

# RADY 401 Case Presentation

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SCHOOL OF MEDICINE  
Radiology

# Patient History and Workup

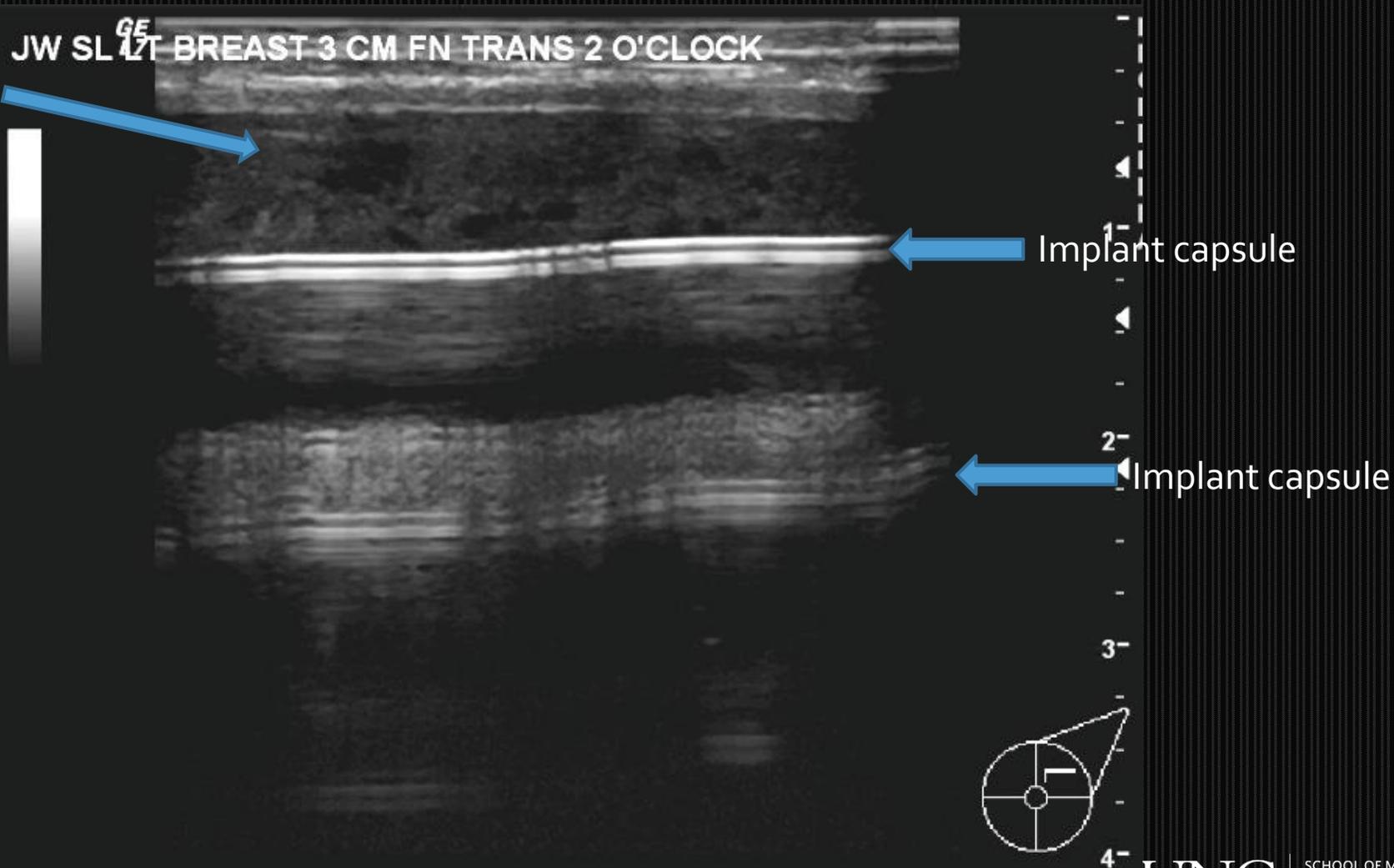
- 57 y.o. F w/ PMH of left breast DCIS, L. mastectomy, mammoplasty and bilateral implant surgery in 2016.
- Presented to the ED on Sep. 2018 w/ L. breast redness, pain and significant swelling. She first noticed swelling ~one year ago, but it dramatically worsened over the last week. Within the last week she developed a small breast ulcer. Denies trauma, fever, and vomiting.

# Imaging studies

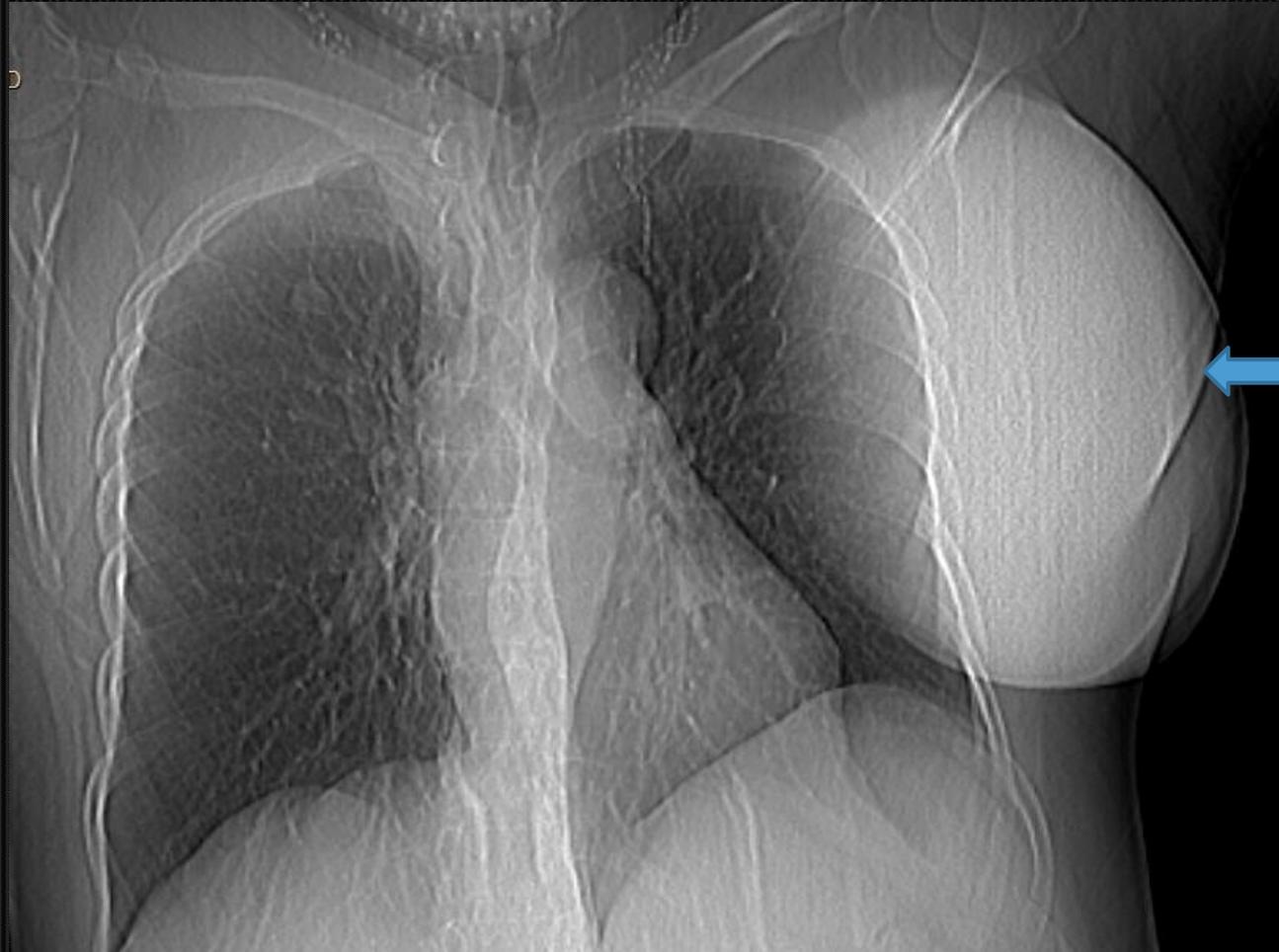
- Left breast US
- Lateral and PA chest X-ray
- Body CT
- US guided fluid aspiration

# Left Breast US

Subcutaneous fat

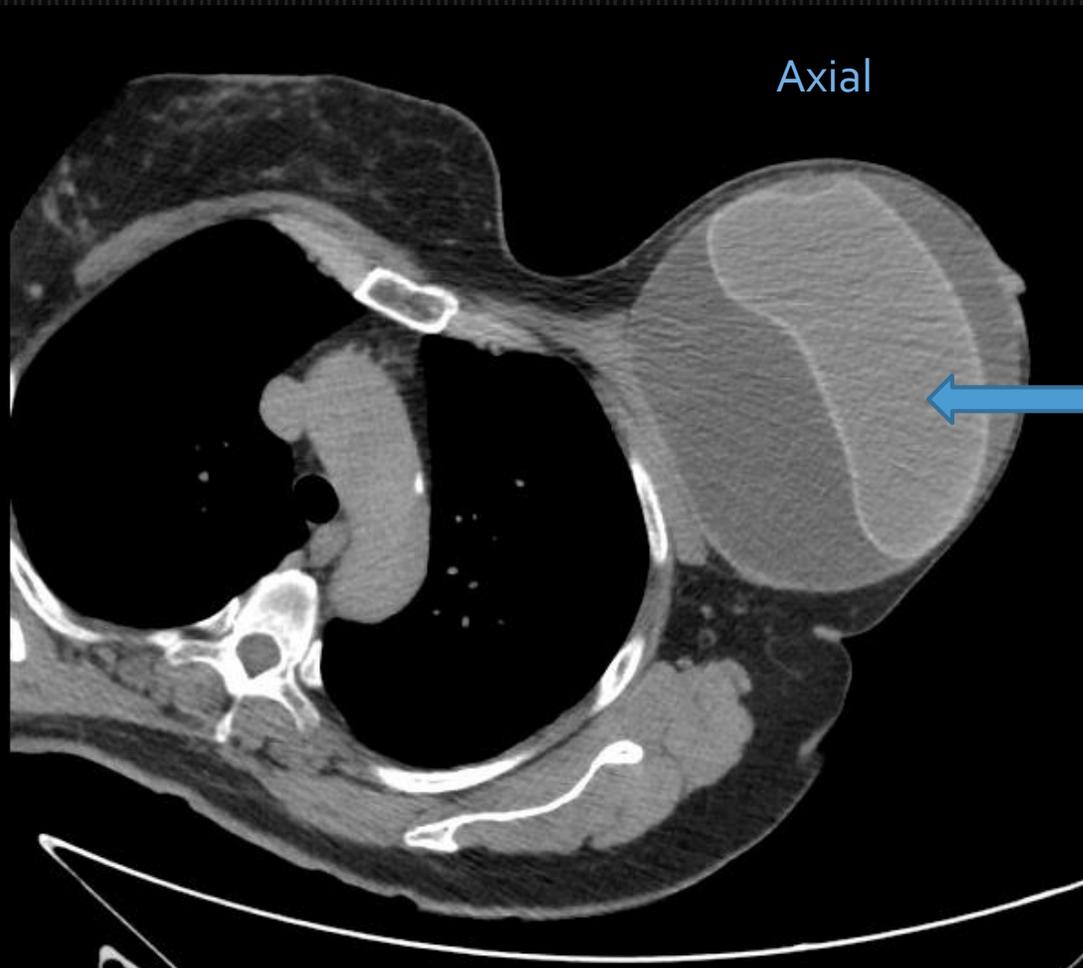


# PA Chest X-Ray

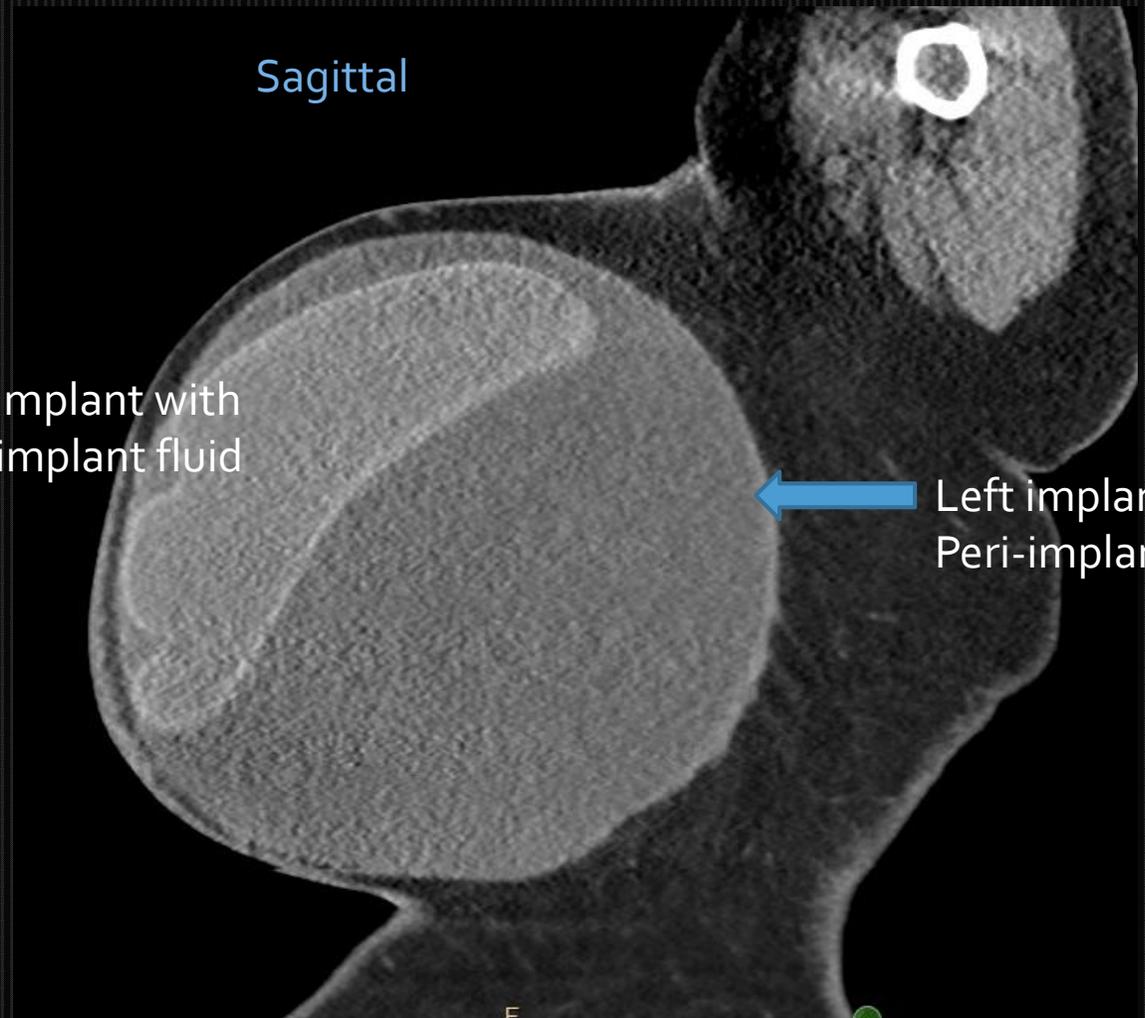


Marked  
enlargement of  
reconstructed  
left breast

# Body CT

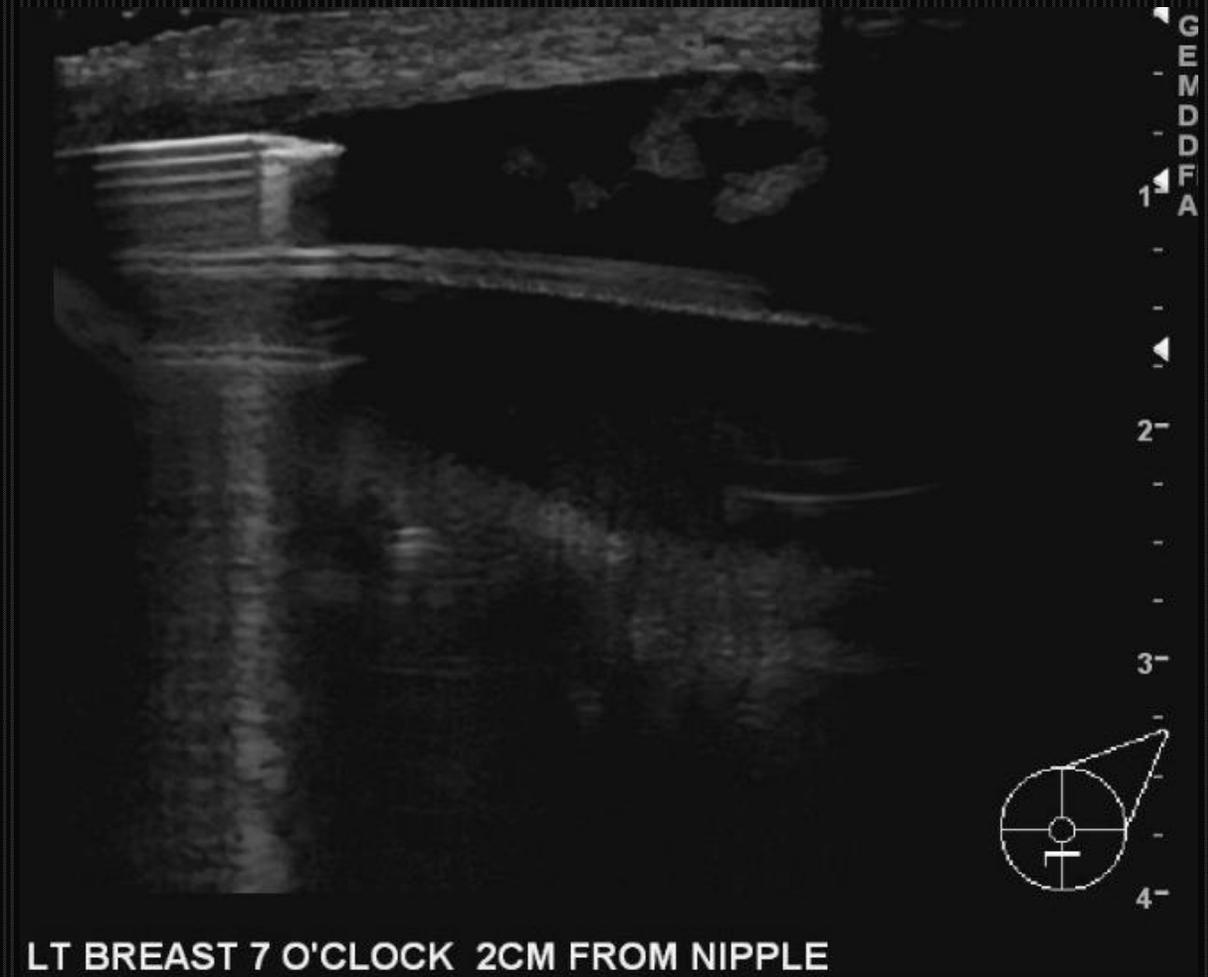
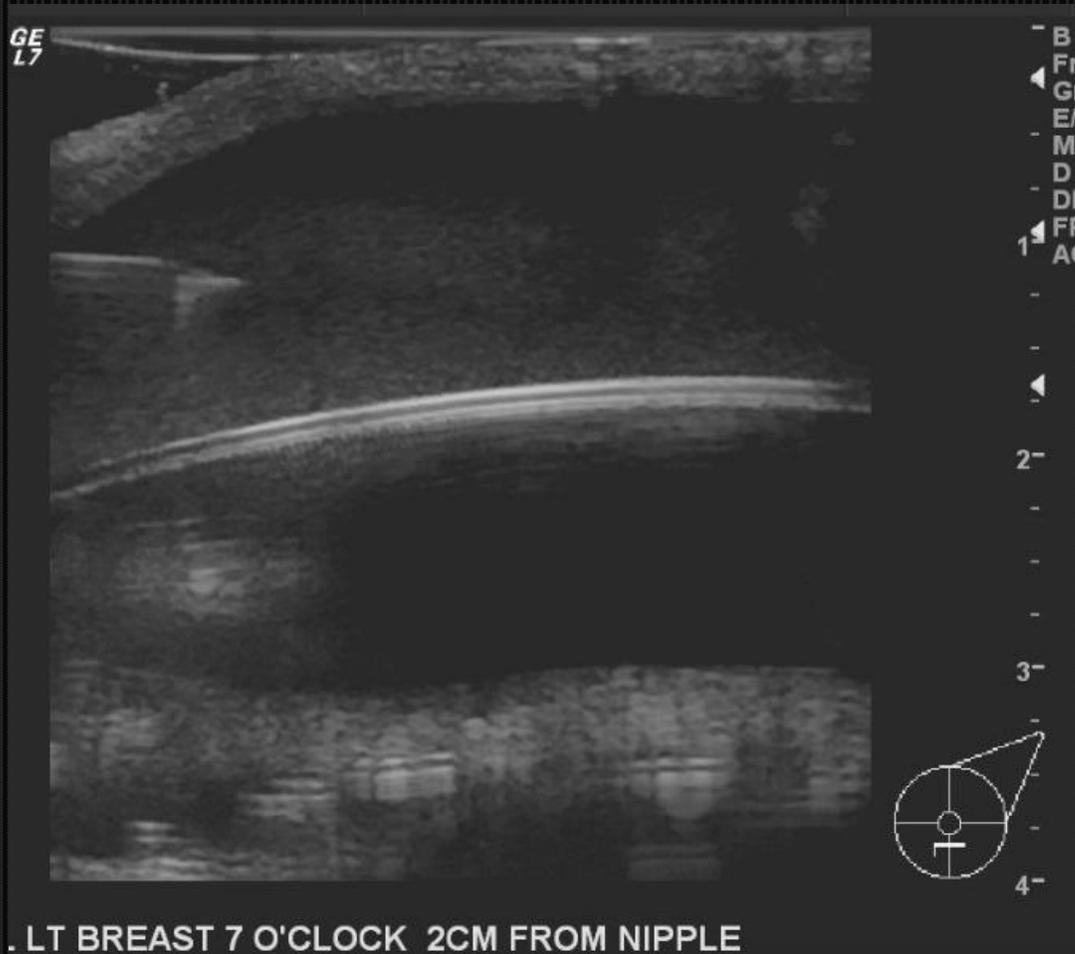


Left implant with  
peri-implant fluid



Left implant with  
Peri-implant fluid

# US Guided Aspiration



# Procedures

- US guided aspiration resulted in 600 ml. of brownish/red fluid. Pt. was very relieved.
- Underwent periprostatic capsulectomy and implant exchange. An additional 625 ml. of seroma was extracted.



## Work-up

- Fluid was sent to microbiology for bacterial cultures and gram stain analysis.
- Due to the suspicion of **breast implant-associated anaplastic large cell lymphoma (BIA-ALCL)** seroma was sent to the hemopathology lab for cytologic and immunohistochemical analysis.

# BIA-ALCL

- Recognized by the WHO as an official entity in 2016.
- Etiology unclear but likely results from chronic inflammation from breast implants. <sup>1-3</sup>
- National Comprehensive Cancer Network (NCCN), recommends work up in pts. who develop seroma a year or more after breast implant placement.
- Diagnosis is made by CD30 immunohistochemistry, followed by the presence of anaplastic large cells on cytology and a clonal T-cell population on cytometry. <sup>4</sup>

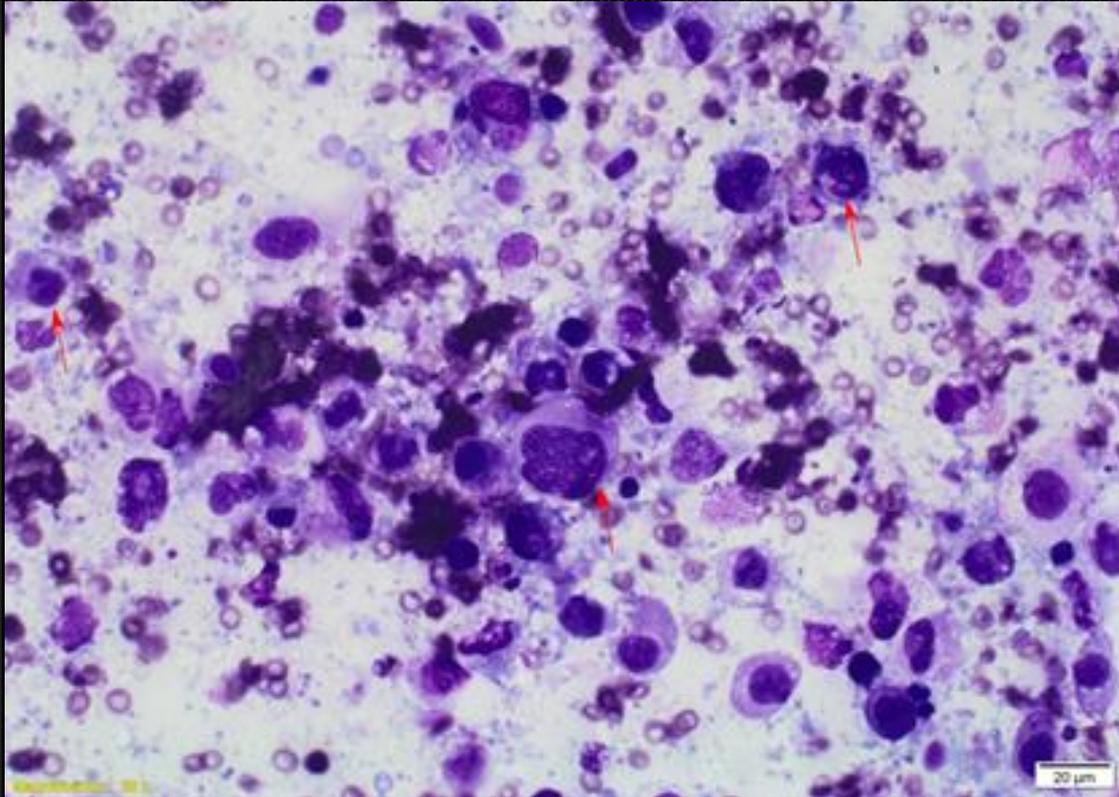
## BIA-ALCL - FDA

- Current literature report various estimates that BIA-ALCL may develop in 1 in between 3,817 to 30,000 women with textured breast implants.<sup>5</sup>
- As of September 30, 2017, the FDA had received a total of [414 medical device reports](#) of BIA-ALCL, including the death of nine patients.<sup>5</sup>
- FDA offers specific recommendations for providers (see next slide)

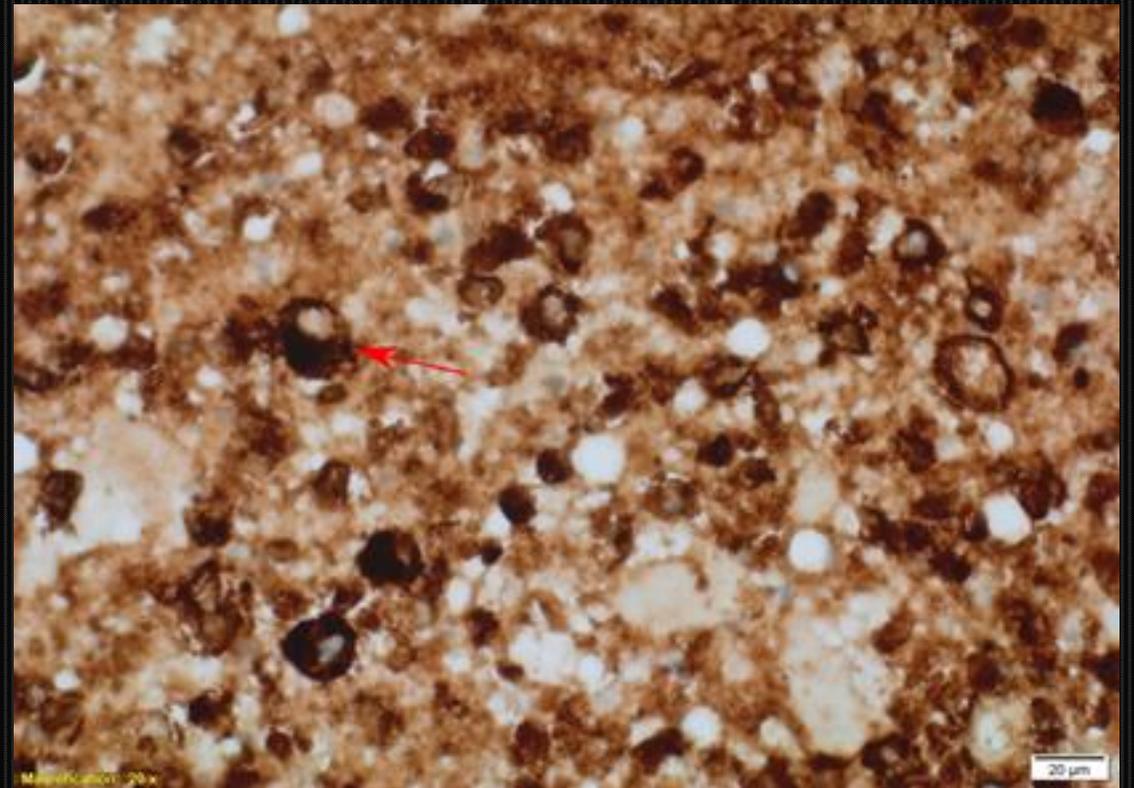
# BIA-ALCL - FDA Recommendations

- Provide all patients with the breast implant manufacturer's labeling as well as other educational material prior to implantation, and make sure they are aware of the benefits and risks of the different types of implants (texture vs smooth).<sup>5</sup>
- Consider the possibility of BIA-ALCL when you have a patient with late onset, persistent peri-implant seroma. If you have a patient with suspected BIA-ALCL, refer the individual's case to a MDC tumor board for evaluation.<sup>5</sup>
- When testing for BIA-ALCL, collect fresh seroma fluid and representative portions of the capsule and send for pathology tests to rule out BIA-ALCL. <sup>5</sup>
- Diagnostic evaluation should include cytological evaluation of seroma fluid with Wright Giemsa stained smears and cell block immunohistochemistry testing for cluster of differentiation (CD) and Anaplastic Lymphoma Kinase (ALK) markers.<sup>5</sup>

# Pathology Slides



Atypical lymphoid cells (examples arrowed) with embryo shaped nuclei.



CD30 immunohistochemical stain. The brown stained atypical lymphoid cells (examples arrowed) are CD30 positive, suggestive of BIA-ALCL.

Note: Images from journal of surgery Science PG, not from the patient!

# Laboratory Results

- Anaerobic and aerobic cultures demonstrated no growth and gram stain was negative.
- Cytologic studies found abundant macrophages, scattered neutrophils and lymphocytes.
- CD 30 Immunohistochemical staining showed faint staining of histocytes (negative).
- Light microscopy showed no morphological or immunohistochemical evidence of BIA-ALCL.

# Discharge

- Patient was discharged with a diagnosis of seroma and cellulitis.
- Advised to come back for follow up.

## In Summary

- Suspect BIA-ALCL in patients who present with late-onset seroma after breast implant surgery, typically textured silicone implants. Usually develops 7-8 years after surgery.
- Collect fluid and representative section of the breast capsule to pathology for analysis. Refer the case to a MDC tumor board.
- Follow recommended FDA diagnostic criteria.

# References

- 1) George EV, Pharm J, Houston C, Al-Quran S, Brian G, Dong H, Hai W, Reeves W, Yang LJ. Breast implant-associated ALK-negative anaplastic large cell lymphoma: a case report and discussion of possible pathogenesis. *Int J Clin Exp Pathol*. 2013 Jul 15;6(8):1631-42. Print 2013.
- 2) Bizjak M, Selmi C, Praprotnik S, Bruck O, Perricone C, Ehrenfeld M, Shoenfeld Y. Silicone implants and lymphoma: The role of inflammation. *J Autoimmun*. 2015
- 3) Center for Devices and Radiological Health. (2018, August 8). Breast Implants - Breast Implant-Associated Anaplastic Large Cell Lymphoma (BIA-ALCL). Retrieved December 11, 2018, from <https://www.fda.gov/MedicalDevices/ProductsandMedicalProcedures/ImplantsandProsthetics/BreastImplants/ucm239995.htm>
- 4) Leberfinger AN, Behar BJ, Williams NC, Rakszawski KL, Potochny JD, Mackay DR, Ravnic DJ. Breast Implant-Associated Anaplastic Large Cell Lymphoma: A Systematic Review. *JAMA Surg*. 2017 Dec 1;152(12):1161-1168.
- 5) Center for Devices and Radiological Health. (2018, August 8). Breast Implants - Breast Implant-Associated Anaplastic Large Cell Lymphoma (BIA-ALCL). Retrieved December 11, 2018, from <https://www.fda.gov/MedicalDevices/ProductsandMedicalProcedures/ImplantsandProsthetics/BreastImplants/ucm239995.htm>
- 6) Frame JD, Smith S, Kamel DA. Further Case Report from the United Kingdom of Breast Implant Associated Anaplastic Large Cell Lymphoma (BIA-ALCL) and a Reason to Avoid the Subpectoral Plane. *Journal of Surgery*. Vol. 4, No. 5, 2016