**UW Health Breast Center Pathology Guidelines**

**(Surgery, Imaging and Pathology)**

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**Note/Disclaimer: Each patient scenario is unique and these Guidelines are designed to help streamline care for the patients seen by UW Health providers but individual physician and patient decision making may result in a variance from these guidelines.**

**Core Needle Biopsy Pathology**

**Guidelines are for core needle biopsy results that are assessed as radiology-pathology concordant by the radiologist. All discordant cases will be recommended for additional tissue sampling.**

**ADH (Atypical Ductal Hyperplasia):**

|  |  |  |
| --- | --- | --- |
| **Patient characteristics/findings** | **Clinical Management** | **Imaging Recommendation and Follow-up**  |
| * Biopsy result of ADH
 | *Patient disposition after biopsy:** Referral to breast surgeon.

*Surgical Management:** Recommend surgical excision. Select patients with low-risk criteria may be considered for observation.
* Consider clinical trials if available
 | Referral to breast surgeon for discussion of excision.If not excised* Diagnostic imaging (mammogram +/- ultrasound) follow-up at 6, 12, and 24 months (BI-RADS category 3). If stable at 24 months, resume routine screening (BI-RADS category 2).
* NOTE: diagnostic imaging should also include breast MRI in 6 months if the finding was MRI detected.
 |

Upgrade rates to invasive cancer or DCIS at the time of surgical excision vary from 3-35% in larger series which described use of core biopsies at least 11 gauge in size. At surgical excision, approximately 20% of identified malignant lesions will be invasive cancer (as opposed to DCIS).Lower upgrade rates (1-5%) have been described for selected subgroups of patients perceived to be at lower risk of malignancy based on the following criteria:

* focal atypia as assessed by pathology
* complete removal of calcifications on post-procedure imaging (recognizing post-image is not perfect assessment of removal)
* NOT assessed as i.e. borderline DCIS by pathology)
* absence of necrosis
* absence of mass on mammography
* absence of symptoms

One study reported a higher rate of upgrade in “low-risk” patients (17%), but this study did not assess whether or not the target lesion was removed (found to an important criteria in other studies).

For patients who meet criteria for a lower-risk ADH lesion, observation and follow-up with mammogram may be considered after discussing the risks and benefits of surgical excision with the patient.

ADH identified on screening MRI followed by MRI biopsy has a higher upgrade rate (26-30%). This may relate to baseline personal risk which was driving the receipt of the screening MRI. Surgical excision is recommended for patients with ADH identified by MRI.

**Potential Smart Phrase for Surgeon Use:** In patients with atypical ductal hyperplasia at core needle biopsy, there is a risk of finding an associated malignancy at the time of surgical excision in 3-35% of patients. Select patients with low-risk features may be considered for observation with mammogram follow-up due to a lower upgrade rate of 1-5%. If excision is not performed, follow-up imaging at 12 months is recommended to assess stability of the imaging finding.

Pertinent References

Menes TS, Rosenberg R, Balch S, et al. Upgrade of high-risk breast lesions detected on mammography in the Breast Cancer Surveillance Consortium. Am J Surgery 2014; 207; 24-31.

Deshaies I, Provencher L, Jacob S, et al. Factors associated with upgrading to malignancy at surgery of atypical ductal hyperplasia diagnosed on core biopsy. The Breast. 2011. 20:50-55.

Lourenco AP, Khalil H, Sanford M, Donegan L. High-risk lesions at MRI-guided breast biopsy: frequency and rate of underestimation. AJR. 2014. 203:682-6.

Nguyen CV, Albarracin CT, Whitman GJ, Lopez A, Sneige N. Atypical ductal hyperplasia in directional vacuum-assisted biopsy of breast microcalcifications: considerations for surgical excision. Ann Surg Oncol. 2011. 18:752-761.

Pena A, Shah SS, Fazzio RT, et al. Multivariate model to identify women at low risk of cancer upgrade after a core needle biopsy diagnosis of atypical ductal hyperplasia. Breast Cancer Res Treat. 2017. 164:295-304.

Strigel RM,Eby PR, Demartini WB, et al. Frequency, upgrade rates, and characteristics of high-risk lesions initially identified with breast MRI. AJR. 2010. 195:792-8.

**FEA (Flat Epithelial Atypia):**

|  |  |  |
| --- | --- | --- |
| **Patient characteristics/findings** | **Clinical Management** | **Imaging Recommendation and Follow-up**  |
| Biopsy result of pure (isolated)FEA:* No additional atypical or high-risk lesion identified (ie. No ADH, ALH, LCIS)

*AND** The targeted finding was isolated calcifications and the calcifications are assessed by the radiologist as completely removed
 | *Patient disposition after biopsy:** No referral to breast surgeon

*Surgical management:** Excision not recommended given overall low rate of upgrade at excision (<3%).
 | * Diagnostic imaging (mammogram +/- ultrasound) follow-up at 12 months, then resume routine screening if stable.
* If stable, site assessed on imaging as BI-RADS 2
 |
| Biopsy result of FEA with an associated atypical or high-risk lesions (ADH, ALH, LCIS) | *Patient disposition after biopsy:** Referral to Surgical NP/PA or breast surgeon if recommended based on associated pathology identified on biopsy.

*Surgical management:** Management as per guideline for the atypical or high-risk lesion.
 | * Management as per guideline for the atypical or high-risk lesion.
 |
| Biopsy result of pure (isolated)FEA *AND*Imaging finding was calcifications and the calcifications are assessed by the radiologist as not completely removed OR imaging finding was not calcifications (i.e. mass, asymmetry, architectural distortion) or was an MRI detected finding)  | *Patient disposition after biopsy:** Referral to breast surgeon

*Surgical management:** Consider surgical excision based on shared decision making discussion of upgrade potential (~3%) and patient preferences/risks. Additional factors that may increase risk of upgrade at surgical biopsy include large area of calcifications, personal history of breast cancer, and family history of breast cancer.
 | Referral to breast surgeon for discussion of excision.If not excised:* Diagnostic imaging (mammogram +/- ultrasound) follow-up at 12 months, then resume routine screening if stable (BI-RADS category 2).

Note: diagnostic imaging should also include breast MRI in 6 months if the finding was MRI detected. |

Potential Smart Phrase for Surgeon Use

The patient has a finding of pure FEA (flat epithelial atypia). The pathology report and associated clinical findings have been discussed. FEA is a benign condition of the breast. However, an associated malignancy may be found at the time of surgical excision of breast tissue in some cases. For patients with pure FEA, this risk is very low (<3%) and follow-up with imaging at 12 months is appropriate. If there are calcifications associated with the FEA, and calcifications remain after the biopsy, then surgical excision can be considered (especially for patients with a large area of calcifications or those with personal of family history of cancer).

Pertinent References:

1. Said SM, Visscher DW, Nassar A, et al. [Flat epithelial atypia and risk of breast cancer: A Mayo cohort study.](http://www.ncbi.nlm.nih.gov/pubmed/25639678) Cancer. 2015 Jan 13. (FEA does not confer long term increased risk of breast cancer above risks associated with proliferative breast disease or ADH if ADH is seen with FEA)
2. [Prowler VL](http://www.ncbi.nlm.nih.gov/pubmed/?term=Prowler%20VL%5BAuthor%5D&cauthor=true&cauthor_uid=24518220)1, [Joh JE](http://www.ncbi.nlm.nih.gov/pubmed/?term=Joh%20JE%5BAuthor%5D&cauthor=true&cauthor_uid=24518220)2, [Acs G](http://www.ncbi.nlm.nih.gov/pubmed/?term=Acs%20G%5BAuthor%5D&cauthor=true&cauthor_uid=24518220)3, et al.Surgical excision of pure flat epithelial atypia identified on core needle breast biopsy. [Breast.](http://www.ncbi.nlm.nih.gov/pubmed/24518220) 2014 Aug;23(4):352-6. (3.2% upgrade rate for pure FEA)
3. [Rudin AV](https://www.ncbi.nlm.nih.gov/pubmed/?term=Rudin%20AV%5BAuthor%5D&cauthor=true&cauthor_uid=28831724), Hoskin TL, Fahy A, et al. Flat Epithelial Atypia on Core Biopsy and Upgrade to Cancer: a Systematic Review and Meta-Analysis. [Ann Surg Oncol.](https://www.ncbi.nlm.nih.gov/pubmed/?term=flat+epithelial+atypic+rudin+2017) 2017 Nov;24(12):3549-3558. (Pooled estimate from 16 higher-quality studies of 7.5% overall upgrade rate; 3% upgrade to invasive cancer, 18% upgrade to ADH)
4. Lamb LR, Bahl M, Gadd M, Lehman CD. Flat Epithelial Atypia: Upgrade rates and Risk-stratification Approach to Support Informed Decision Making. J Am Col Surg. 2017 Aug;225(6):696-701. (Upgrade to invasive was 0%, DCIS 2.4%, but upgrade to ADH, LCIS, or ALH is nearly 30% = risk stratification implications for chemoprevention. Surveillance rather than surgical excision of FEA can be a reasonable option for patients without a genetic mutation who opt against chemoprevention)
5. Schiaffino S, Gristina L, Villa A, Tosto S, et al. Flat epithelial atypia: conservative management of patients without residual microcalcifications post-vacuum-assisted breast biopsy. Br J Radiol2018; 91: 20170484. (Surgical excision may not be necessary in patients with VAB diagnosis of isolated FEA,without residual microcalcifications post-procedure and considered concordant with the mammographic presentation)
6. Alencherry E, Goel R, Gore S, et al. [Clinical, imaging, and intervention factors associated with the upgrade of isolated flat epithelial atypia.](https://www.ncbi.nlm.nih.gov/pubmed/30500455)Clin Imaging. 2018 Nov 20;54:21-24. (in the absence of personal or first degree family history of breast cancer, cancer on a concurrent biopsy, segmental calcification distribution, extent of calcifications >2 cm, and only 0–24% calcifications removed on biopsy, patients may be safely followed with imaging)
7. McCroskey Z, Sneige N, Herman CR, et al. [Flat epithelial atypia in directional vacuum-assisted biopsy of breast microcalcifications: surgical excision may not be necessary.](https://www.ncbi.nlm.nih.gov/pubmed/29467479) Mod Pathol. 2018 Jul;31(7):1097-1106. (Favors VAB as biopsy technique, with very low upgrade rates when calcifications are appropriately sampled)

**ALH (Atypical Lobular Hyperplasia) and LCIS (Lobular Carcinoma In Situ):**

| **Patient characteristics/findings** | **Clinical Management**  | **Imaging Recommendation and Follow-up**  |
| --- | --- | --- |
| * Biopsy result of ALH or classical LCIS

 | *Patient disposition after biopsy:** Referral to breast surgeon.

*Surgical Management:** Determine whether LCIS is incidental relative to imaging finding (i.e. not etiology of original imaging abnormality that prompted biopsy).
* If incidental, excision not recommended
* If not incidental, consider surgical excision. Risk of upgrade at surgical excision to be estimated at 1-8% of LCIS and 1-3% for ALH. This risk may be higher in patients with a family history of breast cancer or in women <40 years of age.
* Consider referral to PATHS clinic and/or consider annual screening MRI and risk reduction therapy.
 | Referral to breast surgeon for discussion of excision.If not excised:* Diagnostic imaging (mammogram +/- ultrasound) follow-up at 12 months, then resume routine screening if stable (BI-RADS category 2).
* Note: diagnostic imaging should also include breast MRI in 6 months if the finding was MRI detected.
 |
| * Biopsy result of LCIS non-classical variant: i.e., pleomorphic, with necrosis, signet ring, or apocrine
 | *Patient disposition after biopsy:** Referral to breast surgeon.

*Surgical Management:** Recommend surgical excision
* Patients with non-classical variants of LCIS have a strong risk of upgrade to cancer at the time of surgical excision (15-40%).
* Consider referral to PATHS clinic. (Consider annual MRI, consider risk reduction therapy.)
 | Referral to breast surgeon for discussion of excision.If not excised* Diagnostic imaging (mammogram +/- ultrasound) follow-up at 6, 12, and 24 months (BI-RADS category 3). If stable at 24 months, resume routine screening (BI-RADS category 2).
* NOTE: diagnostic imaging should also include breast MRI in 6 months if the finding was MRI detected.
 |

Both ALH and LCIS are composed of an atypical monomorphic epithelial proliferation arising within the terminal ductal lobular unit. In both ALH and classic LCIS, the atypical cells fill and distend the acini and, at times, the ducts within one or more terminal ductal lobular unit. The pathologic distinction between ALH and classic LCIS is made primarily on the quantity of atypia. Lobular carcinoma in situ is defined as the filling and distension of more than 50% of the acini in a terminal ductal lobular unit, whereas ALH is used to denote lesions that fail to meet this criterion. Lobular neoplasia is associated with increased relative risk of carcinoma development including both ductal carcinoma in situ (DCIS) and invasive cancer (8- or 9-fold increased risk for LCIS and 4- or 5-fold increased risk for ALH) in either breast.

Potential Smart Phrase for Surgeon Use

*Incidental finding:*

The patient has a finding of classical type LCIS (lobular carcinoma in situ). The pathology report and associated clinical findings have been discussed. LCIS is a benign condition of the breast. However, an associated malignancy may found at the time of surgical excision of breast tissue in some cases. For patients with classical type LCIS which was found on core biopsy, this risk is very low if the LCIS is incidental (i.e. not the etiology of original imaging abnormality that prompted biopsy). For incidental classical type LCIS, no surgical excision is recommended and follow-up with diagnostic imaging at 12 months is appropriate.

*Non-Incidental finding:*

The patient has a finding of classical type LCIS (lobular carcinoma in situ). The pathology report and associated clinical findings have been discussed. LCIS is a benign condition of the breast. However, an associated malignancy may found at the time of surgical excision of breast tissue in some cases. For patients with classical type LCIS which was found on core biopsy, this risk is 1-8% if the LCIS is not incidental (i.e. the LCIS is the only etiology found to explain the original imaging abnormality that prompted biopsy). For these patients, surgical excision is recommended to rule out an associated malignancy.

*Pleomorphic type:*

The patient has a finding of pleomorphic type LCIS (lobular carcinoma in situ). The pathology report and associated clinical findings have been discussed. LCIS is a benign condition of the breast. However, an associated malignancy may found at the time of surgical excision of breast tissue in some cases. For patients with pleomorphic LCIS which was found on core biopsy, this risk is 15-40%. For these patients, surgical excision is recommended.

Pertinent References

Menes TS, Rosenberg R, Balch S, et al. Upgrade of high-risk breast lesions detected on mammography in the Breast Cancer Surveillance Consortium. Am J Surgery 2014; 207; 24-31.

\*Jennifer M. RaczJodi M. CarterAmy C. Degnim, Lobular Neoplasia and Atypical Ductal Hyperplasia on Core Biopsy: Current Surgical Management Recommendations. Annals of Surgical Oncology, October 2017, Volume 24, Issue 10, pp 2848–2854. Recommend surgical biopsy for lobular neoplasia, but may do surveillance if concordant and no other indications for excision. Recommend prevention medications.

Chang Sen LQ, Berg WA, Hooley RJ, et al. Core breast biopsies showing lobular carcinoma in situ should be excised and surveillance is reasonable for atypical lobular hyperplasia. AJR Am J Roentgenol. 2016;207:1132–45.

Murray MP, Luedtke C, Liberman L, et al. Classic lobular carcinoma in situ and atypical lobular hyperplasia at percutaneous breast core biopsy: outcomes of prospective excision. Cancer. 2013;119:1073–9.

**Papilloma:**

| **Patient characteristics/findings** | **Clinical Management**  | **Imaging Recommendation and Follow-up**  |
| --- | --- | --- |
| If no clinical symptoms* no nipple discharge
* not palpable

*AND** no atypical features of papilloma itself

*AND** size < 20 mm
 | *Patient disposition after biopsy:** No referral to breast surgeon

*Surgical Management:** Excision not recommended
 | * If > 40 years of age, bilateral screening mammogram in 12 months. If < age 40, recommend routine age-appropriate screening mammography.
* Clinical follow-up should be based on clinical factors.
 |
| If no clinical symptoms* no nipple discharge
* not palpable

*AND** no atypical features of papilloma itself

*AND** size > 20 mm
 | *Patient disposition after biopsy:** Referral to breast surgeon

*Surgical management:** Consider surgical excision
 | Referral to breast surgeon for discussion of excision.If not excised:* Diagnostic imaging (mammogram +/- ultrasound) follow-up at 12 months, then resume routine screening if stable (BI-RADS category 2).
* Note: diagnostic imaging should also include breast MRI in 6 months if the finding was MRI detected.
 |
| If clinical symptoms* nipple discharge
* palpable mass

*OR** If papilloma itself has atypical features
 | *Patient disposition after biopsy:** Referral to breast surgeon

*Surgical management:** Recommend surgical excision

Note: Papilloma is a common cause of nipple discharge. Patients with persistent nipple discharge after biopsy should be recommended surgical excision. Patients whose discharge resolves after biopsy can undergo surgical excision due to higher risk of upgrade (18% in one study) or undergo recommended follow-up imaging in 6 months.  | Referral to breast surgeon for discussion of excision.If not excised* Diagnostic imaging (mammogram +/- ultrasound) follow-up at 6, 12, and 24 months (BI-RADS category 3). If stable at 24 months, resume routine screening (BI-RADS category 2).
* NOTE: diagnostic imaging should also include breast MRI in 6 months if the finding was MRI detected.
 |
| If “atypia”(ADH, ALH, LCIS) is present in the biopsy but not directly associated with the papilloma | *Patient disposition after biopsy:** Management as per guideline for the atypical or high-risk lesion.

*Surgical management:** Management as per guideline for the atypical or high-risk lesion.
 | * Management as per guideline for the atypical or high-risk lesion.
 |

Potential Smart Phrase for Surgeon Use:

Patients with small (<15mm) and papillomas without atypical features at core needle biopsy without associated symptoms of a palpable mass or nipple discharge have a very low risk of having an associated malignancy found at the time of a surgical excision; observation only is appropriate. For patients with papillomas with atypical features, the risk of an associated malignancy being found at surgical excision may be as high as 30%. Surgical excision is recommended for these patients or for patients with persistent symptoms.

Pertinent References:

Swapp RE, Jones K, Brandts H, et al. Management of Benign Intraductal Solitary Papilloma Diagnosed on Core Needle Biopsy. Annals of Surgical Oncology; 2013; 20: 1900-1905

Richter-Ehrenstein C. et al. Intraductal Papillomas of the breast: diagnosis and management of 151 patients. Breast, 2011; 20(6):501-504

Wen X, Cheng W. [Nonmalignant breast papillary lesions at core-needle biopsy: a meta-analysis of underestimation and influencing factors.](http://www.ncbi.nlm.nih.gov/pubmed/22878621) Ann Surg Oncol. 2013 Jan;20(1):94-101. (A meta-analysis of 34 CNB studies, overall upgrade rate of 15.7% for nonmalignant papillary lesions with an upgrade rate for benign papillomas of 7.0% versus 36.9% for atypical papillary lesions.)

Menes TS, Rosenberg R, Balch S, et al. Upgrade of high-risk breast lesions detected on mammography in the Breast Cancer Surveillance Consortium. Am J Surgery. 2014; 207; 24-31.

Ahn S, Han W, Moon H, et al. Management of benign papilloma without atypia diagnosed at ultrasound-guided core needle biopsy: Scoring system for predicting malignancy. EJSO. 2018; 44; 53-58. (Multivariate analysis revealed that bloody nipple discharge, size on imaging > 15 mm, BI-RADS\_4b, peripheral location and palpability were independent predictors of malignancy

Grimm LJ, Bookhout C, Bentley R, et al. Concordant, non-atypical breast papillomas do not require surgical excision: A 10-year multi-institution study and review of the literature. Clinical Imaging 51 (2018) 180–185. (When no atypia or high-risk lesion is present, radiology-pathology concordance is established, and pathology is reviewed by Breast pathologist, there is an extremely low (0.6%) risk of upgrade)

Armes JE, Galbraith C, Gray J, Taylor K. The outcome of papillary lesions of the breast diagnosed by standard core needle biopsy within a BreastScreen Australia service. 2017. Pathology 49(3):267–270. (7% upgrade rate without atypia, none were invasive)

**Radial Scar (Complex Sclerosing Lesion):**

| **Patient characteristics/findings** | **Clinical Management**  | **Imaging Recommendation and Follow-up**  |
| --- | --- | --- |
| * No atypia, AND
* Assessed by radiologist as incidental relative to imaging finding (i.e. small incidental area identified on pathology)
 | *Patient disposition after biopsy:** No referral to breast surgeon

*Surgical management:** Excision not recommended
* Clinical follow-up should be based on clinical factors.
 | * Diagnostic imaging (mammogram +/- ultrasound) follow-up at 12 months, then resume routine screening if stable (BI-RADS category 2).
* Note: diagnostic imaging should also include breast MRI in 6 months if the finding was MRI detected.
 |
| * No atypia, AND
* Assessed by radiologist as the etiology of the imaging finding (i.e. not incidental)
 | *Patient disposition after biopsy:** Referral to breast surgeon

*Surgical management:** Consider surgical excision based on shared decision making discussion regarding potential upgrade to high risk lesion vs malignancy (estimated less than 4%)
 | Referral to breast surgeon for discussion of excision.If not excised:* Diagnostic imaging (mammogram +/- ultrasound) follow-up at 12 months, then resume routine screening if stable (BI-RADS category 2).
* Note: diagnostic imaging should also include breast MRI in 6 months if the finding was MRI detected.
 |
| * ATYPIA in or adjacent to the radial scar
 | *Patient disposition after biopsy:** Referral to breast surgeon

*Surgical management:** Recommend surgical excision. Risk of upgrade is driven by the other atypical or high-risk lesion.
 | Referral to breast surgeon for discussion of excision.If not excised* Diagnostic imaging (mammogram +/- ultrasound) follow-up at 6, 12, and 24 months (BI-RADS category 3). If stable at 24 months, resume routine screening (BI-RADS category 2).
* NOTE: diagnostic imaging should also include breast MRI in 6 months if the finding was MRI detected.
 |

Potential Smart Phrase:

The patient was advised that radial scar is an idiopathic process of adenosis and fibroelastic changes that are not related to trauma or surgery. Radial scar is a benign condition. However, an associated malignancy may found at the time of surgical excision of breast tissue in some cases. For patients with a radial scar, this risk is very low (0-4%) if no atypia is seen on pathologic review. Surgical excision can be considered to evaluate this risk. For patients with atypia present in addition to the radial scar, surgical excision is recommended due to the higher upgrade risk.

Pertinent References

Chou WYY, Veis DJ, Aft R ; Radial scar on image-guided breast biopsy: is surgical excision necessary? Breast Cancer Res Treat. 2018 Jul;170(2):313-320

Cohen MA et al ; Radial Scars of the Breast Encountered at Core Biopsy: Review of Histologic, Imaging, and Management Considerations. AJR Am J Roentgenol. (2017)

**Fibroepithelial lesion / Phyllodes Tumor:**

|  |  |  |
| --- | --- | --- |
| **Patient characteristics/findings** | **Clinical Management**  | **Imaging Recommendation and Follow-up**  |
| Fibroadenoma | *Patient disposition after biopsy:** No routine referral to breast surgeon.
* Referral to breast surgeon if requested by patient.
* Referral could also be considered in women over the age of 35 or with fibroadenomas greater than 5 cm.
* Clinical follow-up as indicated.
 | Recommend post-biopsy imaging follow-up with bilateral screening mammogram in 12 MONTHS if age 40 years or older or if at elevated breast cancer risk. If less than age 40 years, recommend routine age-appropriate screening mammography. |
| Fibroepithelial lesion (unable to classify further) | *Patient disposition after biopsy:** Referral to breast surgeon

*Surgical management:** Clinical behavior of these lesions is best delineated by change over time. Consider either surgical excision (if patient preference) or close follow-up.
 | Referral to breast surgeon for discussion of excision.If not excised* Diagnostic imaging (mammogram +/- ultrasound) follow-up at 6, 12, and 24 months (BI-RADS category 3). If stable at 24 months, resume routine screening (BI-RADS category 2).
* NOTE: diagnostic imaging should also include breast MRI in 6 months if the finding was MRI detected.
 |
| Fibroepithelial lesion, suspect phyllodes  | *Patient disposition after biopsy:** Referral to breast surgeon

*Surgical management:** Recommend surgical excision (goal margin >1 cm)
 | Referral to breast surgeon for discussion of excision.If not excised* Diagnostic imaging (mammogram +/- ultrasound) follow-up at 6, 12, and 24 months (BI-RADS category 3). If stable at 24 months, resume routine screening (BI-RADS category 2).
* NOTE: diagnostic imaging should also include breast MRI in 6 months if the finding was MRI detected.
 |

Potential smart phrase for surgeon use:

Patients with radiology-pathology concordant imaging and biopsies showing fibroadenoma have a benign finding of the breast with a very low risk of upgrade to malignancy. Surgical excision may be considered in larger lesions due to the increased possibility of sampling error.

Pertinent References

Marcil G, Wong S, Trabulsi N, et al. *Fibroepithelial breast lesions diagnosed by core needle biopsy demonstrate a moderate rate of upstaging to phyllodes tumors*. Am J Surgery. 2017: 214:318-22.

Guilllot E, Couturaud B, Reyal F, et al. *Management of Phyllodes Breast Tumors*. The Breast Journal. 2011: 17: 129-137.

Kim S, Kim JY, Kim DH, et al. *Analysis of phyllodes tumor recurrence according to the histologic grade*. Breast Cancer Res Treat, 2013. 141: 353-363.

Moo T, Alabdulkareem H, Tam A, et al. *Association between recurrence and re-excision for close and positive margins versus observation in patients with benign Phyllodes tumors*. Ann Surg Oncol. 2017. 24: 3088-3092.

Leconte Diagnostic & Interventional Imaging (2012) 93: 750-56

Wai CJ, Mubarak G, Homer MJ, et al. [modified triple test for palpable breast masses: the value of ultrasound and core needle biopsy.](http://www.ncbi.nlm.nih.gov/pubmed/23104707) Ann Surg Oncol. 2013 Mar;20(3):850-5

Reeves, MJ, Osuch JR, Pathak DR. Development of a clinical decision rule for triage of women with palpable breast masses. .J Clin Epidemiol. 2003 Jul;56(7):636-45.

Harvey JA, Mahoney MC, Newell MS, et al. [ACR appropriateness criteria palpable breast masses.](http://www.ncbi.nlm.nih.gov/pubmed/24091044)

J Am Coll Radiol. 2013 Oct;10(10):742-9.

Sala MA, Dhillon R, Brookes D, et al. Indications for diagnostic open biopsy of mammographic screen-detected lesions preoperatively diagnosed as fibroadenomas by needle biopsy and their outcomes. Clinical Radiology. 2015; 70:507-14.

Hubbard JL, Cagle, K, Davis, JW, et al. Criteria for excision of suspected fibroadenomas of the breast. Am J of Surg. 2015; 209: 297-301.

**PASH:**

|  |  |  |
| --- | --- | --- |
| **Patient characteristics/findings** | **Clinical Management** | **Imaging Recommendation and Follow-up**  |
| * PASH
 | *Patient disposition after biopsy:** No referral to breast surgeon unless patient desires removal due to symptoms.
* Clinical follow-up should be based on clinical factors.
 | * If > 40 years of age, bilateral screening mammogram in 12 months. If < age 40, recommend routine age-appropriate screening mammography.
 |

Potential Smart Phrase for Surgeon Use:

The patient was advised that PASH is a benign condition of the breast with no known malignant potential or risk of upgrade when radiology-pathology concordance is established. If the breast with PASH has concerning mammographic findings, including suspicious calcifications or a suspicious mass, then this is discordant with imaging and excision is recommended. If the PASH lesion is associated with symptoms and confirmed by core biopsy, the mass can be excised if the patient desires removal.

Pertinent References:

Gresik CM, Godellas C, Aranha GV, et al. Pseudoangiomatous stromal hyperplasia of the breast: a contemporary approach to its clinical and radiologic features and ideal management. Surgery. 2010 Oct;148(4):752-7. (Lesion progression or inconclusive biopsy findings should prompt surgical excision)

Bowman E, Oprea G,Okoli J, et al. Pseudoangiomatous stromal hyperplasia (PASH) of the breast: a series of 24 patients. Breast J. 2012 May-Jun;18(3):242-7.

Hargaden GC, Yeh ED, Georgian-Smith D, et al. Clinical Observations. Analysis of the Mammographic and Sonographic Features of Pseudoangiomatous Stromal Hyperplasia American Journal of Roentgenology. 2008;191:359-363.

Layon, D, et al. Is surgical excision necessary in PASH? The Breast Journal. 2016. 22 (5): 595-596. (review of 108 articles, and although most PASH lesions in the literature were treated by excision, the reported prevalence of malignant transformation of these tumors and occult malignant or premalignant lesions discovered due to excision of PASH lesions is 0.4%)

**Surgical Pathology**

**Lumpectomy Margins:**

|  |  |
| --- | --- |
| **Patient characteristics/findings** | **Clinical Management** |
| * DCIS
 | * Less than 2 mm requires re-excision
* If anterior margin was at skin and posterior margin included pectoralis fascia, do not re-excise
 |
| * Invasive
 | * Margins that are ink negative do not require re-excision
* Margins that are positive require re-excision
* If anterior margin was at skin and posterior margin included pectoralis fascia, do not re-excise
 |
| * DCIS & Invasive
 | * Evidence based guideline recommends margin guidelines of no tumor on ink
* UW Health Breast Center recommends individual case assessment to determine need for re-excision based on extent of DCIS
 |

Notes:

* Margins should be identified with stitches and clips
* Long stitch lateral, short stitch superior, 2 clips medial, 1 clip inferior
* All margins must be marked by ink or stitches/clips on 4 sides
* Intra-operative specimen radiograph with a minimum of 2 views, including review by radiologist and surgeon, is recommended.
* Consider global re-excision of all margins. Selective additional margins may not decrease the need for re-excision.

Dot Phrase for Surgeon Use:

**IMPRESSION/PLAN**: Ms @LNAME@ presents for follow-up from her \*\*\* breast partial mastectomy. She appears well. Her pathology was reviewed with her in detail and provided to her. We discussed the importance of adequate margins prior to proceeding to adjuvant radiation. Current clinical guidelines recommend an ink-negative margin for invasive cancer and at least a 2mm margin for DCIS. At this time, my recommendation is to re-excise her \*\*\* margins. We spent significant time again discussing the risks and benefits of BCS v. mastectomy with and without reconstruction. I did stress to her that it is not out of the expected course to need a re-excision and that national estimates are that this is required in up to 30% of women. She is meeting with Dr. \*\*\* to discuss radiation therapy. I did offer to have her meet with a plastic surgeon to discuss her reconstructive options. We ultimately decided to proceed with re-excision lumpectomy as scheduled. The following recommendations were made:

1. To the OR for re-excision lumpectomy on the \*\*\*

2. Appointment with medical oncology to discuss systemic therapy following surgery

3. Appointment with radiation oncology for local regional therapy

Pertinent References

Houssami N, Macaskill P, Marinovich L, et al. [The Association of Surgical Margins and Local Recurrence in Women with Early-Stage Invasive Breast Cancer Treated with Breast-Conserving Therapy: A Meta-Analysis.](http://www.ncbi.nlm.nih.gov/pubmed/24473640) Ann Surg Oncol. 2014 Jan 29.

[Marinovich ML](https://www.ncbi.nlm.nih.gov/pubmed/?term=Marinovich%20ML%5BAuthor%5D&cauthor=true&cauthor_uid=27527715), [Azizi L](https://www.ncbi.nlm.nih.gov/pubmed/?term=Azizi%20L%5BAuthor%5D&cauthor=true&cauthor_uid=27527715), [Macaskill P](https://www.ncbi.nlm.nih.gov/pubmed/?term=Macaskill%20P%5BAuthor%5D&cauthor=true&cauthor_uid=27527715), [Irwig L](https://www.ncbi.nlm.nih.gov/pubmed/?term=Irwig%20L%5BAuthor%5D&cauthor=true&cauthor_uid=27527715), [Morrow M](https://www.ncbi.nlm.nih.gov/pubmed/?term=Morrow%20M%5BAuthor%5D&cauthor=true&cauthor_uid=27527715), [Solin LJ](https://www.ncbi.nlm.nih.gov/pubmed/?term=Solin%20LJ%5BAuthor%5D&cauthor=true&cauthor_uid=27527715), [Houssami N](https://www.ncbi.nlm.nih.gov/pubmed/?term=Houssami%20N%5BAuthor%5D&cauthor=true&cauthor_uid=27527715). The Association of Surgical Margins and Local Recurrence in Women with Ductal Carcinoma In Situ Treated with Breast-Conserving Therapy: A Meta-Analysis. [Ann Surg Oncol.](https://www.ncbi.nlm.nih.gov/pubmed/27527715) 2016 Nov;23(12):3811-3821.

[Morrow M](https://www.ncbi.nlm.nih.gov/pubmed/?term=Morrow%20M%5BAuthor%5D&cauthor=true&cauthor_uid=27527714), [Van Zee KJ](https://www.ncbi.nlm.nih.gov/pubmed/?term=Van%20Zee%20KJ%5BAuthor%5D&cauthor=true&cauthor_uid=27527714), [Solin LJ](https://www.ncbi.nlm.nih.gov/pubmed/?term=Solin%20LJ%5BAuthor%5D&cauthor=true&cauthor_uid=27527714), [Houssami N](https://www.ncbi.nlm.nih.gov/pubmed/?term=Houssami%20N%5BAuthor%5D&cauthor=true&cauthor_uid=27527714), [Chavez-MacGregor M](https://www.ncbi.nlm.nih.gov/pubmed/?term=Chavez-MacGregor%20M%5BAuthor%5D&cauthor=true&cauthor_uid=27527714), [Harris JR](https://www.ncbi.nlm.nih.gov/pubmed/?term=Harris%20JR%5BAuthor%5D&cauthor=true&cauthor_uid=27527714), [Horton J](https://www.ncbi.nlm.nih.gov/pubmed/?term=Horton%20J%5BAuthor%5D&cauthor=true&cauthor_uid=27527714), [Hwang S](https://www.ncbi.nlm.nih.gov/pubmed/?term=Hwang%20S%5BAuthor%5D&cauthor=true&cauthor_uid=27527714), [Johnson PL](https://www.ncbi.nlm.nih.gov/pubmed/?term=Johnson%20PL%5BAuthor%5D&cauthor=true&cauthor_uid=27527714), [Marinovich ML](https://www.ncbi.nlm.nih.gov/pubmed/?term=Marinovich%20ML%5BAuthor%5D&cauthor=true&cauthor_uid=27527714), [Schnitt SJ](https://www.ncbi.nlm.nih.gov/pubmed/?term=Schnitt%20SJ%5BAuthor%5D&cauthor=true&cauthor_uid=27527714), [Wapnir I](https://www.ncbi.nlm.nih.gov/pubmed/?term=Wapnir%20I%5BAuthor%5D&cauthor=true&cauthor_uid=27527714), [Moran MS](https://www.ncbi.nlm.nih.gov/pubmed/?term=Moran%20MS%5BAuthor%5D&cauthor=true&cauthor_uid=27527714). Society of Surgical Oncology-American Society for Radiation Oncology-American Society of Clinical Oncology Consensus Guideline on Margins for Breast-Conserving Surgery with Whole-Breast Irradiation in Ductal Carcinoma In Situ. J Clin Oncol. 2016 Nov 20; 34(33):4040-4046.

[Moran MS](https://www.ncbi.nlm.nih.gov/pubmed/?term=Moran%20MS%5BAuthor%5D&cauthor=true&cauthor_uid=24516019), [Schnitt SJ](https://www.ncbi.nlm.nih.gov/pubmed/?term=Schnitt%20SJ%5BAuthor%5D&cauthor=true&cauthor_uid=24516019), [Giuliano AE](https://www.ncbi.nlm.nih.gov/pubmed/?term=Giuliano%20AE%5BAuthor%5D&cauthor=true&cauthor_uid=24516019), [Harris JR](https://www.ncbi.nlm.nih.gov/pubmed/?term=Harris%20JR%5BAuthor%5D&cauthor=true&cauthor_uid=24516019), [Khan SA](https://www.ncbi.nlm.nih.gov/pubmed/?term=Khan%20SA%5BAuthor%5D&cauthor=true&cauthor_uid=24516019), [Horton J](https://www.ncbi.nlm.nih.gov/pubmed/?term=Horton%20J%5BAuthor%5D&cauthor=true&cauthor_uid=24516019), [Klimberg S](https://www.ncbi.nlm.nih.gov/pubmed/?term=Klimberg%20S%5BAuthor%5D&cauthor=true&cauthor_uid=24516019), [Chavez-MacGregor M](https://www.ncbi.nlm.nih.gov/pubmed/?term=Chavez-MacGregor%20M%5BAuthor%5D&cauthor=true&cauthor_uid=24516019), [Freedman G](https://www.ncbi.nlm.nih.gov/pubmed/?term=Freedman%20G%5BAuthor%5D&cauthor=true&cauthor_uid=24516019), [Houssami N](https://www.ncbi.nlm.nih.gov/pubmed/?term=Houssami%20N%5BAuthor%5D&cauthor=true&cauthor_uid=24516019), [Johnson PL](https://www.ncbi.nlm.nih.gov/pubmed/?term=Johnson%20PL%5BAuthor%5D&cauthor=true&cauthor_uid=24516019), [Morrow M](https://www.ncbi.nlm.nih.gov/pubmed/?term=Morrow%20M%5BAuthor%5D&cauthor=true&cauthor_uid=24516019); [Society of Surgical Oncology](https://www.ncbi.nlm.nih.gov/pubmed/?term=Society%20of%20Surgical%20Oncology%5BCorporate%20Author%5D); [American Society for Radiation Oncology](https://www.ncbi.nlm.nih.gov/pubmed/?term=American%20Society%20for%20Radiation%20Oncology%5BCorporate%20Author%5D). Society of Surgical Oncology-American Society for Radiation Oncology consensus guideline on margins for breast-conserving surgery with whole-breast irradiation in stages I and II invasive breast cancer. [J Clin Oncol.](https://www.ncbi.nlm.nih.gov/pubmed/24516019) 2014 May 10;32(14):1507-15.

[Landercasper J](https://www.ncbi.nlm.nih.gov/pubmed/?term=Landercasper%20J%5BAuthor%5D&cauthor=true&cauthor_uid=26215198), [Attai D](https://www.ncbi.nlm.nih.gov/pubmed/?term=Attai%20D%5BAuthor%5D&cauthor=true&cauthor_uid=26215198), [Atisha D](https://www.ncbi.nlm.nih.gov/pubmed/?term=Atisha%20D%5BAuthor%5D&cauthor=true&cauthor_uid=26215198), [Beitsch P](https://www.ncbi.nlm.nih.gov/pubmed/?term=Beitsch%20P%5BAuthor%5D&cauthor=true&cauthor_uid=26215198), [Bosserman L](https://www.ncbi.nlm.nih.gov/pubmed/?term=Bosserman%20L%5BAuthor%5D&cauthor=true&cauthor_uid=26215198), [Boughey J](https://www.ncbi.nlm.nih.gov/pubmed/?term=Boughey%20J%5BAuthor%5D&cauthor=true&cauthor_uid=26215198), [Carter J](https://www.ncbi.nlm.nih.gov/pubmed/?term=Carter%20J%5BAuthor%5D&cauthor=true&cauthor_uid=26215198), [Edge S](https://www.ncbi.nlm.nih.gov/pubmed/?term=Edge%20S%5BAuthor%5D&cauthor=true&cauthor_uid=26215198), [Feldman S](https://www.ncbi.nlm.nih.gov/pubmed/?term=Feldman%20S%5BAuthor%5D&cauthor=true&cauthor_uid=26215198), [Froman J](https://www.ncbi.nlm.nih.gov/pubmed/?term=Froman%20J%5BAuthor%5D&cauthor=true&cauthor_uid=26215198), [Greenberg C](https://www.ncbi.nlm.nih.gov/pubmed/?term=Greenberg%20C%5BAuthor%5D&cauthor=true&cauthor_uid=26215198), [Kaufman C](https://www.ncbi.nlm.nih.gov/pubmed/?term=Kaufman%20C%5BAuthor%5D&cauthor=true&cauthor_uid=26215198), [Morrow M](https://www.ncbi.nlm.nih.gov/pubmed/?term=Morrow%20M%5BAuthor%5D&cauthor=true&cauthor_uid=26215198), [Pockaj B](https://www.ncbi.nlm.nih.gov/pubmed/?term=Pockaj%20B%5BAuthor%5D&cauthor=true&cauthor_uid=26215198), [Silverstein M](https://www.ncbi.nlm.nih.gov/pubmed/?term=Silverstein%20M%5BAuthor%5D&cauthor=true&cauthor_uid=26215198), [Solin L](https://www.ncbi.nlm.nih.gov/pubmed/?term=Solin%20L%5BAuthor%5D&cauthor=true&cauthor_uid=26215198), [Staley A](https://www.ncbi.nlm.nih.gov/pubmed/?term=Staley%20A%5BAuthor%5D&cauthor=true&cauthor_uid=26215198), [Vicini F](https://www.ncbi.nlm.nih.gov/pubmed/?term=Vicini%20F%5BAuthor%5D&cauthor=true&cauthor_uid=26215198), [Wilke L](https://www.ncbi.nlm.nih.gov/pubmed/?term=Wilke%20L%5BAuthor%5D&cauthor=true&cauthor_uid=26215198), [Yang W](https://www.ncbi.nlm.nih.gov/pubmed/?term=Yang%20W%5BAuthor%5D&cauthor=true&cauthor_uid=26215198), [Cody H 3rd](https://www.ncbi.nlm.nih.gov/pubmed/?term=Cody%20H%203rd%5BAuthor%5D&cauthor=true&cauthor_uid=26215198). Toolbox to Reduce Lumpectomy Reoperations and Improve Cosmetic Outcome in Breast Cancer Patients: The American Society of Breast Surgeons Consensus Conference. [Ann Surg Oncol.](https://www.ncbi.nlm.nih.gov/pubmed/26215198) 2015 Oct;22(10):3174-83.

[Maureen P. McEvoy](https://www.ncbi.nlm.nih.gov/pubmed/?term=McEvoy%20MP%5BAuthor%5D&cauthor=true&cauthor_uid=30687627), [Jeffrey Landercasper](https://www.ncbi.nlm.nih.gov/pubmed/?term=Landercasper%20J%5BAuthor%5D&cauthor=true&cauthor_uid=30687627), [Himani R. Naik](https://www.ncbi.nlm.nih.gov/pubmed/?term=Naik%20HR%5BAuthor%5D&cauthor=true&cauthor_uid=30687627), and [Sheldon Feldman](https://www.ncbi.nlm.nih.gov/pubmed/?term=Feldman%20S%5BAuthor%5D&cauthor=true&cauthor_uid=30687627).  Update of the American Society of Breast Surgeons Toolbox to address the lumpectomy reoperation epidemic. [Gland Surg](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6323258/). 2018 Dec; 7(6): 536–553.

**Nipple Discharge:**

|  |  |  |
| --- | --- | --- |
| **Patient characteristics/findings** | **Clinical Management** | **Imaging Recommendation and Follow-up**  |
| * Physiologic discharge: bilateral, milky and /or green multi-ductal
 | * Reassurance. No surgery consult recommended.
* Patient to be worked up for systemic causes (i.e. endocrine) if appropriate (can be done by PCP prior to referral ).
 | * If >40 years of age, bilateral screening mammogram if has not been performed in the previous 12 months. If < age 40, recommend routine age-appropriate screening mammography.
 |
| * Spontaneous pathologic discharge (bloody, serous or clear discharge, single duct /unilateral) – reproducible in clinic (non-lactating patient)
 | * Age-appropriate diagnostic imaging, including subareolar ultrasound
* Galactogram/Ductography is not recommended based on low yield of outcome/results
* Standard evaluation (biopsy) of imaging abnormalities
* Surgical referral. If image guided biopsy identified the etiology of the discharge, then follow guidelines for that pathology. If no etiology identified, ductal excision is recommended.
 | * Follow-up imaging based on etiology of the discharge.
 |
| * Single episode or non-reproducible pathologic discharge (bloody, serous or clear discharge , single duct /unilateral)
 | * Age-appropriate diagnostic imaging, including subareolar ultrasound
* Standard evaluation (biopsy) of imaging abnormalities
* Surgical referral. If etiology of discharge not identified and/or excised, clinical follow-up in 3 month (exam, return for change i.e.spontaneous)
 | * Follow-up imaging based on etiology of the discharge.
 |

Pertinent References

[Gray RJ, Pockaj BA, Karstaedt PJ. Navigating murky waters: a modern treatment algorithm for nipple discharge. Am J Surg 2007; 194:850.](http://www.uptodate.com/contents/nipple-discharge/abstract/30)

[Chen L, Zhou WB, Zhao Y, et al. Bloody nipple discharge is a predictor of breast cancer risk: a meta-analysis. Breast Cancer Res Treat 2012; 132:9.](http://www.uptodate.com/contents/nipple-discharge/abstract/25)

[Alcock C, Layer GT. Predicting occult malignancy in nipple discharge. ANZ J Surg 2010; 80:646.](http://www.uptodate.com/contents/nipple-discharge/abstract/46)

[Morrogh M, Morris EA, Liberman L, et al. The predictive value of ductography and magnetic resonance imaging in the management of nipple discharge. Ann Surg Oncol 2007; 14:3369.](http://www.uptodate.com/contents/nipple-discharge/abstract/36)

Morrogh M, Park A, Elkin EB, King TA Lessons learned from 416 cases of nipple discharge of the breast. Am J Surg 2009; 200:73