

# What Does the Pathologist Exactly Need from the Surgeon When Carrying Out a Lymph Node Biopsy?

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# Faculty/Presenter Disclosure

- Faculty: Brian Skinnider
- I have no relationship with commercial interests

# Objectives

- Outline the specific studies that are carried out on the excised lymph node tissue
- Describe what is meant by “the lymphoma protocol” in 2018
- Outline the recommended techniques for:
  - Tissue sampling
  - Amount of tissue needed
- Does a pathologist need to be present?

# Diagnosis of Lymphoma

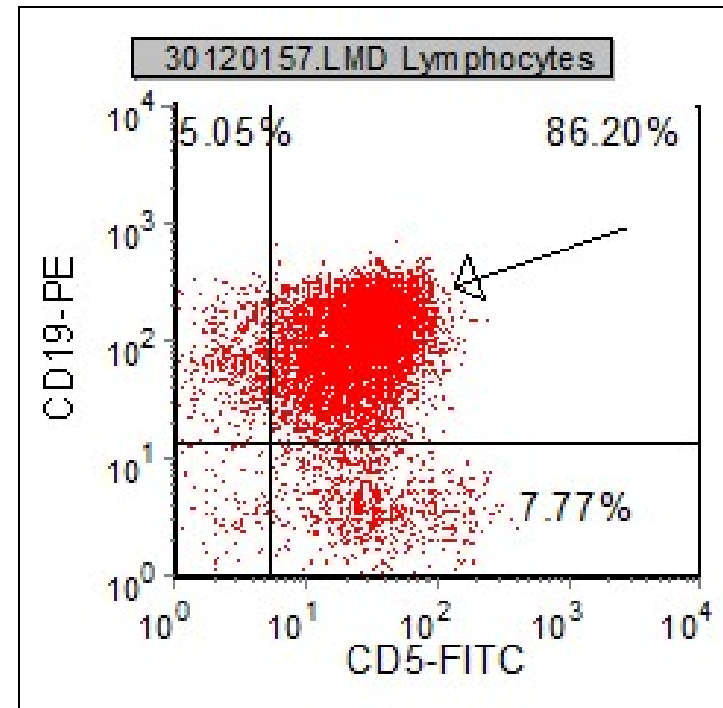
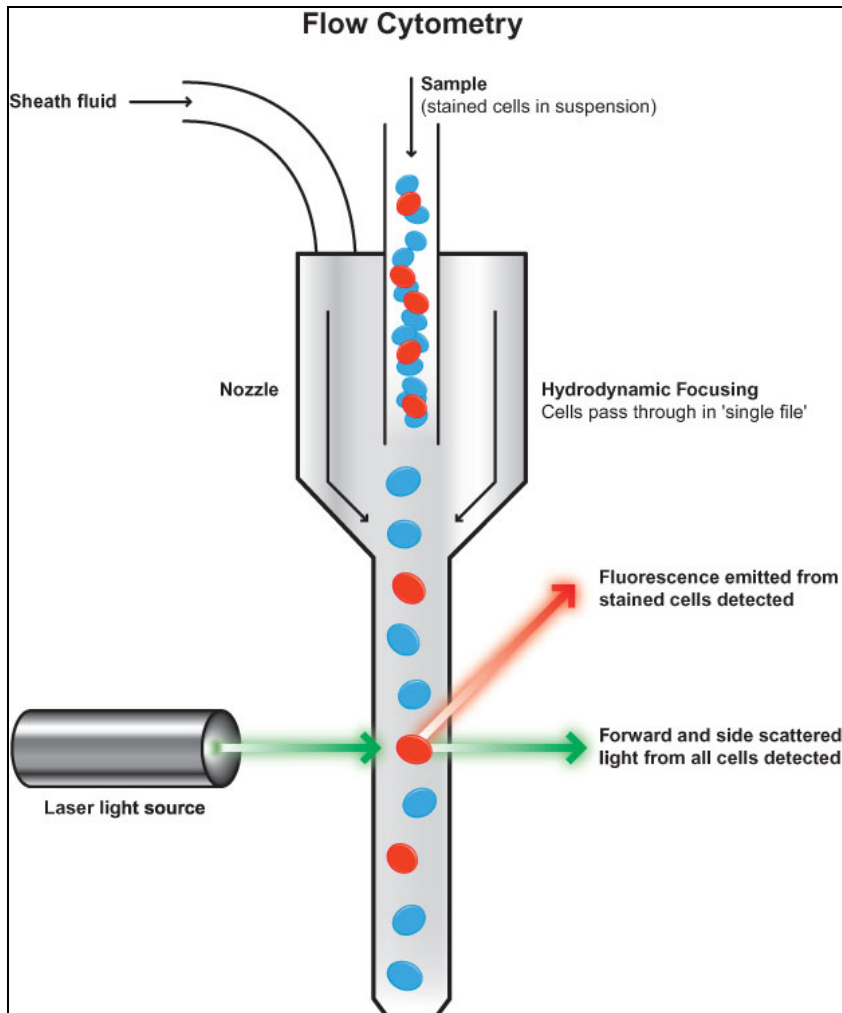
## Multiparameter approach:

- Morphology:
  - Architecture
  - Cytology
- Immunophenotype:
  - Flow cytometry
  - Immunohistochemistry
- +/- Lymphoid clonality
  - PCR
- +/- Chromosomal translocations
  - FISH analysis

# “Lymphoma Protocol”

	1990's	2018
Morphology	Formalin-fixed	Formalin-fixed
Immunohistochemistry	Formalin-fixed	Formalin-fixed
Flow cytometry	Fresh	Fresh
PCR	Formalin-fixed or fresh	Formalin-fixed
Cytogenetics, FISH	Fresh	Formalin-fixed

# Flow cytometry



# Flow cytometry

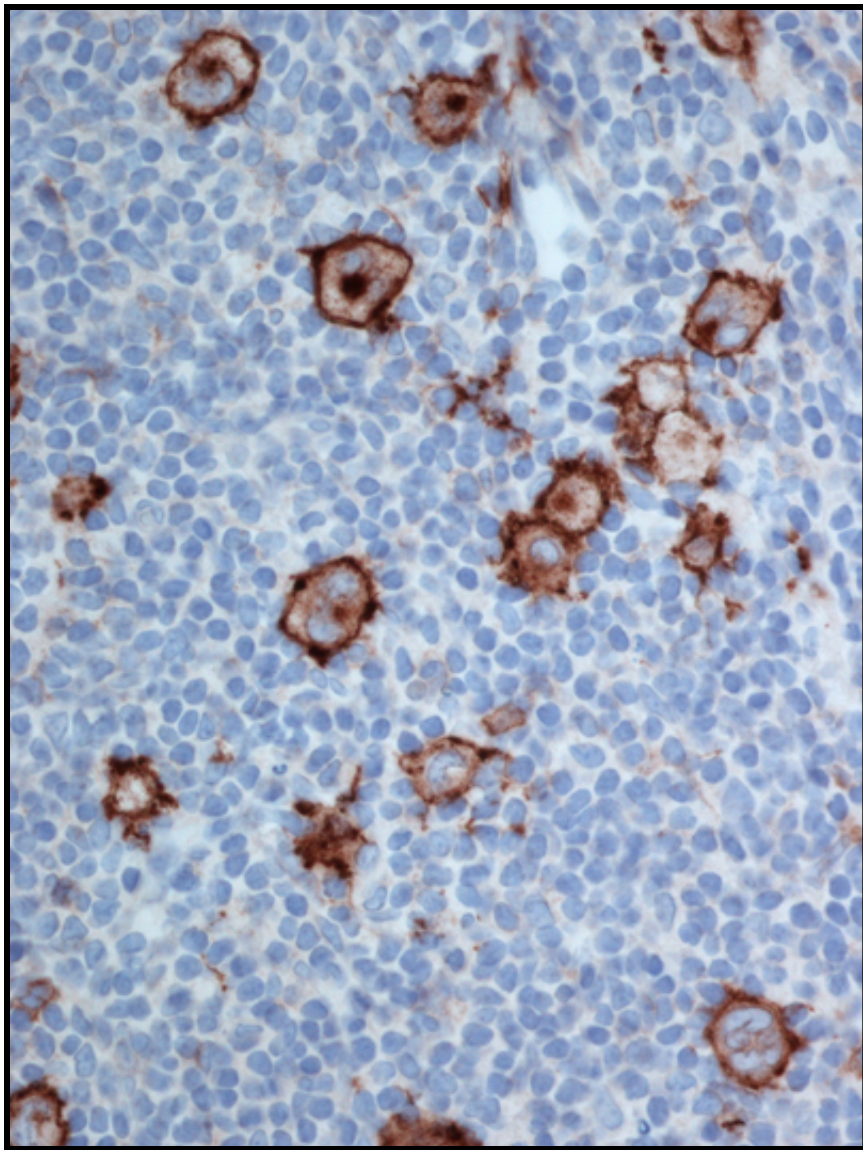
- Requires fresh tissue, processed as soon as possible
- 1 cm<sup>3</sup> piece of tissue needed
- Flow cytometry is not essential in every case, but can be very helpful in some cases
- Most useful for:
  - Differentiating reactive lymph node from low grade lymphoma (staining for kappa and lambda)
  - Differentiating low grade B cell lymphomas

# Immunohistochemistry

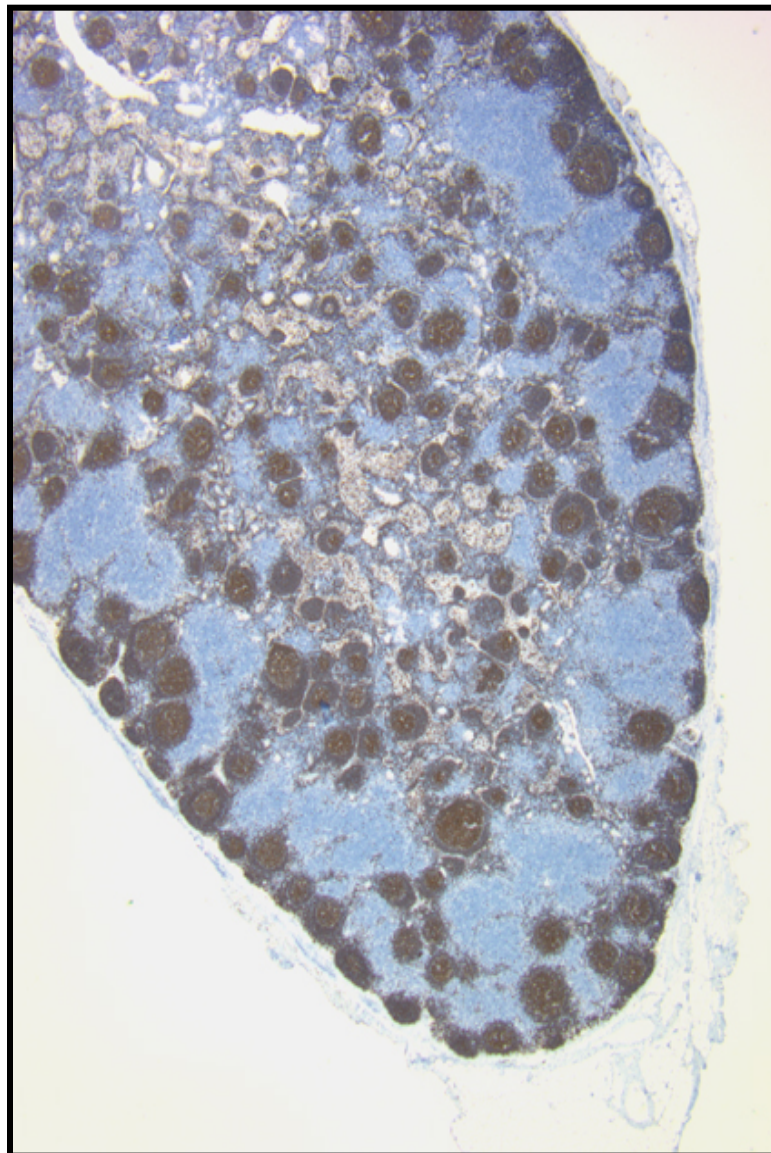
- Performed on formalin-fixed paraffin-embedded tissue
- Unlike flow cytometry, can correlate expression of different markers with morphology
- Wide variety of antibodies available
- Kappa and lambda do not work well by immunohistochemistry



CD30 identifying Reed Sternberg cells  
in Hodgkin lymphoma



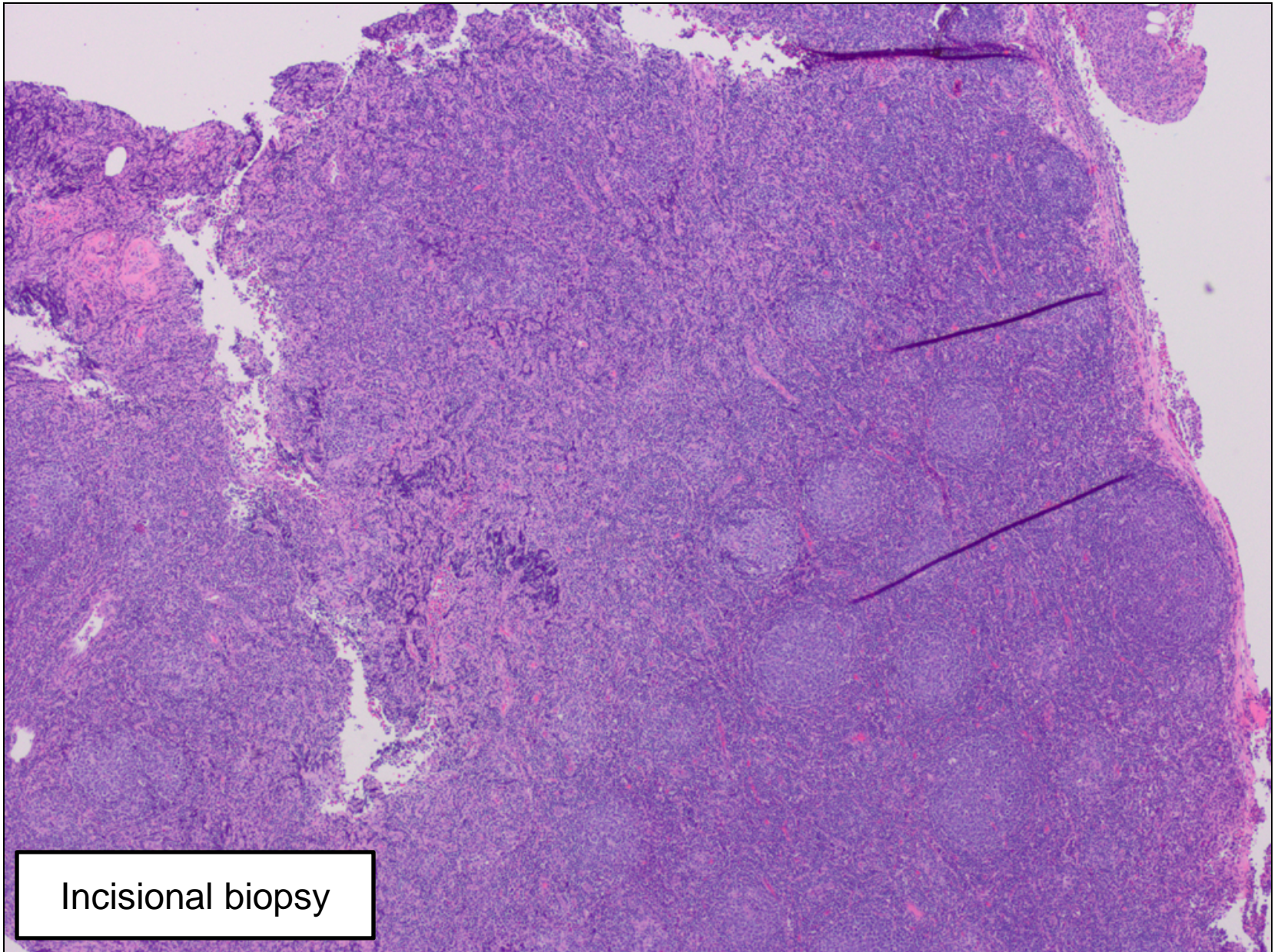
CD20 expression in a benign  
reactive lymph node



# Lymph node biopsies

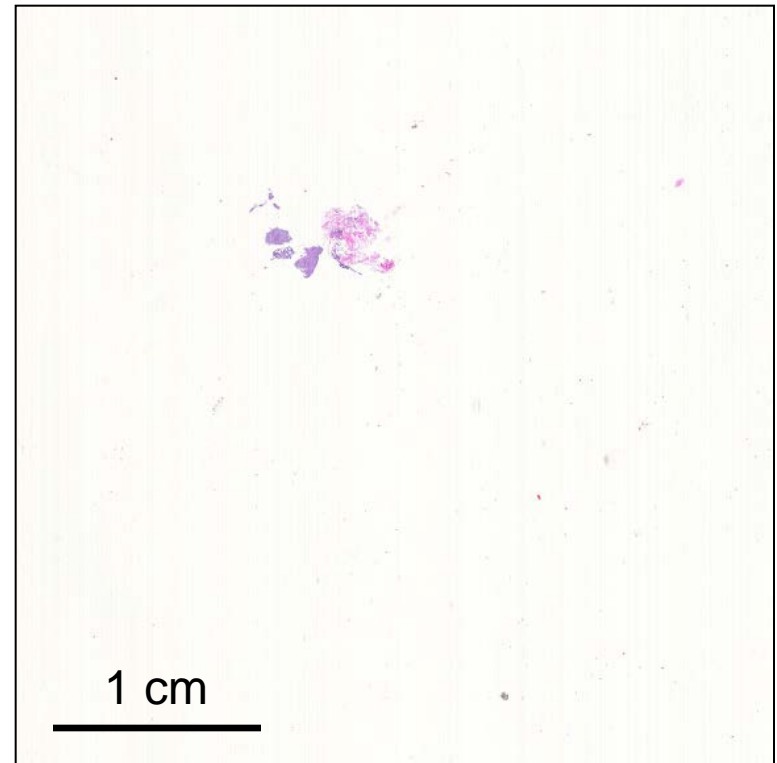
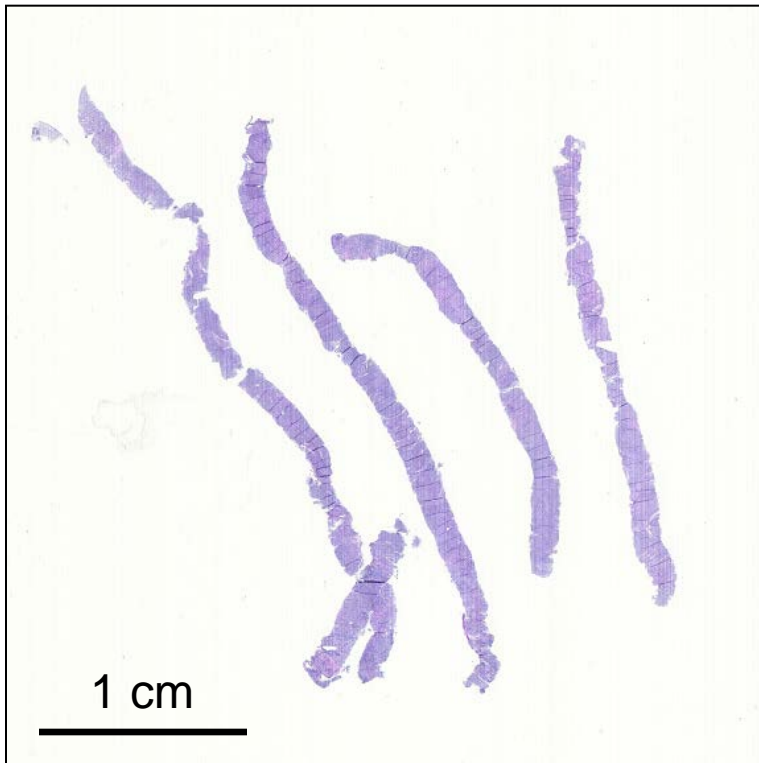
- Core, incisional, excisional
- *Preference: excisional biopsy of intact largest lymph node*
- Architecture difficult to assess on small biopsies
- Lymphoid tissue is fragile and easily crushed, especially in core biopsies
- Capsule of an intact lymph node keeps morphology intact





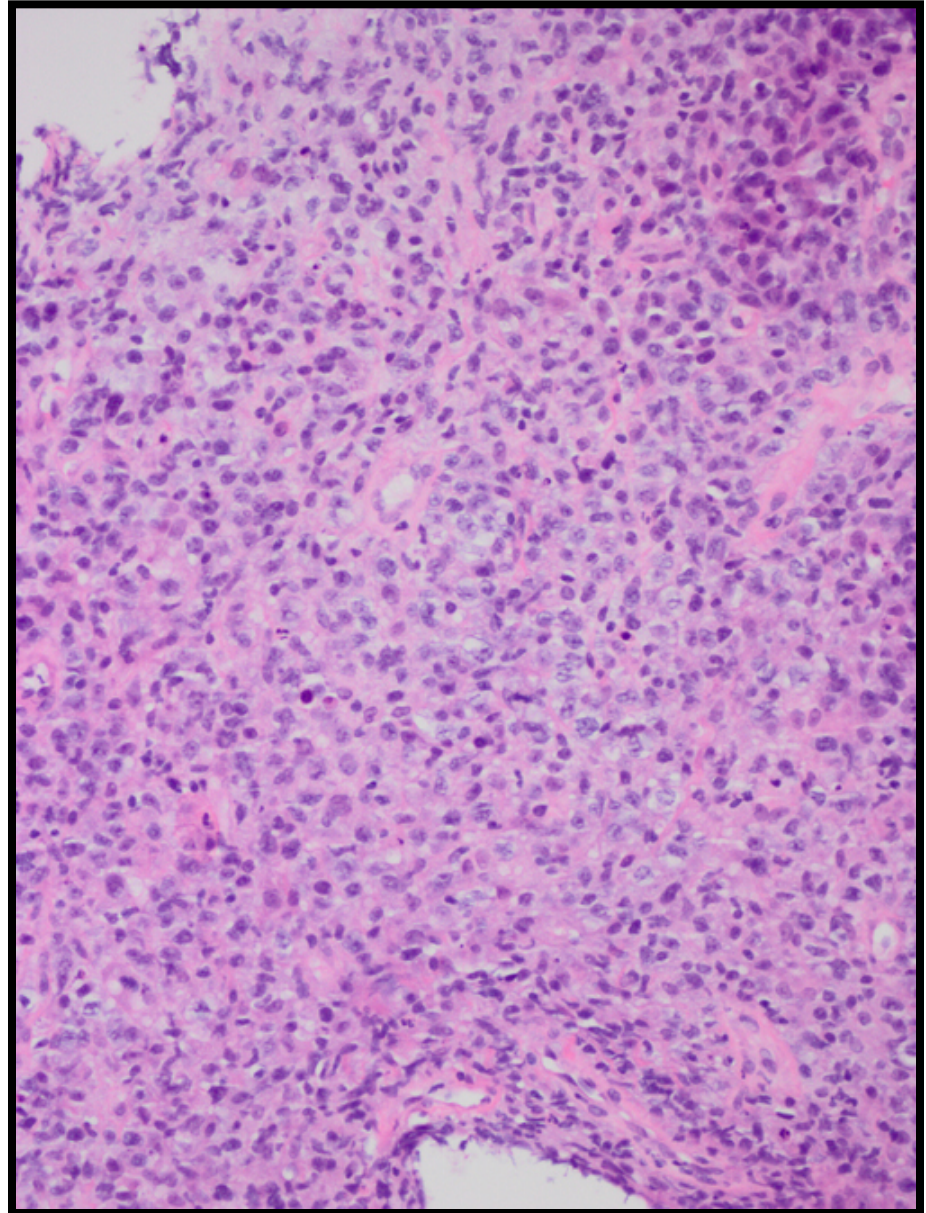
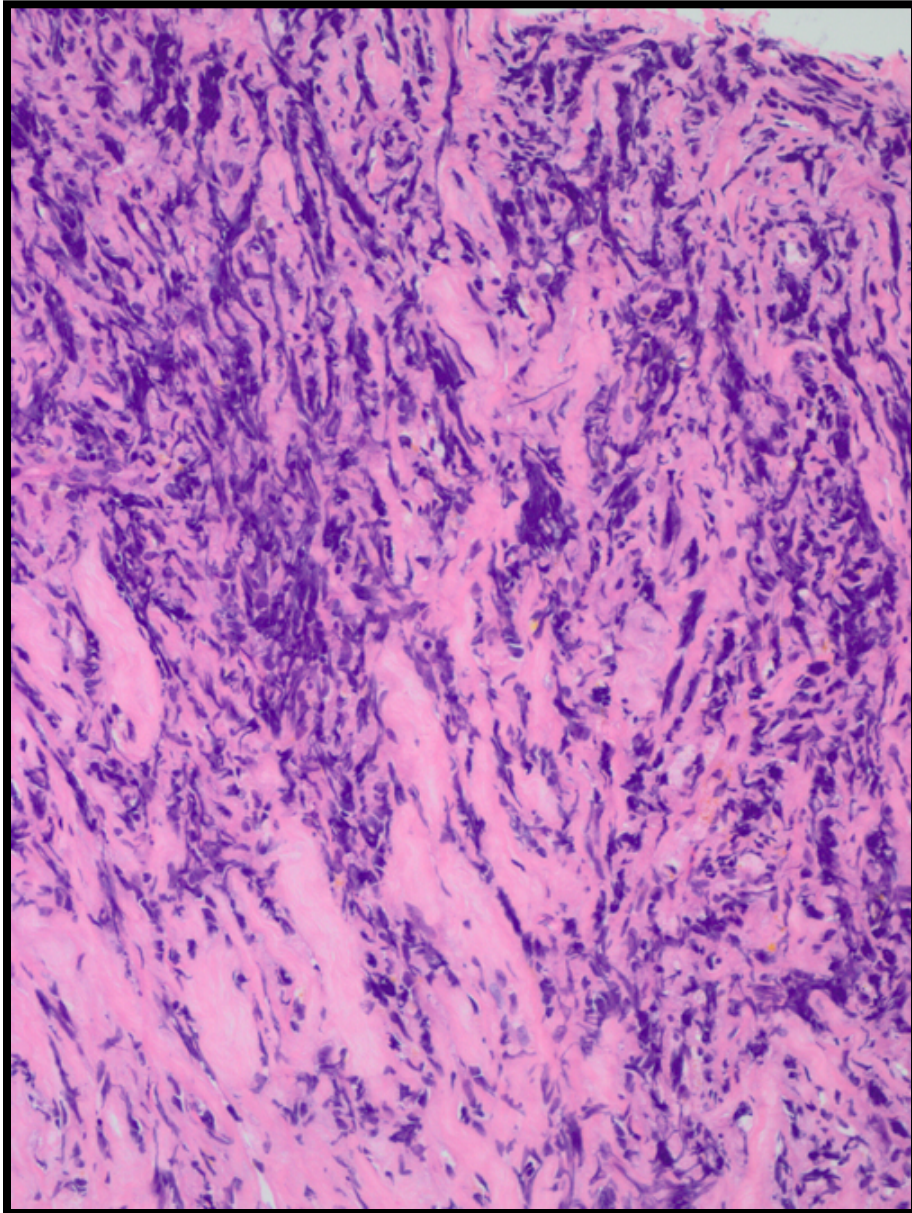
Incisional biopsy

# Core Biopsy Quantity and Quality is Variable

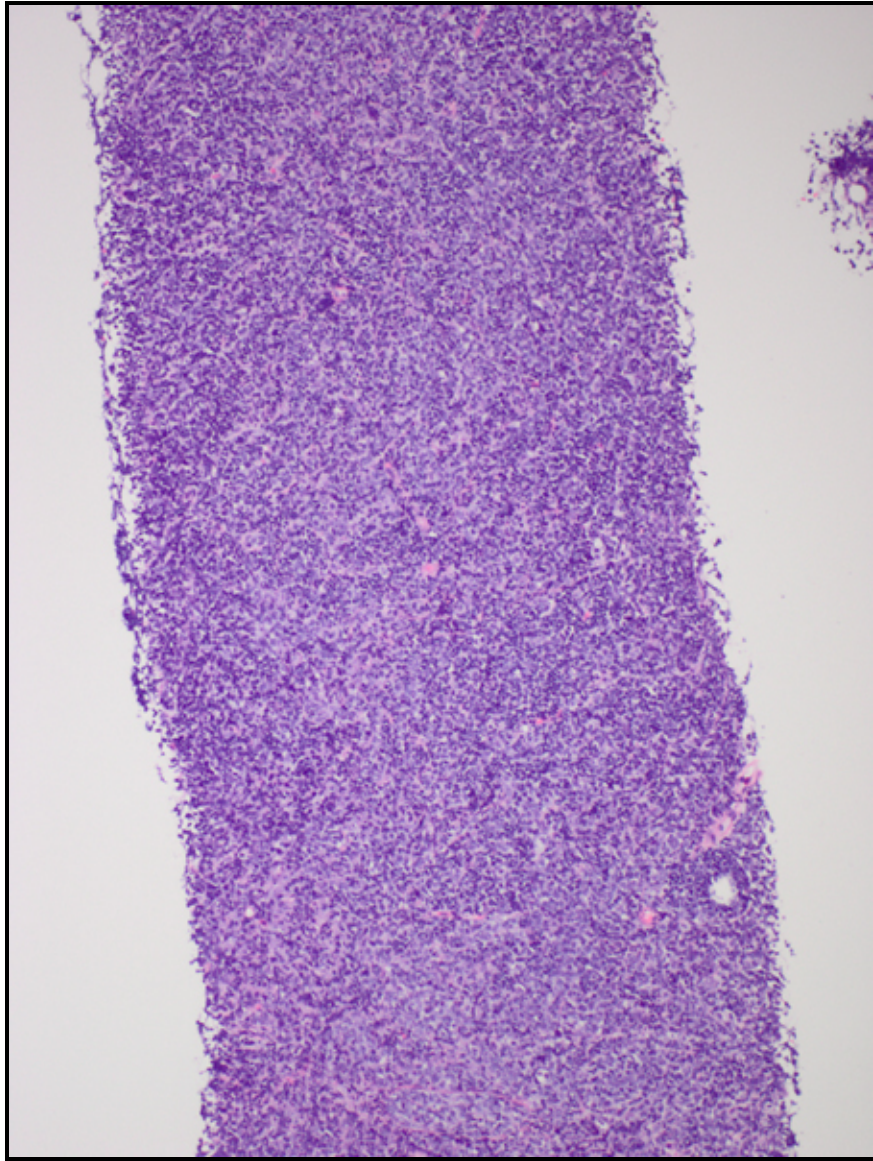




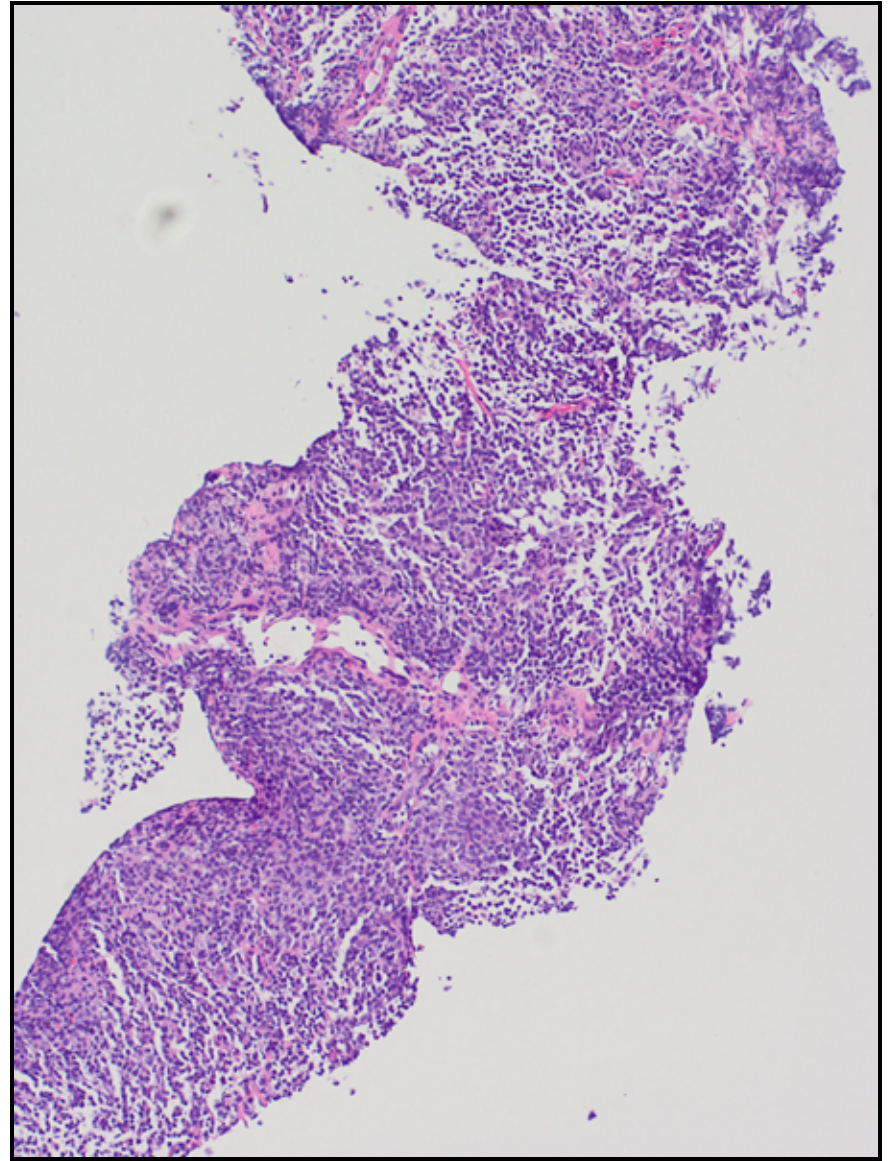
# Core biopsies are often crushed







Sent in formalin

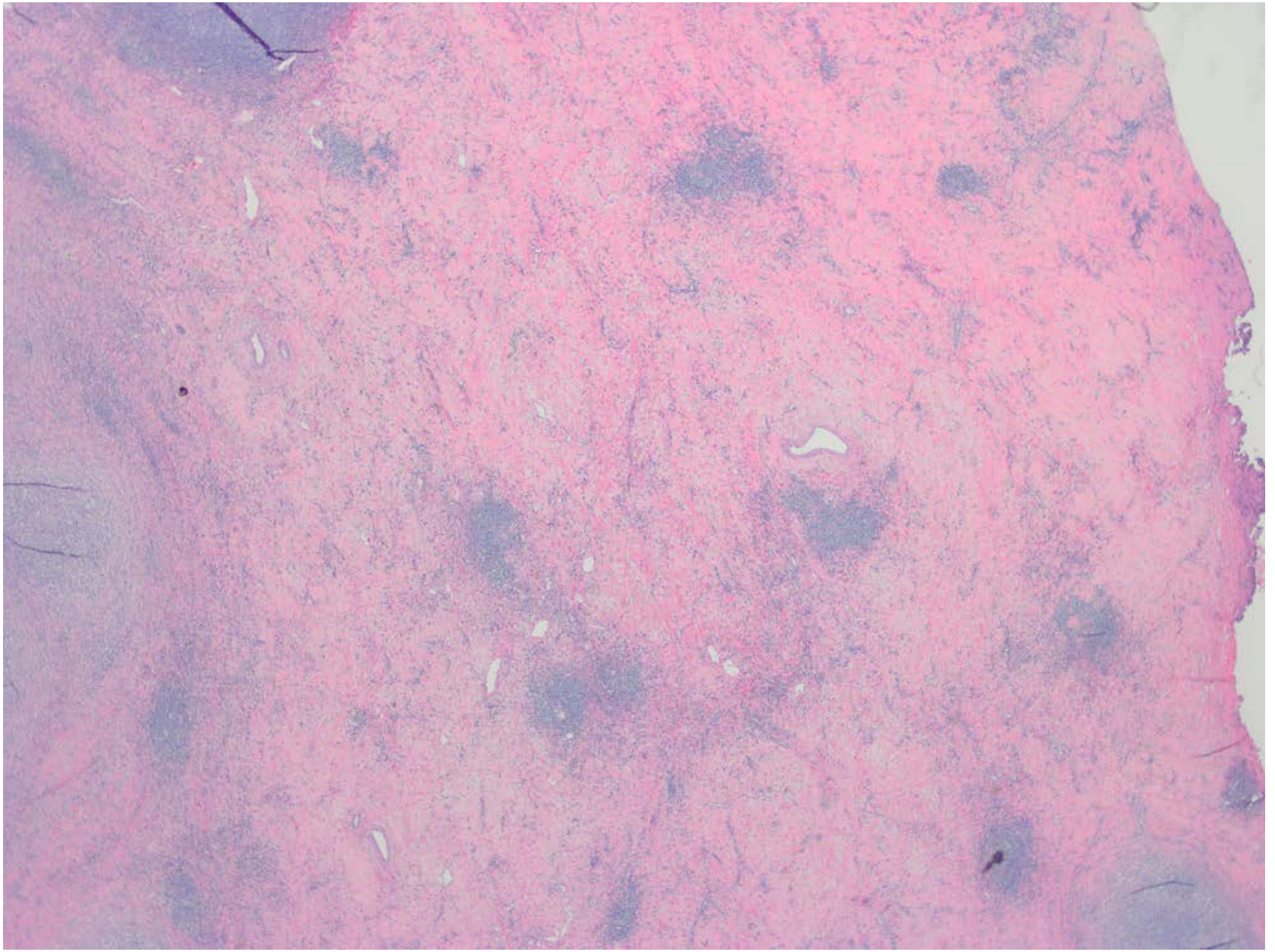


Sent floating in saline

# Does the pathologist have to be there?

- Lymph node tissue can remain viable for several hours if refrigerated (on saline-soaked gauze)
- Do you need a pathologist for frozen section?
- Tissue used for frozen section will not be good for morphology or immunohistochemistry
  - If you are getting a large biopsy, NO
  - If you are only able to get a limited sample at the edge of the lesion, YES







# Summary

- “Lymphoma Protocol” still requires fresh tissue for flow cytometry
- Lymphoid tissue is fragile and easily crushed
- Send tissue on saline-soaked gauze, not floating in saline
- Pathologists would prefer not to do frozen sections if lymphoma is likely, but can do them to confirm lesional tissue is present