Published in final edited form as:

Ann Surg Oncol. 2018 October ; 25(10): 2795–2800. doi:10.1245/s10434-018-6584-5.

Select Choices in Benign Breast Disease: An Initiative of the American Society of Breast Surgeons for the American Board of Internal Medicine Choosing Wisely® Campaign

Roshni Rao, MD¹, Kandace Ludwig, MD², Lisa Bailey, MD³, Tiffany S. Berry, MD⁴, Robert Buras, MD⁵, Amy Degnim, MD⁶, Oluwadamilola M. Fayanju, MD⁷, Joshua Froman, MD⁸, Negar Golesorkhi, MD⁹, Caprice Greenburg, MD¹⁰, Ayemoe Thu Ma, MD¹¹, Starr Koslow Mautner, MD¹², Helen Krontiras, MD¹³, Michelle Sowden, DO¹⁴, Barbara Wexelman, MD¹⁵, and Jeffrey Landercasper, MD¹⁶

¹Department of Surgery, Division of Breast Surgery, Columbia University Medical Center, New York, NY

²University of Indiana, Indianapolis, IN

³Bay Area Breast Surgeons, Oakland, CA

⁴Norton Surgical Specialists, Louisville, KY

⁵Anne Arundel Medical Center, Annapolis, MD

⁶Mayo Clinic, Rochester, MN

⁷Duke University, Durham, NC

⁸Mayo Clinic Health System, Owatonna, MN

⁹Sentara Comprehensive Breast Center, Lorton, VA

¹⁰University of Wisconsin, Madison, WI

¹¹Mount Sinai Health System, New York, NY

¹²Miami Cancer Institute, Miami, FL

¹³University of Alabama, Birmingham, AL

¹⁴The University of Vermont Medical Center, Burlington, VT

¹⁵Trihealth Cancer Institute, Cincinnati, OH

¹⁶Gundersen Medical Foundation, La Crosse, WI

Abstract

Background.—Up to 50% of all women encounter benign breast problems. In contrast to breast cancer, high-level evidence is not available to guide treatment. Management is therefore largely based on individual physician experience/training. The American board of internal medicine (ABIM) initiated its *Choosing Wisely*® campaign to promote conversations between patients and physicians about challenging the use of tests or procedures which may not be necessary. The American society of breast surgeons (ASBrS) Patient safety and quality committee (PSQC) chose to participate in this campaign in regard to the management of benign breast disease.

Methods.—The PSQC solicited initial candidate measures. PSQC surgeons represent a wide variety of practices. The resulting measures were ranked by modified Delphi appropriateness methodology in two rounds. The final list was approved by ASBrS and endorsed by the ABIM.

Results.—The final five measures are as follows. (1) Don't routinely excise areas of pseudoangiomatous stromal hyperplasia (PASH) of the breast in patients who are not having symptoms from it. (2) Don't routinely surgically excise biopsy-proven fibroadenomas that are < 2 cm. (3) Don't routinely operate for a breast abscess without an initial attempt to percutaneously aspirate. (4) Don't perform screening mammography in asymptomatic patients with normal exams who have less than a 5-years life expectancy. (5) Don't routinely drain nonpainful, fluid-filled cysts.

Conclusions.—The ASBrS *Choosing Wisely*® measures that address benign breast disease management are easily accessible to patients via the internet. Consensus was reached by PSQC regarding these recommendations. These measures provide guidance for shared decision-making.

BACKGROUND

Choosing Wisely®

The American Board of Internal Medicine's *Choosing Wisely*® campaign encourages physicians and patients to engage in conversation about tests and treatments that are potentially unnecessary. It is estimated that in the United States, up to 30% of medical spending does not add value to care.¹ One of the goals of the *Choosing Wisely*® initiative therefore is to focus on the value of particular interventions to facilitate higher-quality care. Since its initiation in 2012, numerous professional organizations have participated in creating lists of measures that are appropriate targets for discussion. Additionally, this campaign has now been adopted in various forms on an international level to change key clinical practices.¹ The American Society of Breast Surgeons (ASBrS) has previously participated in this campaign by creating measures specific to the management of breast cancer.²

Benign Breast Disease

While benign breast complaints account for a significant portion of patients presenting to a surgical clinic, the treatment of benign breast disease does not have the same level of trial-based evidence to guide therapy decisions as breast cancer treatment. Management decisions often are based on case series, retrospective reviews, or physician experience and training.^{3,4} This topic was chosen by the ASBrS Patient Safety and Quality Committee (PSQC) as a potential area where unnecessary procedures could be reduced if conversations were initiated between physicians and patients. This focus also represented an additional avenue of contribution to the *Choosing Wisely*® campaign by the ASBrS.

METHODS

The ASBrS is the primary leadership organization for surgeons who treat patients with breast disease. It was founded in 1995 and currently has more than 3000 members. The PSQC, after correspondence and support from the American Board of Internal Medicine

(ABIM) *Choosing Wisely*[®] representatives, elected to identify measures for benign breast disease that would be suitable for inclusion in the *Choosing Wisely*[®] framework. Consistent with accepted recommendations for the development of *Choosing Wisely*[®] initiatives, a modified Delphi process was utilized. The PSQC discussed the goals of the *Choosing Wisely*[®] campaign and solicited candidate measures from its members starting in August 2016. The PSQC members were asked to identify measures that addressed the goals of *Choosing Wisely*[®]. Committee members were provided with a full description of the *Choosing Wisely*[®] campaign and its goals, as well as its emphasis on decreasing “unnecessary” tests and interventions. Specific recommendations were made to consider domains of care that reflected “appropriateness,” “waste,” and “value” as noted in recent publications, randomized trials, and meta-analyses.

Voting occurred on a Likert-type scale with the instructions delineated below:

1. Rank each quality measure (QM) from 1 to 9. Nine is the highest score for “validity”; 1 is the lowest. Do not give a “lower rank” to a candidate QM, because you are concerned about feasibility of measurement or risk adjustment.
2. Do not assign your numerical score to “weight” your answer with more influence on the final score compared with other panelists; i.e., if you believe a “choice’s” score is 4, but you believe other panelists will assign a score “too high,” you should assign a “4,” not a “1, 2, or 3.”
3. Formal definition provided by RAND for “validity”: adherence to this QM is critical to provide quality patient care, regardless of cost or feasibility. Not providing this level of care is a “breach” in care and unacceptable. Level of validity is your personal judgment, not what others believe (or don’t believe) is important. In other words, the strength of this process is that each PSQC member is an expert, and it is natural that opinions may differ. You must provide your opinion. The QM should apply to the average patient in the average hospital with the average physician. Do not be distracted by the special situation in which the QM being ranked may be of different importance in a specific unusual situation. The QM may provide benefit not always to the individual patient, but rather to overall breast care. 1 = definitely not valid. 9 = valid. 5 = uncertain validity.

After creation of a list of 28 candidate measures (Table 1), two rounds of modified Delphi process ranking were performed electronically in October 2016 and December 2016 following the iterative and analytic methodology in the RAND UCLA Ranking manual.⁵

After each round of ranking, a spreadsheet with ranking results was provided to committee members. Inter-round electronic communication followed with opportunities for participants to discuss the choices, lobby for adjustment of rank order, and review areas of significant discordance between participants. After the second round of ranking, the remaining 20 candidate measures all had a median appropriateness score of 7. Subsequently, high scoring items were chosen to inform the final list of five choices; these were chosen to reflect the values of the *Choosing Wisely*[®] Campaign, have broad applicability and impact, and were consistent with the mission of ASBrS. The final list of five choices was distributed to the

entire PSQC twice by email for further vetting and a final round of discussion occurred on February 8, 2017.

The measures were subsequently approved by the ASBrS Board of Directors and submitted to the ABIM. The ABIM provided feedback and requested edits to two of the measures to align them more appropriately with the current *Choosing Wisely*[®] framework that was targeted towards physician interventions. Subsequently, the top two measures from the previous rounds of rankings that fit this request were included in the final list of five. These were submitted to the ABIM and the ASBrS Board of Directors with both entities approving this final list.

RESULTS

The final list of recommendations with their associated explanations is below.

1. Don't routinely excise areas of pseudoangiomatous stromal hyperplasia (PASH) of the breast in patients who are not having symptoms from it.

PASH is a benign proliferative lesion of the breast tissue that usually presents as a palpable mass or abnormality of screening mammogram. It is postulated to have hormonal etiology, as most cases occur in premenopausal women or postmenopausal women treated with hormone replacement therapy.⁶ Historically, most patients with PASH were diagnosed after surgical excision, but in the current era of improved imaging and pathology, patients are more likely to be diagnosed by core needle biopsy.⁷ For those patients without symptoms and concordant imaging findings, routine excision can be avoided.

2. Don't routinely surgically excise biopsy proven fibroadenomas that are smaller than 2 cm in size.

Fibroadenomas are the most common benign tumor in the breast, accounting for 50% of all breast biopsies. They usually present as firm, well-circumscribed masses that have weak internal echoes on ultrasound.⁸ They exist under hormonal influence, because they may fluctuate in size with hormonal changes and regress after menopause.⁹ While patients often express concern regarding whether these lesions are malignant epithelial cancers, the true incidence is extremely rare, as confirmed by two large series. Hubbard et al. noted no cases of invasive or in situ in 723 patients who had surgical excision.¹⁰ Kuijper and colleagues noted only five cases of in situ cancer in 396 patients at the time of excision; no invasive cancers were seen.¹¹

In larger lesions, especially if they are enlarging, one may consider excision to rule out the possibility of phyllodes tumors, because core biopsy may not distinguish definitively between the two. The true incidence of phyllodes at time of excision is rare (0.8–9%).^{9–11} Some clinicopathologic features can help surgeons determine the need for surgical excision, including older age and larger tumor size (> 2 cm).^{9,10} Additionally, patient preferences and symptoms can guide decisions regarding surgical excision.

3. Don't routinely operate for a breast abscess without an initial attempt to percutaneously aspirate or drain it.

Breast abscesses are usually classified according to clinical presentation as either puerperal/lactational or non-puerperal. Lactational abscesses occur in 1–24% of breastfeeding women within 12 weeks of birth or at time of weaning. They occur in the periphery of the breast. Nonpuerperal abscesses are usually periareolar and are associated with obesity and smoking.¹²

Regardless of etiology, oral antibiotics are usually the first line of therapy. *Staphylococcus aureus* is the most common organism, which traditionally was treated with dicloxacillin or a first-generation cephalosporin. With the increasing incidence of community-acquired methicillin-resistant strains (MRSA), one may consider expanding coverage with clindamycin or sulfa-trimethoprim.¹³ Patients with non-puerperal abscesses may need additional coverage for other organisms, such as anaerobes.¹²

For those women with abscesses that fail to resolve with antibiotics alone, the dilemma exists as to whether the patient should undergo percutaneous intervention versus surgical drainage. Surgical drainage (I&D) most definitively leads to resolution of symptoms but is not without disadvantages. In a randomized trial of 45 patients comparing I&D to percutaneous aspiration, surgical drainage was associated with poor cosmesis in 70% patients and prolonged healing time (45 vs. 20 days).^{14,15} As shown by these and other authors, the majority of patients treated with aspiration do experience complete resolution without surgery (54–100%), sparing the need for general anesthesia, dressing changes, and interruption of breastfeeding. This should be the first step in management of women with abscesses. Size of cavity (> 5 cm), multiple loculations, late presentation of symptoms (> 6 days), and volume of pus aspirated has been associated with failure to resolve with percutaneous treatment alone, and patients with these findings may be appropriate candidates for surgical intervention.^{12,13}

4. Don't perform screening mammography in asymptomatic patients with normal exams who have less than 5-years life expectancy.

Use of screening mammography has been shown in pooled studies to reduce breast cancer-related mortality by 20%.¹⁶ The benefits of screening include detection of smaller tumors with less nodal involvement, resulting in less invasive treatment, such as breast-conserving surgery, and avoidance of chemotherapy.¹⁷

The incidence of breast cancer increases with age, but the true benefit of screening in the older population is not known, because women older than age 74 years often are excluded from clinical trials. As one would expect, the benefit of screening mammography decreases with the increasing number of comorbidities.¹⁸ It is estimated that 30% of cancers detected in older women are “overdiagnosed,” meaning they are asymptomatic and unlikely to become

clinically relevant in the woman's lifetime. Furthermore, older patients are more likely to present with more favorable histology (e.g., ER positive, HER2/neu negative, papillary and mucinous subtypes).¹⁷

The sensitivity of mammograms increases with age, but screening is not without risk; 12–27% women undergoing mammography will have a false-positive result, leading to a benign breast biopsy in 10–20% of women.¹⁹

Recommendations regarding most appropriate age for initiation of screening and interval timing (annual vs. biennial) differ between the major groups (American College of Radiology, Society of Breast Imaging, American Cancer Society, US Preventative Services Task Force). While no group recommends a specific age of cessation of screening, there is consensus that physicians must take into consideration competing risks of mortality when making the decision to continue screening.

It is accepted that to benefit from screening, women should have at least a 5- to 10-years life expectancy.¹⁷ Prediction models, such as those available at the ePrognosis website, can assist providers in estimating a woman's life expectancy, and decision aids also exist to assess patient's values.¹⁹ It is important for providers to initiate these conversations early to inform patients adequately regarding the risks and benefits of screening.¹⁹

5. Don't routinely drain non-painful, fluid-filled breast cysts.

Cysts are extremely common with a prevalence of 50–90%.²⁰ They are usually asymptomatic, presenting as a palpable mass or abnormality on screening mammography. They are most evident during the third and fourth decades, when hormonal function is at its peak; they may fluctuate with the menstrual cycle.²¹

Ultrasound is the preferred imaging modality. To be considered a simple cyst, the lesion must be well circumscribed, lack internal echoes, and exhibit posterior enhancement. For women with a simple cyst and no symptoms, no additional intervention is needed. The natural history of cysts consists of cyclic development and regression; 69% resolve within 5 years.²² For more complex lesions that contain internal echoes, thick walls, or internal septa, aspiration and possible needle biopsy may be considered.

DISCUSSION

The focus of the ABIM *Choosing Wisely*[®] campaign is to increase the healthcare value—defined as patient-centered outcomes achieved per healthcare dollar spent by reducing cost, promoting patient engagement, and creating measurable, patient-centered results.^{23,24} As a part of this initiative, professional organizations develop lists of domains of care decisions that patients and physicians should question when it comes to healthcare decisions.² The ASBrS first participated in this campaign in 2016 by creating a list of measures intended to improve appropriate use of testing and surgery in women with breast cancer.² Breast cancer is an area with vast amounts of well-developed data to guide therapy. The frequency of

benign breast disease diagnoses and known variability in treatment algorithms led to the decision to focus on a similar list for benign breast problems.

The current list (Fig. 1, consistent with *Choosing Wisely*[®] branding) was achieved by utilizing the modified Delphi technique and the expertise of the ASBrS PSQC after extensive review of the current evidence. This allowed the measures that were finally adopted to be applicable across a broad array of practice patterns. The intent of this report is not to serve as a systematic review of evidence regarding management of these common breast problems; there is also no optimal benchmark for adherence to these practices. There are specific scenarios where the choice of imaging test or intervention may be different than listed here; it is important to utilize clinical judgment and discuss the differences with the patient to determine the most appropriate plan of care.

The choices from this campaign were disseminated to patients and physicians utilizing ASBrS newsletters, the ASBrS website, presentation and discussion at the annual ASBrS conference, as well as its listing on the ABIM website. Plans to partner with Consumer Reports to feature these recommendations is planned.

REFERENCES

1. Levinson W, Kallewaard M, Bhatia RS, et al. "Choosing Wisely": a growing international campaign. *BMJ Qual Saf*. 2015;24:167–74.
2. Landercasper J, Bailey L, Berry TS, et al. Measures of appropriateness and value for breast surgeons and their patients: the American Society of Breast Surgeons Choosing Wisely (R) Initiative. *Ann Surg Oncol*. 2016;23:3112–8. [PubMed: 27334216]
3. American College of O, Gynecologists' Committee on Practice B-G. Practice Bulletin No. 164: diagnosis and management of benign breast disorders. *Obstet Gynecol*. 2016;127:e141–56. [PubMed: 27214189]
4. Morrow M The evaluation of common breast problems. *Am Fam Physician*. 2000;61:2371–78, 2385. [PubMed: 10794579]
5. Fitch K The Rand/UCLA appropriateness method user's manual. Santa Monica: Rand, 2001.
6. Drinka EK, Bargaje A, Ersahin CH, et al. Pseudoangiomatous stromal hyperplasia (PASH) of the breast: a clinicopathological study of 79 cases. *Int J Surg Pathol*. 2012;20:54–8. [PubMed: 21862488]
7. Hargaden GC, Yeh ED, Georgian-Smith D, et al. Analysis of the mammographic and sonographic features of pseudoangiomatous stromal hyperplasia. *AJR Am J Roentgenol*. 2008;191:359–63. [PubMed: 18647902]
8. Amin AL, Purdy AC, Mattingly JD, Kong AL, Termuhlen PM. Benign breast disease. *Surg Clin North Am*. 2013;93:299–308. [PubMed: 23464687]
9. Lee S, Mercado CL, Cangiarella JF, Chhor CM. Frequency and outcomes of biopsy-proven fibroadenomas recommended for surgical excision. *Clin Imaging*. 2017;50:31–6. [PubMed: 29258029]
10. Hubbard JL, Cagle K, Davis JW, Kaups KL, Kodama M. Criteria for excision of suspected fibroadenomas of the breast. *Am J Surg*. 2015;209:297–301. [PubMed: 25682095]
11. Kuijper A, Mommers EC, van der Wall E, van Diest PJ. Histopathology of fibroadenoma of the breast. *Am J Clin Pathol*. 2001;115:736–42. [PubMed: 11345838]
12. Trop I, Dugas A, David J, et al. Breast abscesses: evidence-based algorithms for diagnosis, management, and follow-up. *Radio-graphics*. 2011;31:1683–99.
13. Lam E, Chan T, Wiseman SM. Breast abscess: evidence based management recommendations. *Expert Rev Anti Infect Ther*. 2014;12:753–62. [PubMed: 24791941]

14. Eryilmaz R, Sahin M, Hakan Tekelioglu M, Daldal E. Management of lactational breast abscesses. *Breast*. 2005;14:375–9. [PubMed: 16216739]
15. Naeem M, Rahimnadjad MK, Rahimnadjad NA, Ahmed QJ, Fazel PA, Owais M. Comparison of incision and drainage against needle aspiration for the treatment of breast abscess. *Am Surg*. 2012;78:1224–7. [PubMed: 23089439]
16. Myers ER, Moorman P, Gierisch JM, et al. Benefits and harms of breast cancer screening: a systematic review. *JAMA*. 2015;314:1615–34. [PubMed: 26501537]
17. Lee CS, Moy L, Joe BN, Sickles EA, Niell BL. Screening for breast cancer in women age 75 years and older. *AJR Am J Roentgenol*. 2018;210:256–63. [PubMed: 29112471]
18. McPherson CP, Swenson KK, Lee MW. The effects of mammographic detection and comorbidity on the survival of older women with breast cancer. *J Am Geriatr Soc*. 2002;50:1061–8. [PubMed: 12110066]
19. Schonberg MA. Decision-making regarding mammography screening for older women. *J Am Geriatr Soc*. 2016;64: 2413–8. [PubMed: 27917463]
20. Rinaldi P, Ierardi C, Costantini M, et al. Cystic breast lesions: sonographic findings and clinical management. *J Ultrasound Med*. 2010;29:1617–26. [PubMed: 20966473]
21. Berg WA, Sechtin AG, Marques H, Zhang Z. Cystic breast masses and the ACRIN 6666 experience. *Radiol Clin North Am*. 2010;48:931–87. [PubMed: 20868895]
22. Brenner RJ, Bein ME, Sarti DA, Vinstein AL. Spontaneous regression of interval benign cysts of the breast. *Radiology*. 1994;193:365–8. [PubMed: 7972744]
23. Porter ME, Teisberg EO. Redefining health care: creating value-based competition on results. Boston, MA: Harvard Business School Press, 2006.
24. Fayanju OM, Mayo TL, Spinks TE, et al. Value-based breast cancer care: a multidisciplinary approach for defining patient-centered outcomes. *Ann Surg Oncol*. 2016;23:2385–90. [PubMed: 26979306]

The American Society of Breast Surgeons – Benign Breast Disease

Five Things Physicians and Patients Should Question

- 1 Don't routinely excise areas of psuedoangiomatous stromal hyperplasia (PASH) of the breast in patients who are not having symptoms from it.**
 PASH is a benign breast condition that can present as either an abnormality on imaging or a palpable mass. Unless the lesion is suspicious or a patient has symptoms, a diagnosis of PASH on needle biopsy does not necessitate surgical removal.
- 2 Don't routinely surgically excise biopsy proven fibroadenomas that are smaller than 2 centimeters in size.**
 Fibroadenomas are non-cancerous solid masses within the breast that should be removed only if they are large, bothersome to the patient, or increasing in size. If a needle biopsy shows that a mass less than 2 centimeters in size is a fibroadenoma, with no other concerning features, it does not have to be surgically removed.
- 3 Don't routinely operate for a breast abscess without an initial attempt to percutaneously aspirate or drain it.**
 An abscess is an infection of the breast tissue, forming pockets of pus that can be painful. Many times these can be treated by placing a large needle in the pocket and draining the fluid instead of performing an operation where an incision is made and the fluid removed. The needle removal of the fluid forms less scar and sometimes avoids an operation.
- 4 Don't perform screening mammography in asymptomatic patients with normal exams who have less than 5-year life expectancy.**
 Mammography identifies breast cancers at early stages and has demonstrated benefits in reducing mortality and morbidity from a breast cancer diagnosis. There is minimal benefit of screening mammography in women with life expectancies of <5 years. Additionally, there is a risk of false positives and potential procedures that do not provide patients improved outcomes.
- 5 Don't routinely drain non-painful fluid-filled breast cysts.**
 Breast cysts are common. They are harmless fluid filled sacs. If an ultrasound (sonogram) confirms that a breast mass is a simple cyst, it does not need to be drained unless it is bothersome to the patient or if there are concerns it could be something other than a cyst or has complex characteristics.

FIG. 1.

Complete list consistent with *Choosing Wisely*[®] branding

TABLE 1

Candidate *Choosing Wisely*® benign breast disease recommendations—October 2016

1. Don't culture nipple discharge unless there is clinical evidence of infection
2. Don't send breast cyst fluid for cytology unless clinically suspicious
3. Do talk to your primary care provider about lifestyle changes that can reduce your risk of developing breast cancer and improve your overall health
4. Don't do mammography in pregnant or nursing patients unless highly suspicious
5. Don't perform screening mammography in asymptomatic patients with normal exams who have less than 5-years life expectancy
6. Do not assume that if you have no family history or other risk factors that you are not at risk for development of breast cancer. Most patients who develop breast cancer have no identifiable risk factors
7. Don't routinely aspirate asymptomatic breast cysts with nonsuspicious clinical and imaging features
8. Don't always perform breast operations under general anesthesia
9. Don't perform diagnostic breast evaluation in women with "physiologic" nipple discharge and normal examination
10. Don't operate on a breast abscess without an initial attempt to percutaneously aspirate or drain it
11. Don't perform surgical excision of painful areas of fibrocystic breast disease
12. Don't routinely surgically excise biopsy-proven fibroadenomas that are < 2 cm in size
13. Don't routinely excise ectopic axillary breast tissue
14. Don't routinely excise biopsy-proven papilloma that do not demonstrate atypia
15. If you notice any persistent change in either breast, do not assume that it is benign, even if you have had recent breast imaging. Call and make an appointment with your primary care provider or with a breast specialist
16. Don't order prolactin and thyroid tests routinely in women with nipple discharge
17. Don't perform mammogram, biopsy, or hormone testing in boys and young men with pseudogynecomastia
18. Don't routinely excise asymptomatic PASH of the breast
19. Don't do thermography of the breast as a diagnostic examination
20. Don't routinely give narcotics for excision of benign lesions
21. Don't routinely do 6-months follow-up for benign lesions or unlimited follow-up
22. Even if you have had lumps in your breasts in the past that were cysts or fibroadenomas, do not assume that a new lump is benign
23. Do not assume that if you had a normal mammogram that a persistent change in one of your breasts is not serious
24. Don't routinely excise high-risk lesions of the breast
25. Don't attempt to obtain secretions from the nipples as part of a routine breast examination (i.e., do not squeeze the nipples as part of a routine breast examination)
26. Do not order genetic testing when it is unlikely to yield actionable results
27. Do talk to your primary care provider about lifestyle changes that can reduce your risk of developing breast cancer and improve your overall health
28. Do not have a breast MRI if it is unlikely to resolve your or your physician's concern or an abnormal imaging finding