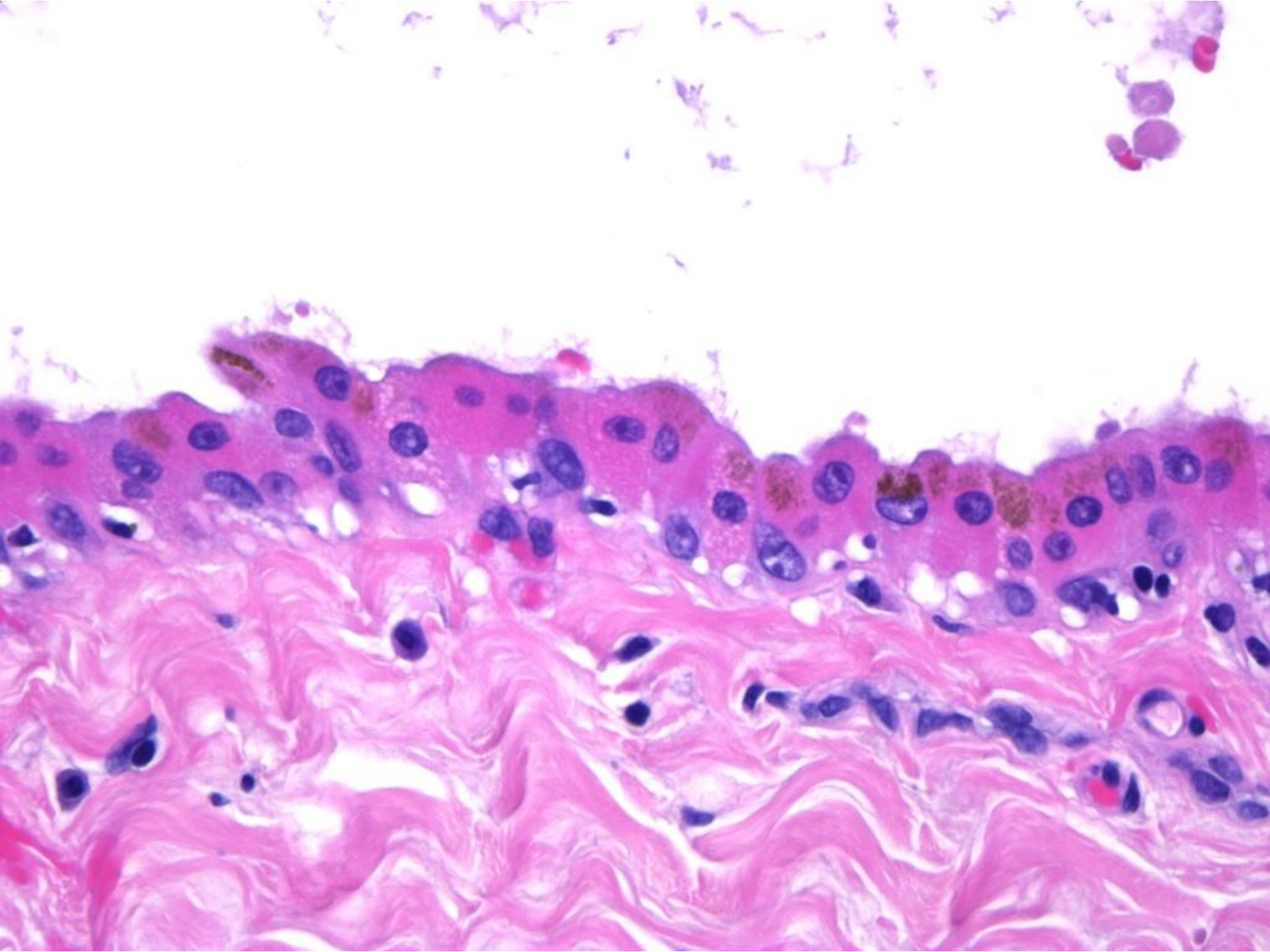


**Fig. 4** Photomicrograph showing a layer of ciliated epithelium lining the inner side of the cyst and a layer of smooth muscle in the wall.

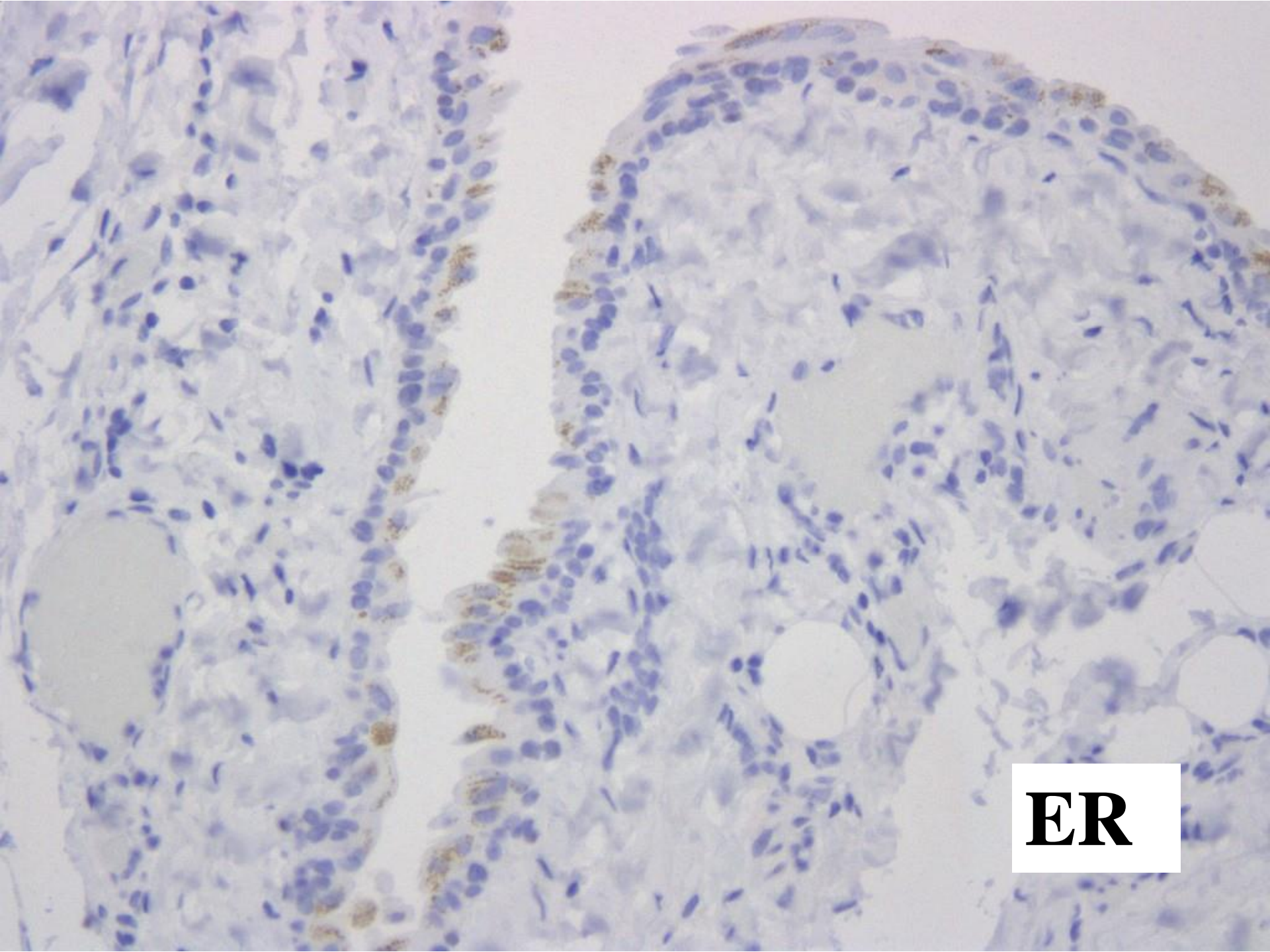
診断がよくわから  
らないので、類似  
した過去の症例  
を検討してみた

**前縦隔・胸腺領域**  
**Thymic with ciliaと**  
**診断した症例**  
**67歳男性**

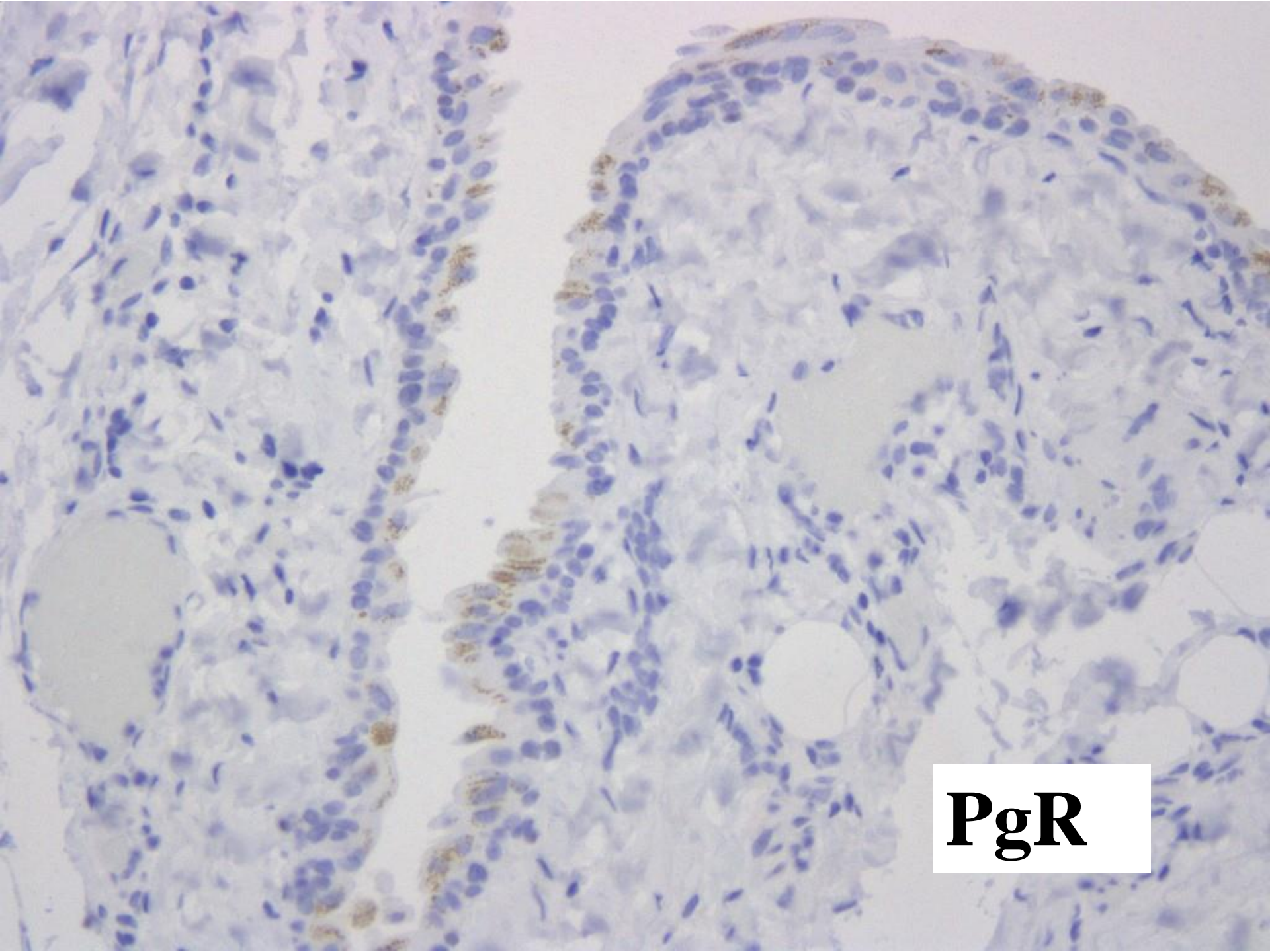




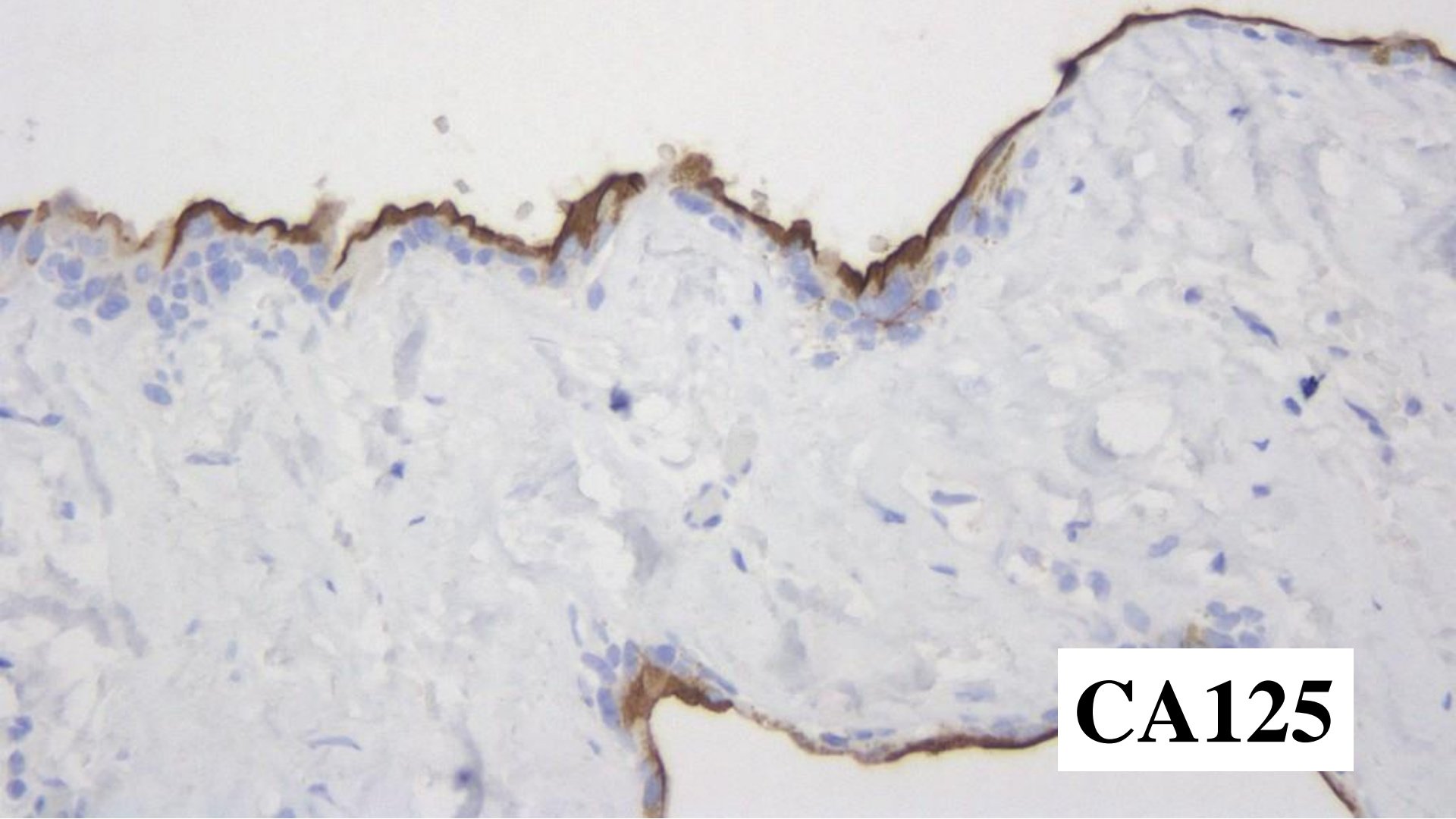




**ER**



**PgR**



**CA125**

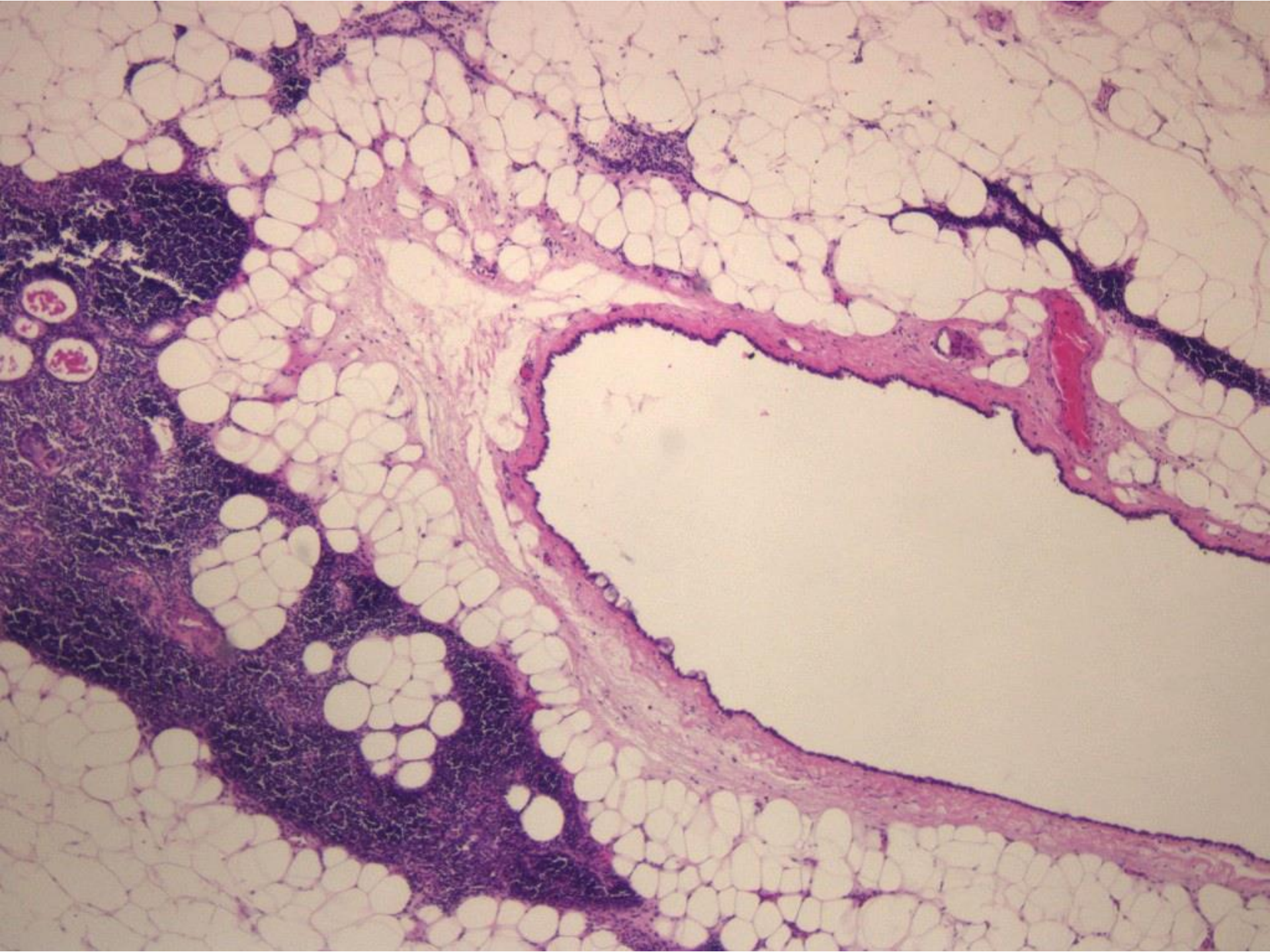
**前縦隔・胸腺領域**

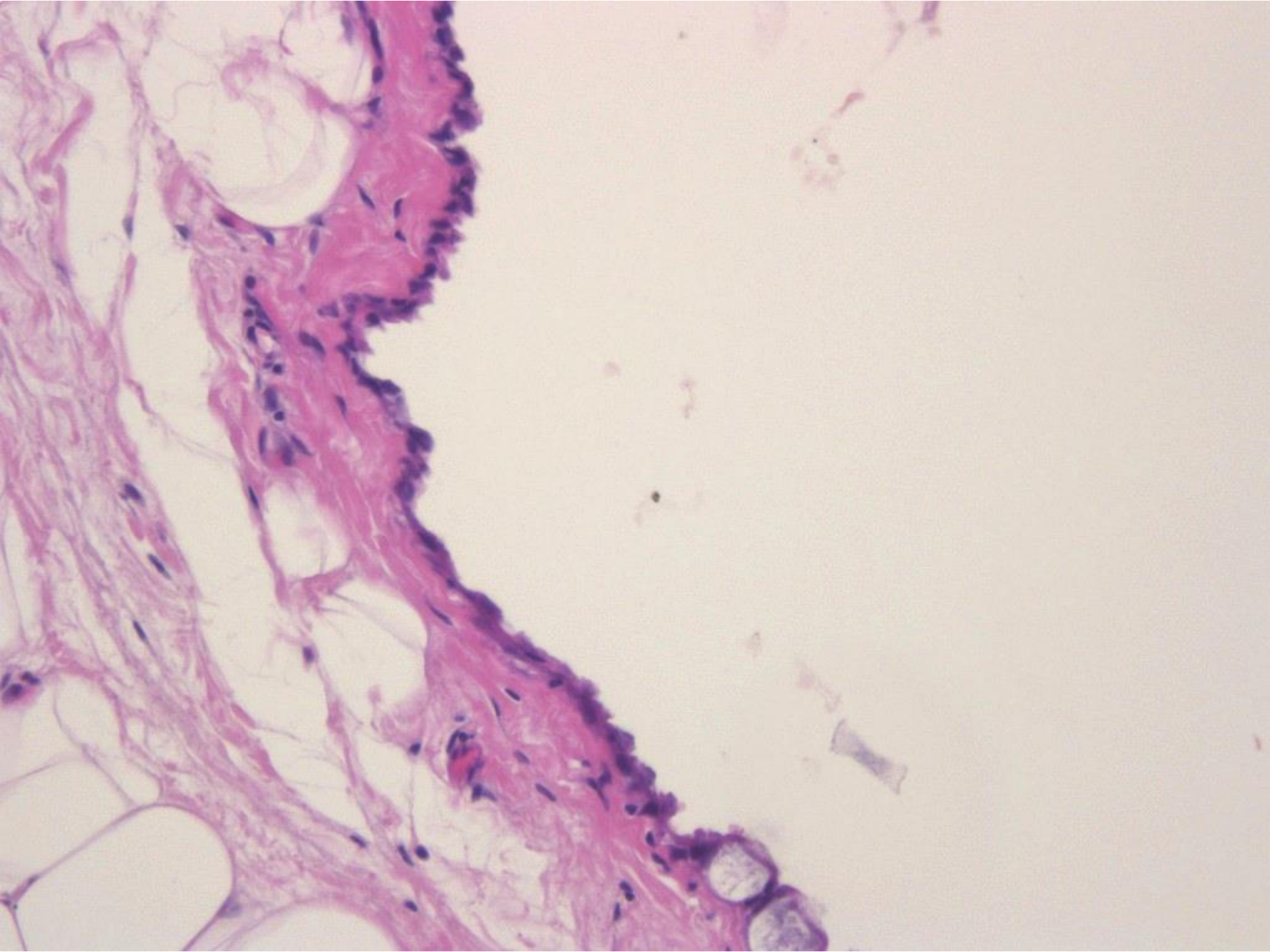
**Thymic cyst**

**with cilia?**

**Mullerian cyst?**

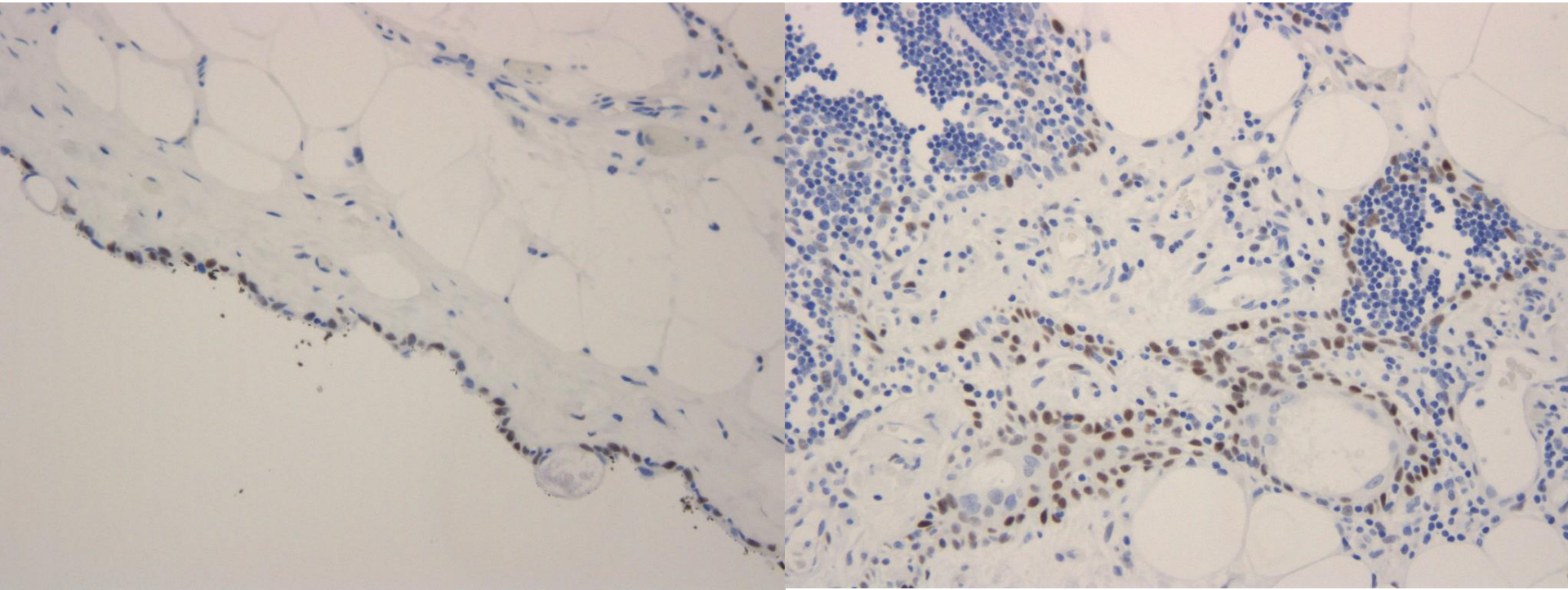
**55歳、女性**







**ER**

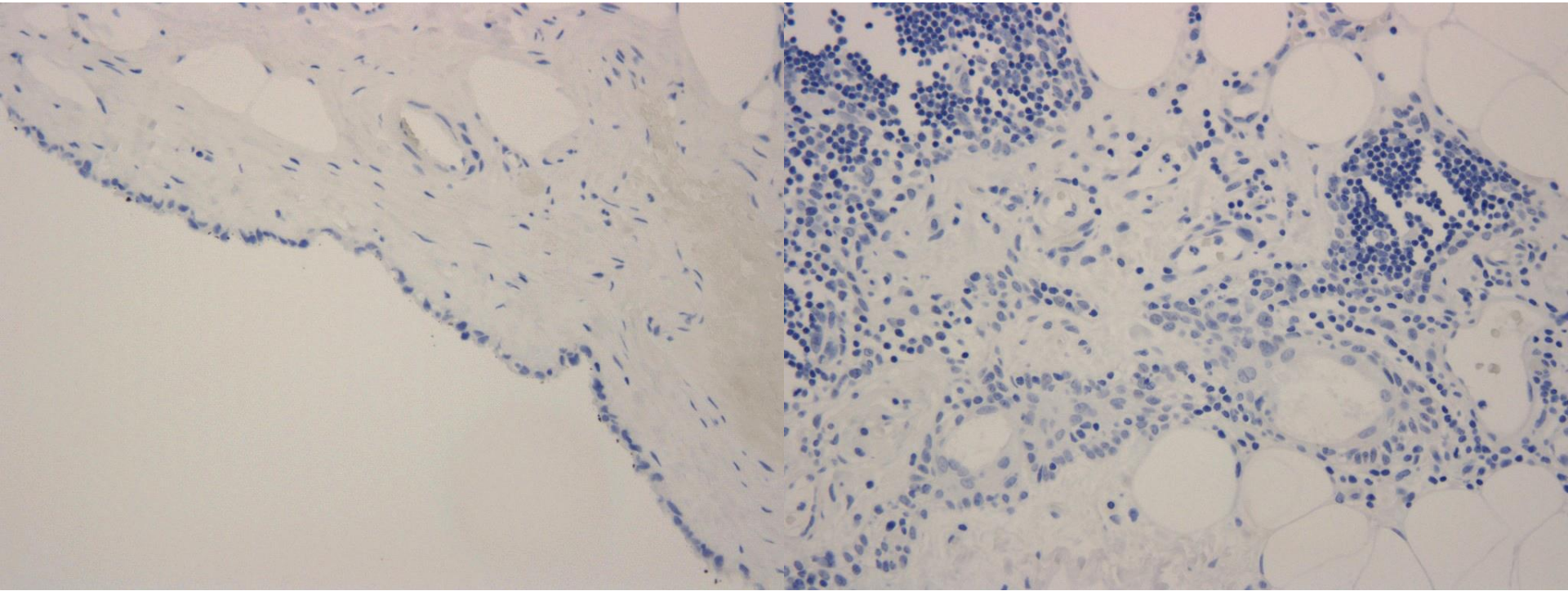


**囊胞**

**正常胸腺**



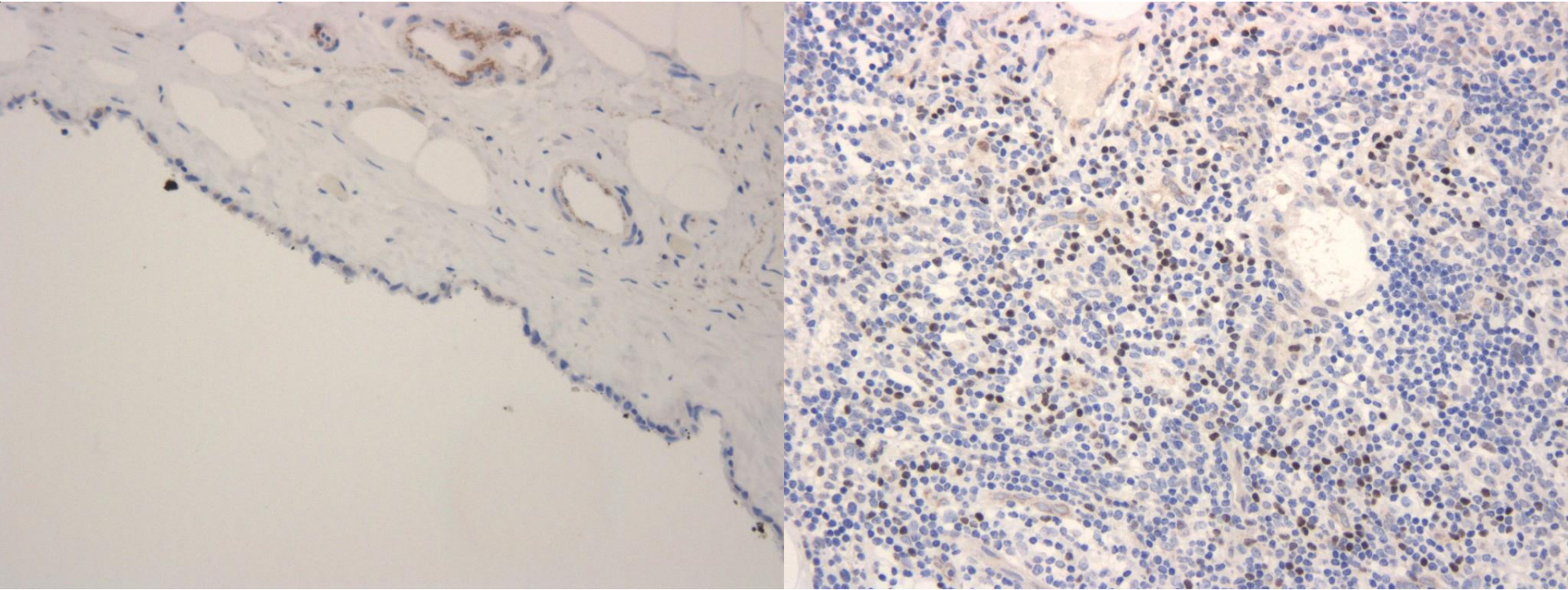
# PgR



**囊胞**

**正常胸腺**

# PAX8



**囊胞**

**正常胸腺**

# Posing question/Take Home Message

- 1) 前縦隔でも ER, PgR, CA125, PAX8, WT1が陽性になっただけで、Mullerian cystにしてもよいのか？上記のMullerian markerは正常胸腺で染まるものが多い。thymic cyst with ciliaとの境界線は？
- 2) Mullerian cystは本当に存在するのか？過去の報告例はすべて女性に発生しているが、間質に平滑筋が存在する報告はあるが、ovarian stromaを有しているものはみつからない。thymic cyst with ciliaが中・後縦隔に異所性に発生したものが Mullerian cystとして認識されている可能性もあるのではないか？
- 3) 研究が進むまで、よくわからないものは ciliated cystとして descriptive nameを使用するのが望ましいか？
- 4) Mediastinal mullerian cystは過去の過去の報告例は17例のみであるが、後縦隔発生 の broncogenic cystとして病理診断報告されているものも多いのではないかと思われる。

皆さん

どう思われますか？