



Protocol for the Examination of Biopsy Specimens from Patients with Ductal Carcinoma In Situ (DCIS) of the Breast

Version: 1.0.1.0

Protocol Posting Date: June 2021

The use of this protocol is recommended for clinical care purposes but is not required for accreditation purposes.

This protocol may be used for the following procedures AND tumor types:

Procedure	Description
Biopsy	Includes specimens designated needle biopsy, fine needle aspiration and others (for excisional biopsy, see below)
Tumor Type	Description
Ductal carcinoma in situ without invasive carcinoma or microinvasion	
Paget disease of the nipple not associated with invasive breast carcinoma	
Encapsulated papillary carcinoma without invasive carcinoma	
Solid papillary carcinoma without invasive carcinoma	

The following should NOT be reported using this protocol:

Procedure
Resection (consider Breast DCIS Resection protocol)
Excisional biopsy (consider Breast DCIS Resection protocol)
Tumor Type
Any tumor with invasive carcinoma (consider the Breast Invasive Carcinoma Biopsy protocol)
Lymphoma (consider the Hodgkin or non-Hodgkin Lymphoma protocols)
Sarcoma (consider the Soft Tissue protocol)

Authors

Patrick L. Fitzgibbons, MD, FCAP*; James L. Connolly, MD*.

With guidance from the CAP Cancer and CAP Pathology Electronic Reporting Committees.

* Denotes primary author.

Accreditation Requirements

The use of this case summary is recommended for clinical care purposes but is not required for accreditation purposes. The core and conditional data elements are routinely reported. Non-core data elements are indicated with a plus sign (+) to allow for reporting information that may be of clinical value.

Summary of Changes**v 1.0.1.0**

- General Reformatting
- Elements that are recommended for clinical care purposes are designated as Core and Conditional (indicated by bolded text), while Non-core elements are now indicated with a plus (+) sign.

Reporting Template

Protocol Posting Date: June 2021

Select a single response unless otherwise indicated.

CASE SUMMARY: (DCIS OF THE BREAST: Biopsy)

This template is recommended for reporting biopsy specimens, but is not required for accreditation purposes.

SPECIMEN

Procedure

- Needle biopsy
- Fine needle aspiration
- Other (specify): _____
- Not specified

Specimen Laterality

- Right
- Left
- Not specified

TUMOR

+Tumor Site (select all that apply)

- Upper outer quadrant
- Lower outer quadrant
- Upper inner quadrant
- Lower inner quadrant
- Central
- Nipple
- Clock position

Specify Clock Position (select all that apply)

- 1 o'clock
- 2 o'clock
- 3 o'clock
- 4 o'clock
- 5 o'clock
- 6 o'clock
- 7 o'clock
- 8 o'clock
- 9 o'clock
- 10 o'clock
- 11 o'clock
- 12 o'clock
- Specify distance from nipple in Centimeters (cm): _____ cm
- Other (specify): _____
- Not specified

Histologic Type (Note [A](#))

- Ductal carcinoma in situ (DCIS)

- Paget disease
- Encapsulated papillary carcinoma without invasive carcinoma
- Solid papillary carcinoma without invasive carcinoma

+Architectural Patterns (Note [B](#)) (select all that apply)

- Comedo
- Paget disease (DCIS involving nipple skin)
- Cribriform
- Micropapillary
- Papillary
- Solid
- Other (specify): _____

Nuclear Grade (Note [C](#))

- Grade I (low)
- Grade II (intermediate)
- Grade III (high)
- Other (specify): _____
- Cannot be determined: _____

Necrosis (Note [D](#))

- Not identified
- Present, focal (small foci or single cell necrosis)
- Present, central (expansive "comedo" necrosis)
- Other (specify): _____
- Cannot be determined: _____

+Microcalcifications (Note [E](#)) (select all that apply)

- Not identified
- Present in DCIS
- Present in non-neoplastic tissue
- Other (specify): _____

ADDITIONAL FINDINGS (Note [F](#))

+Additional Findings (specify): _____

SPECIAL STUDIES

For hormone receptor and HER2 reporting, the CAP Breast Biomarker Template should be used. www.cap.org/cancerprotocols.

+Breast Biomarker Studies (specify pending studies): _____

COMMENTS

Comment(s): _____

Explanatory Notes

A. Histologic Type

This protocol applies only to cases of DCIS. The protocol for invasive carcinoma of the breast applies if invasion or microinvasion (less than or equal to 1 mm) is present. Pleomorphic lobular carcinoma in situ (LCIS) has overlapping features with DCIS and may be treated similarly, but at present there is insufficient evidence to establish definitive recommendations for treatment. Thus, pleomorphic LCIS is not currently included in the pTis classification.

When DCIS involves nipple skin only, without underlying invasive carcinoma or DCIS, the classification is DCIS (ie, pTis [Paget]). The majority of these cases are strongly positive for HER2.

B. Architectural Pattern

The architectural pattern has been reported traditionally for DCIS.^{1,2} However, nuclear grade and the presence of necrosis are more predictive of clinical outcome.

References

1. Schwartz GF, Lagios MD, Carter D, et al. Consensus conference on the classification of ductal carcinoma in situ. *Cancer*. 1997;80:1798-1802.
2. Silverstein MJ, Lagios MD, Recht A, et al. Image-detected breast cancer: state of the art diagnosis and treatment. *J Am Coll Surg*. 2005;201:586-597.

C. Nuclear Grade

The nuclear grade of DCIS is determined using 6 morphologic features (Table 1).^{1,2}

Table 1. Nuclear Grade of Ductal Carcinoma In Situ

Feature	Grade I (Low)	Grade II (Intermediate)	Grade III (High)
Pleomorphism	Monotonous (monomorphic)	Intermediate	Markedly pleomorphic
Size	1.5 to 2 x the size of a normal RBC or a normal duct epithelial cell nucleus	Intermediate	>2.5 x the size of a normal RBC or a normal duct epithelial cell nucleus
Chromatin	Usually diffuse, finely dispersed chromatin	Intermediate	Usually vesicular with irregular chromatin distribution
Nucleoli	Only occasional		Prominent, often multiple
Mitoses	Only occasional	Intermediate	May be frequent
Orientation	Polarized toward luminal spaces	Intermediate	Usually not polarized toward the luminal space

Definition: RBC, red blood cell.

References

1. Schwartz GF, Lagios MD, Carter D, et al. Consensus conference on the classification of ductal carcinoma in situ. *Cancer*. 1997;80:1798-1802.
2. Radiation Therapy Oncology Group (RTOG). *Evaluation of Breast Specimens Removed by Needle Localization Technique*. Available at: <https://www.rtog.org/LinkClick.aspx?fileticket=G4Pamvh2mBg%3D&tabid=290>. Accessed September 18, 2018.

D. Necrosis

The presence of necrosis¹ is correlated with the finding of mammographic calcifications (ie, most areas of necrosis will calcify). DCIS that presents as mammographic calcifications often recurs as calcifications. Necrosis can be classified as follows:

- **Central (“comedo”):** The central portion of an involved ductal space is replaced by an area of expansive necrosis that is easily detected at low magnification. Ghost cells and karyorrhectic debris are generally present. Although central necrosis is generally associated with high-grade nuclei (ie, comedo DCIS), it can also occur with DCIS of low or intermediate nuclear grade. This type of necrosis often correlates with a linear and/or branching pattern of calcifications on mammography.
- **Focal (punctate):** Small foci, indistinct at low magnification, or single cell necrosis.

Necrosis should be distinguished from secretory material, which can also be associated with calcifications, cytoplasmic blebs, and histiocytes, but does not include nuclear debris.

References

1. Schwartz GF, Lagios MD, Carter D, et al. Consensus conference on the classification of ductal carcinoma in situ. *Cancer*. 1997;80:1798-1802.

E. Microcalcifications

DCIS found in biopsies performed for microcalcifications will almost always be at the site of the calcifications or in close proximity.^{1,2,3} The presence of the targeted calcifications in the specimen should be confirmed by specimen radiography. The pathologist must be satisfied that the specimen has been sampled in such a way that the lesion responsible for the calcifications has been examined microscopically. The relationship of the radiologic calcifications to the DCIS should be indicated.

References

1. Owings DV, Hann L, Schnitt SJ, How thoroughly should needle localization breast biopsies be sampled for microscopic examination? A prospective mammographic/pathologic correlative study. *Am J Surg Pathol*. 1990;14:578-583.
2. Association of Directors of Anatomic and Surgical Pathology. *Recommendations for the Reporting of Breast Carcinoma*. Updated September 2004, Version 1.1. www.adasp.org/Checklists/Checklists.htm. Accessed June 18, 2008.
3. Silverstein MJ, Lagios MD, Recht A, et al. Image-detected breast cancer: state of the art diagnosis and treatment. *J Am Coll Surg*. 2005;201:586-597.

F. Additional Findings

If the biopsy was performed for a benign lesion and the DCIS is an incidental finding, this should be documented. An example would be the finding of DCIS in an excision for a palpable fibroadenoma. In some cases, other pathologic findings are important for the clinical management of patients.