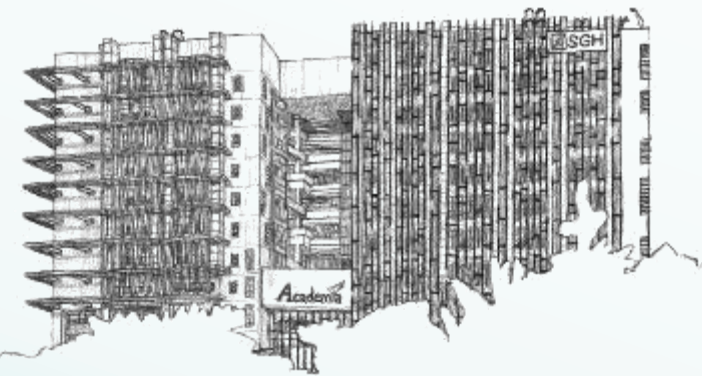
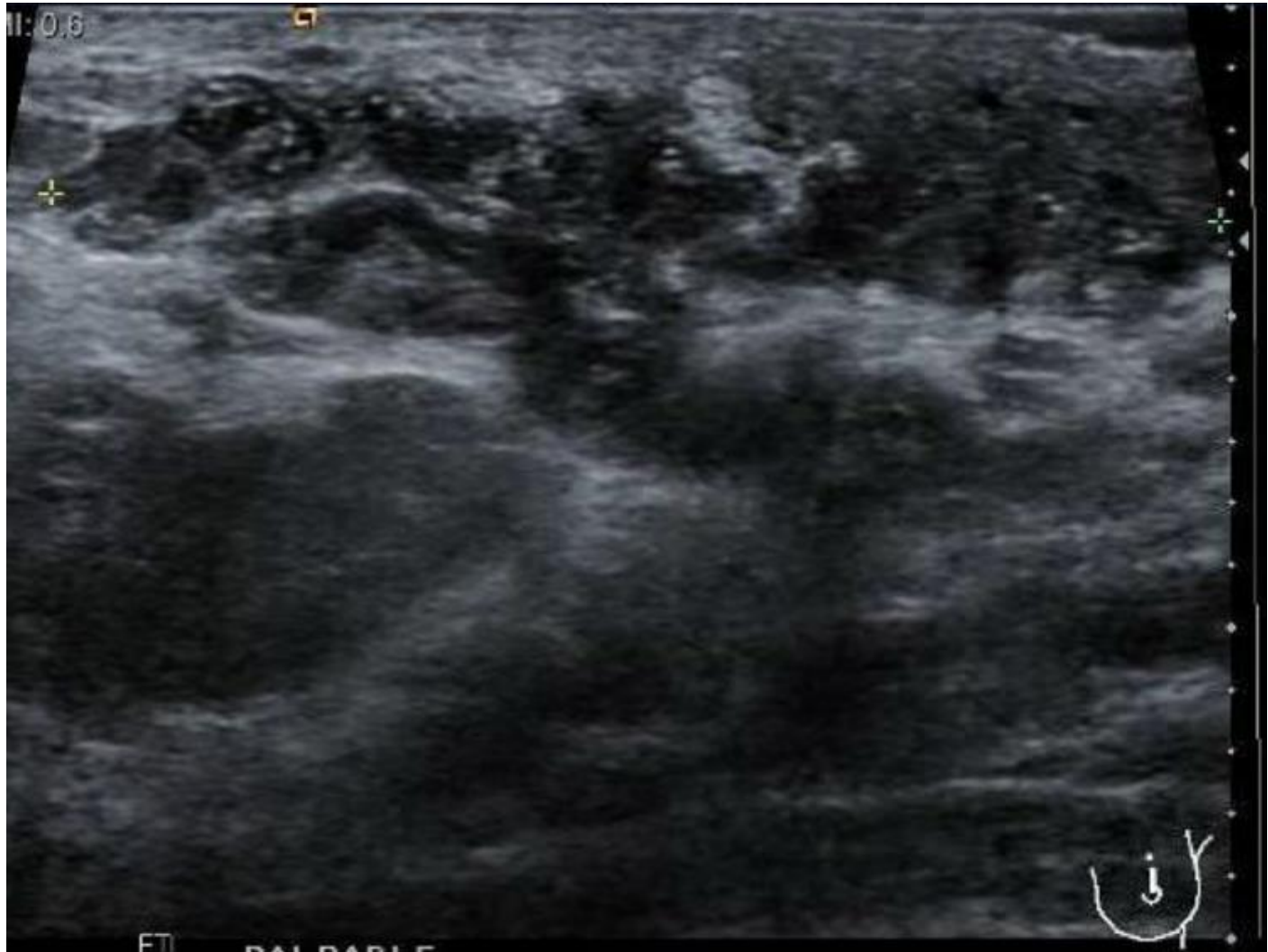


- 40 year old, Female
- f/u for left breast mass associated with milky discharge; has stopped breastfeeding for 6/12



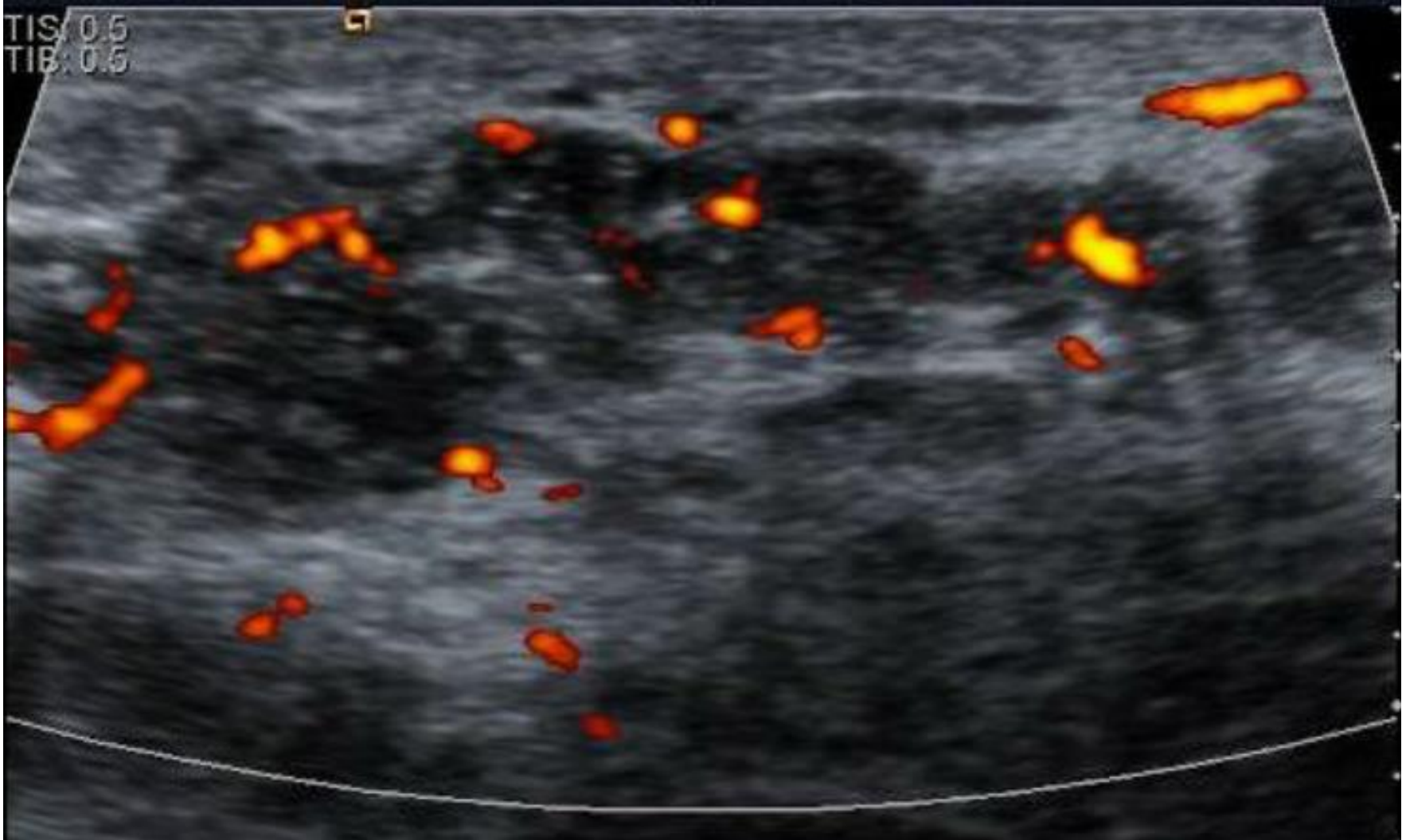
- Ultrasound reveals three adjacent ill-defined hypoechoic lesions in the left breast periareolar region
- They appear to be intraductal in origin and probably represent acute on chronic inflammatory lesions
- Intraductal papillomatosis is a less likely differential diagnosis.

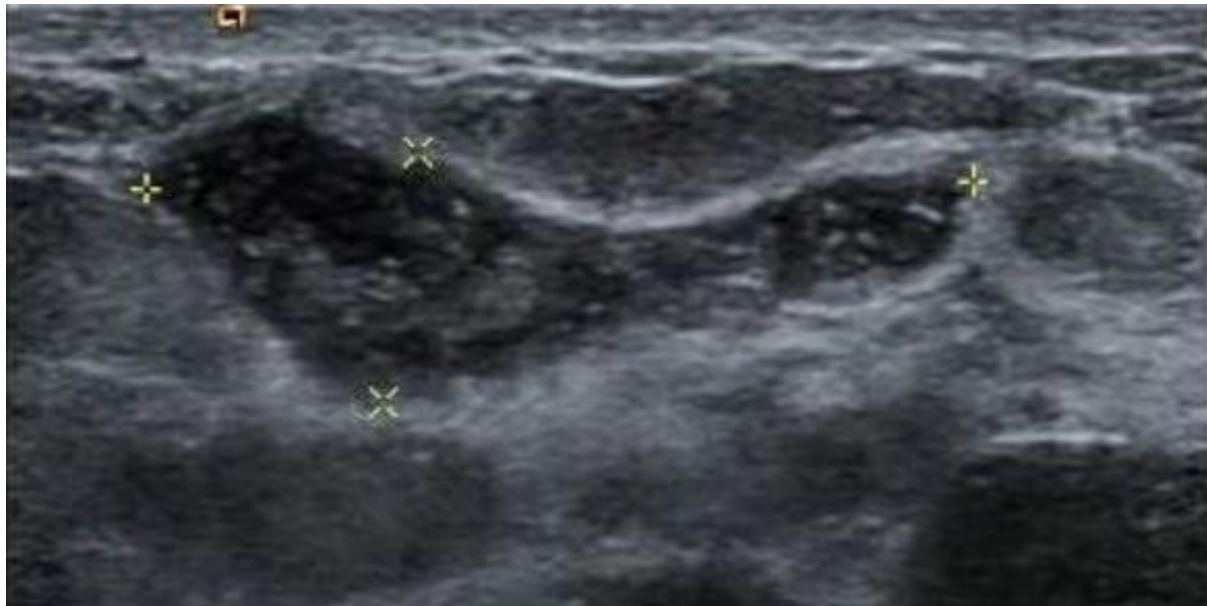




TIS: 0.5
TIB: 0.5

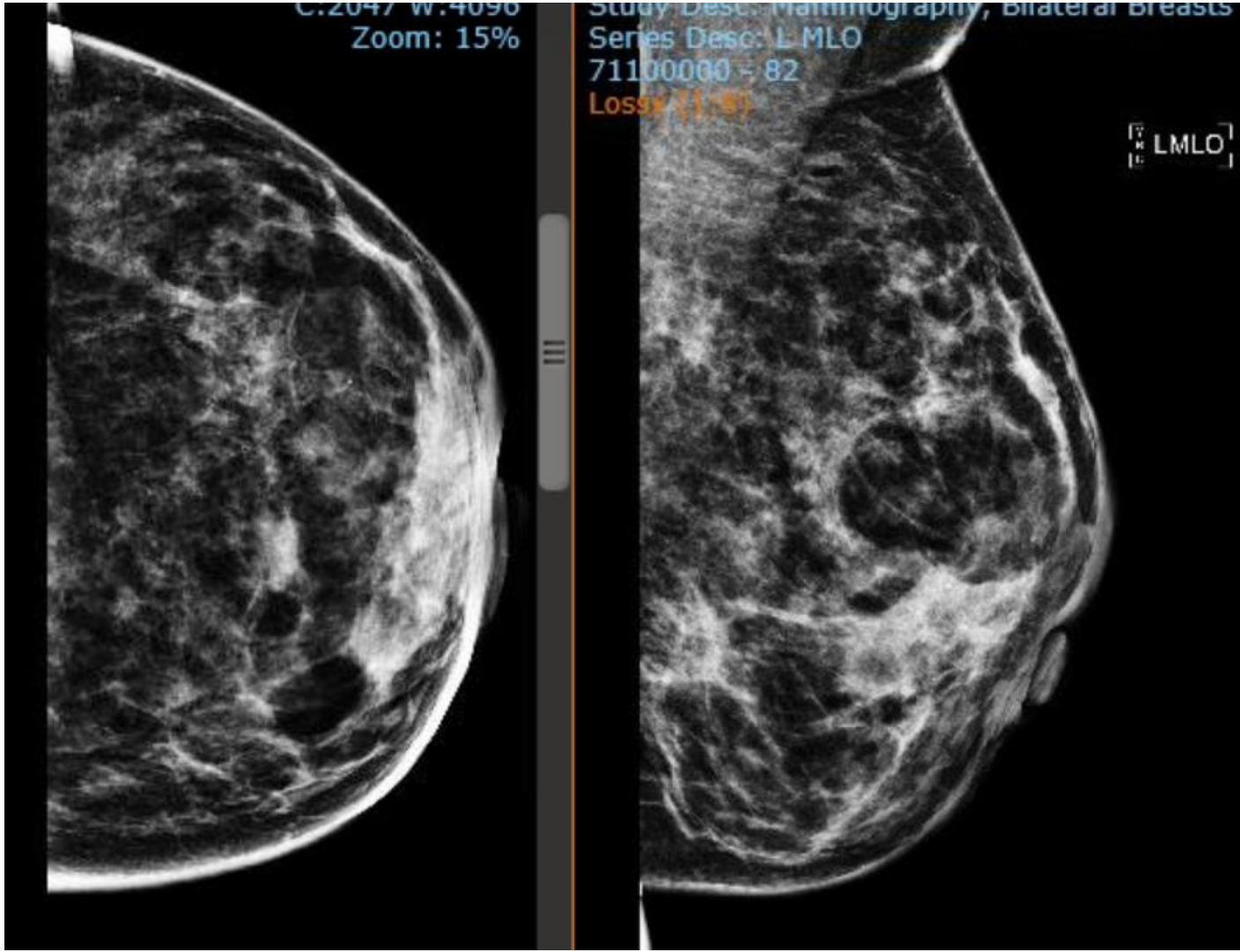
5

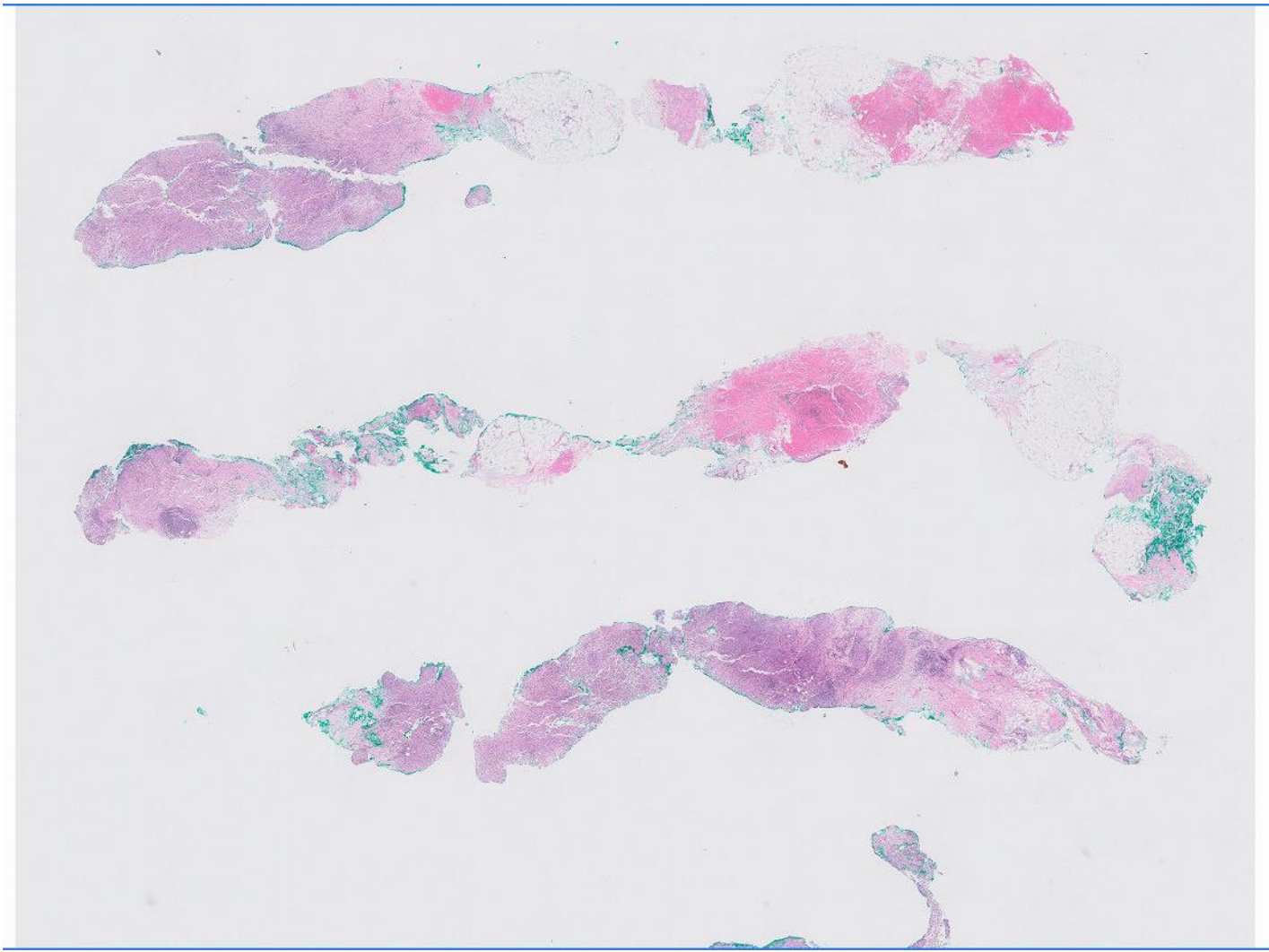




SIEMENS
VFX13-5 / Breast
2D
GEN / 11.43 MHz
40 dB / DR 65
ASC 3 / DTCE M
Map J / RS 3

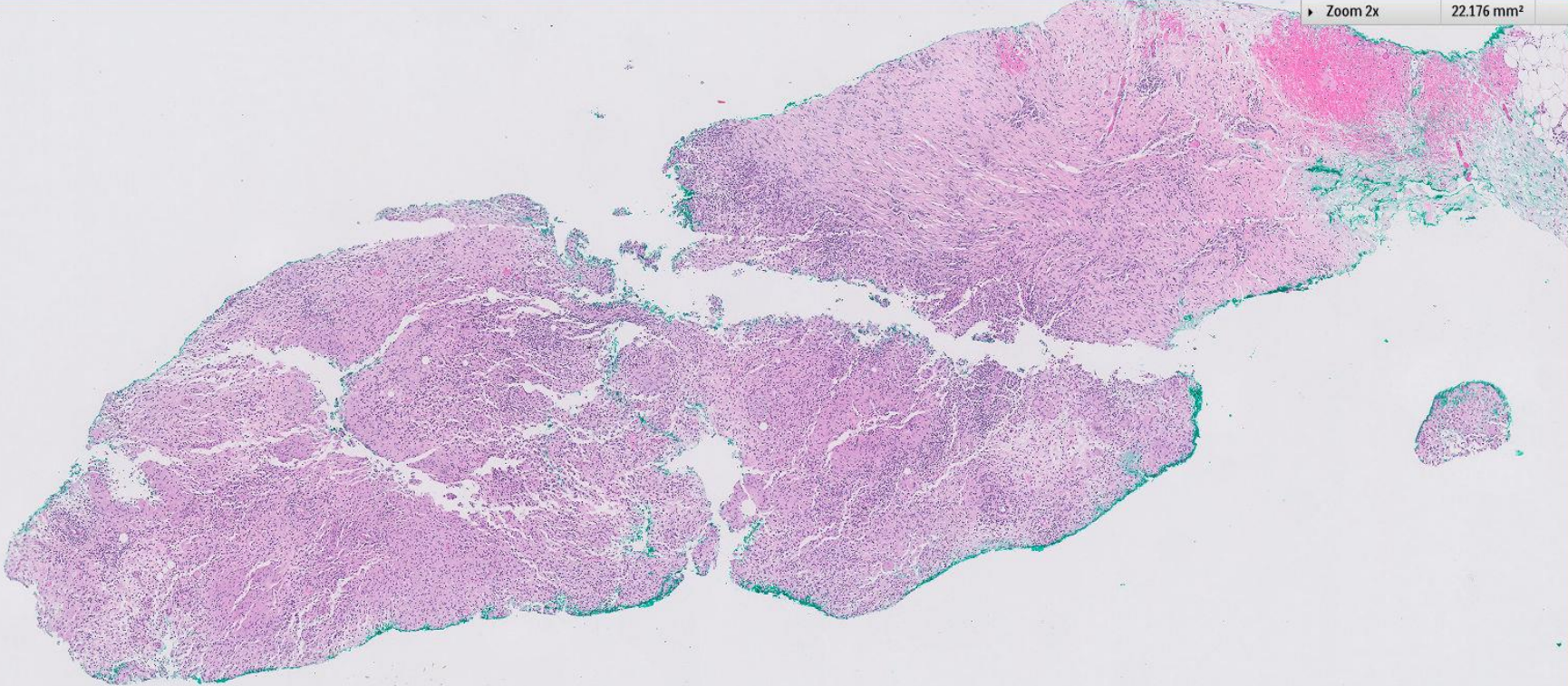
+D=25.4 mm
x D=7.7 mm





▶ Zoom 2x

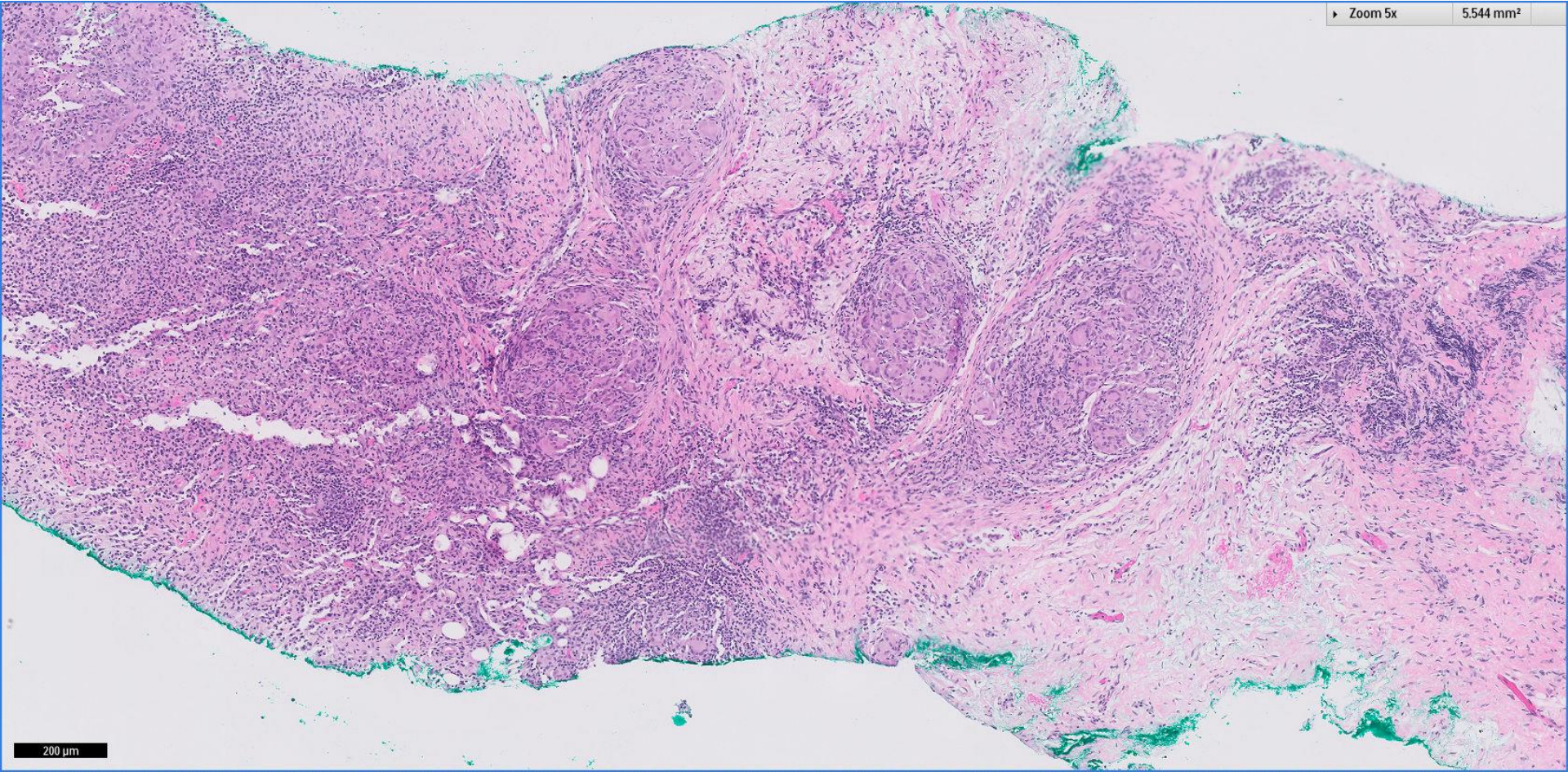
22.176 mm²



500 μm

► Zoom 5x

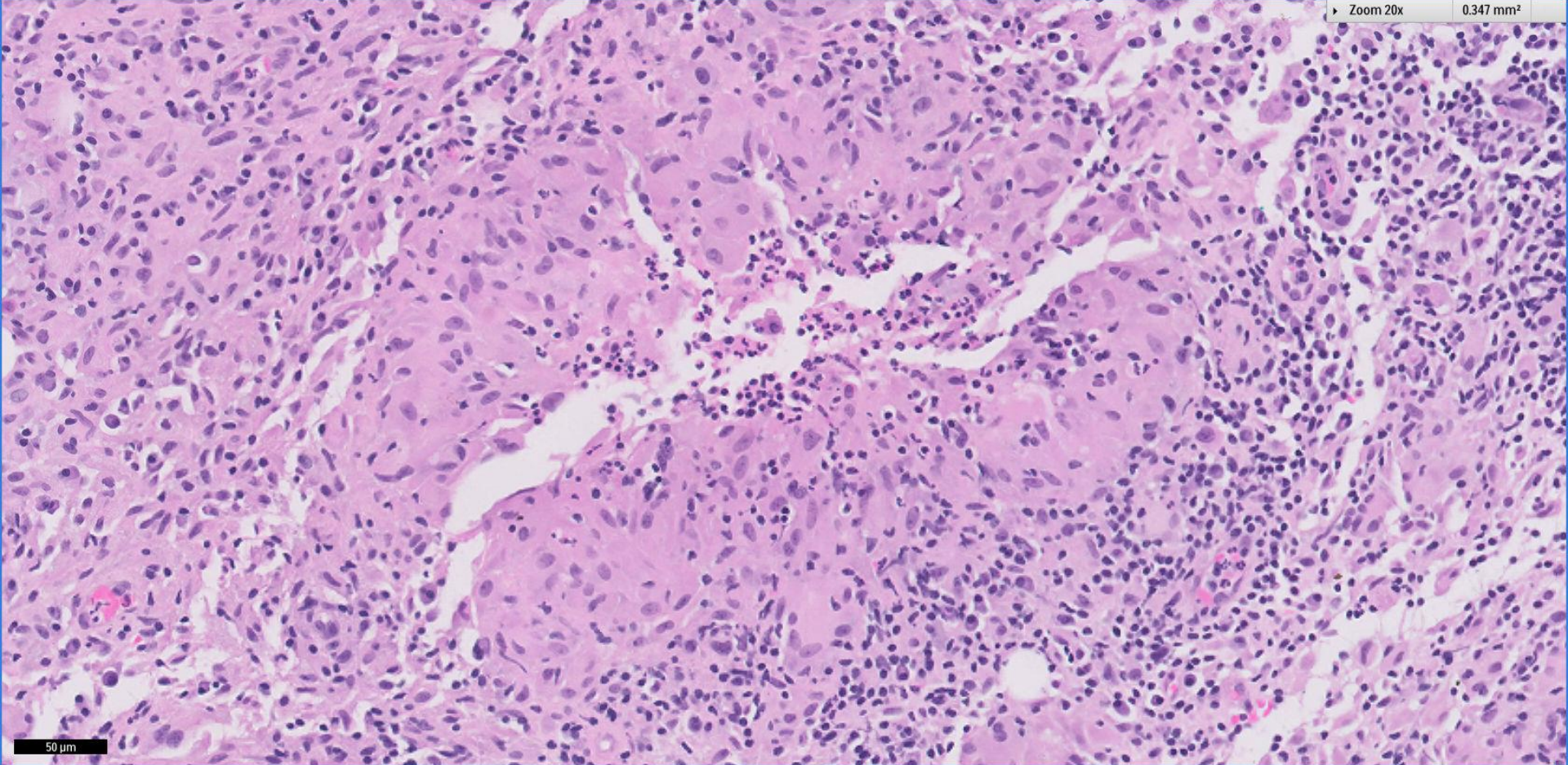
5,544 mm²



200 μ m

Zoom 20x

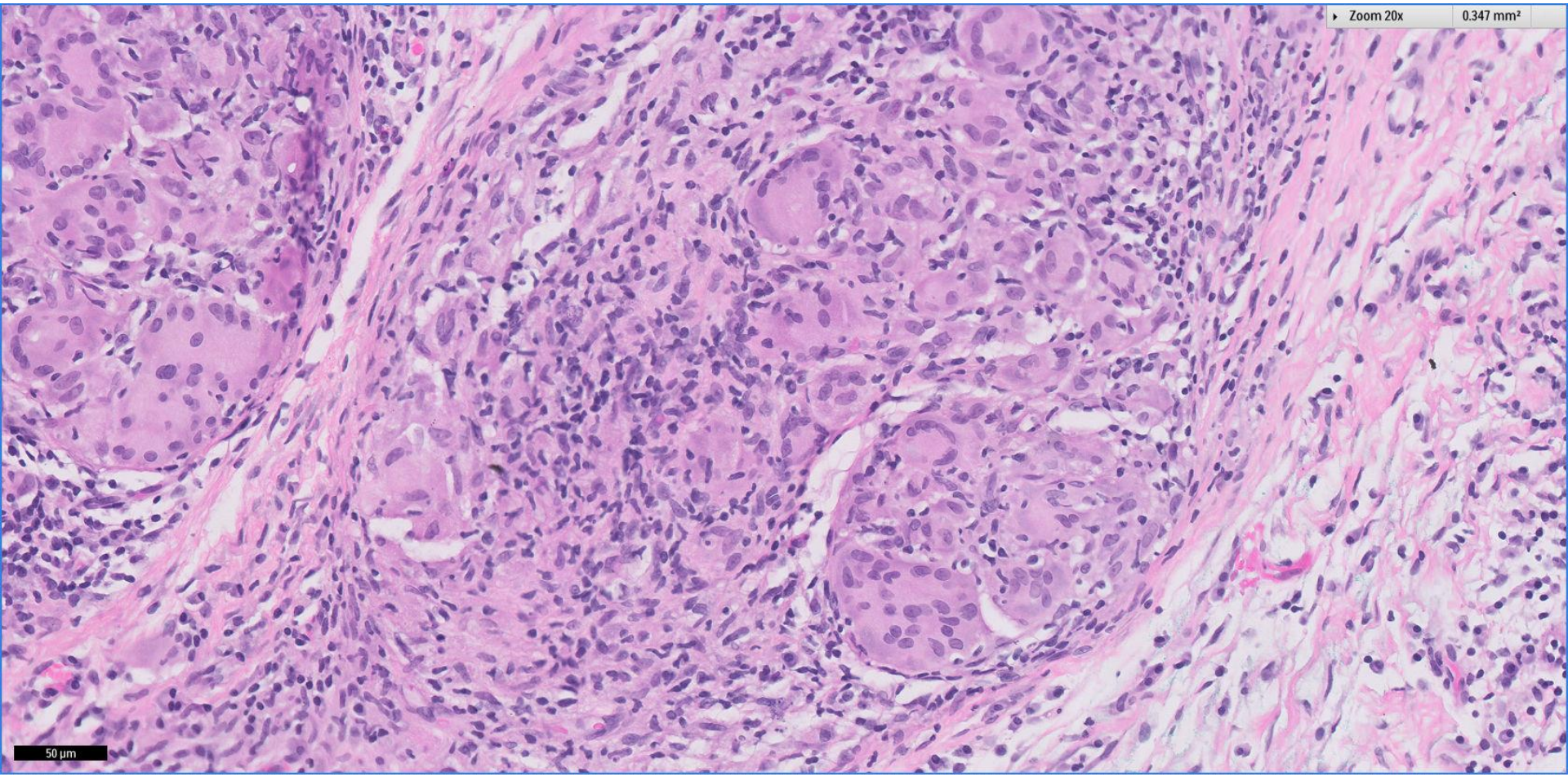
0.347 mm²



50 μm

Zoom 20x

0.347 mm²



50 μ m

- Fungal and TB stains negative

Left breast 11-1 o'clock hypoechoic area: US
core biopsy:

- Acute-on-chronic, granulomatous
inflammation

Comment: Cultures negative

Granulomatous mastitis

- “Granulomatous”: well-formed granulomas may not be present; giant cells can be identified
- Possible aetiologies: Foreign material, biological substances (lipids, keratin, calcium oxalate), infectious, sarcoidosis
- “Idiopathic”: when no cause can be found after appropriate investigations

Cystic Neutrophilic Granulomatous Mastitis (CNGM)

- Women of reproductive age, with history of pregnancy
- Palpable, often painful mass, +/- systemic symptoms
- Fistula/ sinus tracts may develop
- Aetiology: Bacterial infection due to *Corynebacteria* sp.

CNGM

- Mixed inflammatory infiltrate
 - Lymphocytes, neutrophils, scattered giant cells
- Well-formed granulomas associated with ducts/ lobules
- **Round-to-oval, empty-appearing vacuoles rimmed by neutrophils**
- Gram stain: rod-shaped Gram-positive bacilli within the spaces (easily missed)
- Cultures for Corynebacteria should be performed
- However, cultures may be negative
- Corynebacteria are found on normal skin; identification and susceptibility testing may not be performed by microbiological lab unless pathological correlation is done
- PCR may be attempted

Granulomatous Lobular Mastitis (GLM)

- Occurs only in parous women; almost all have prior history of childbirth
- Synonyms: Postlactational granulomatous mastitis, lobular granulomatous mastitis
- Hypothesis: Immunological reaction to antigens arising in association with pregnancy/ to retained or extravasated secretions
- Rare cases in women without history of pregnancy: ?possible role of hyperprolactinaemia e.g. pituitary adenoma, medications
- Histologically very similar/ identical to CNGM
- Uncertain if represent same disease

GLM

- Steroids may be used to treat GLM: need to exclude infection
- Suggestion that GLM may be part of spectrum of IgG4-related disease; however, current evidence indicates most cases are not IgG4-related
- ?Association with trauma: introduction of skin/ nipple duct bacteria deep into breast tissue

Squamous Metaplasia of Lactiferous Ducts (SMOLD)

- Synonyms: Recurrent subareolar abscess, Zuska disease
- Strong association of tobacco use
- ?Vitamin A deficiency/ tobacco-related toxins may result in squamous metaplasia
- Painful, erythematous subareolar mass
- Recurrences common

SMOLD

- Histology may be nonspecific, showing chronic active inflammation
- Giant cells associated with keratin debris is suggestive
- Characteristic finding if nipple skin and orifice of involved duct is excised: Squamous metaplasia of duct epithelium with entrapped keratin deep to nipple
- May be hard to distinguish from squamous metaplasia due to (often multiple) prior surgeries

SMOLD

- Effective treatment: Surgical removal of keratin-producing epithelium
- Removal of involved duct as well as any fistulas
- Antibiotics may be indicated for lesions with secondary infections (often mixed bacteria)
- Cessation of tobacco use may reduce likelihood of recurrence

Duct Ectasia

- Large dilated (ectatic) subareolar duct(s), filled with inspissated lipid debris
- Lipid and/ or haemosiderin-laden macrophages
- Periductal inflammation
- Periductal fibrosis
- Giant cells/ granulomas: rare

Sarcoidosis

- Sarcoidosis may involve the breast
- Well-formed granulomas
- Granulomas are not specifically situated with respect to ducts/ lobules
- Rare/ no necrosis

Wegener Granulomatosis

- Breast may be involved as part of systemic disease
- Necrotising vasculitis
- With resultant active chronic inflammation, fat necrosis

Infectious Granulomas

- Mycobacteria (often TB)
- Fungi