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✓ **What are the categories and management rules for Breast imaging reporting and data system?**

Introduction

1.   BIRADS (Breast Imaging Reporting and Data System) is a *risk assessment* and *quality assurance* tool developed by American College of Radiology that provides a widely accepted lexicon and reporting schema for *imaging of the breast*. It applies to *mammography*, *Ultrasound*, and *MRI*.
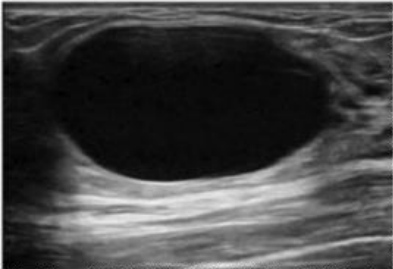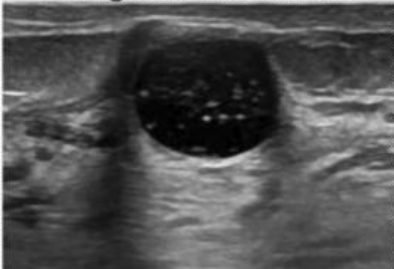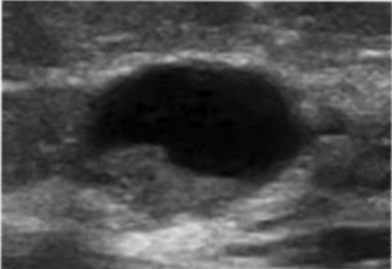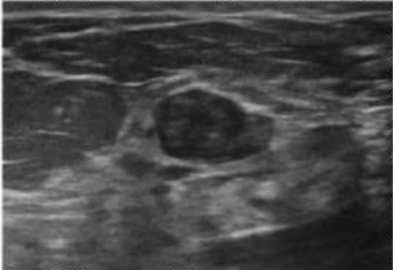
BIRADS Categories and Management Rules
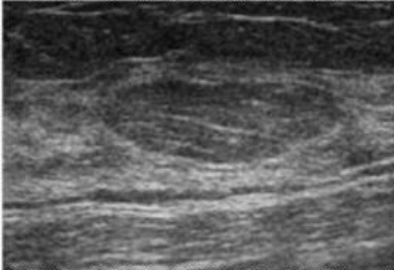
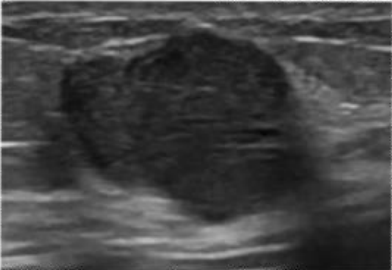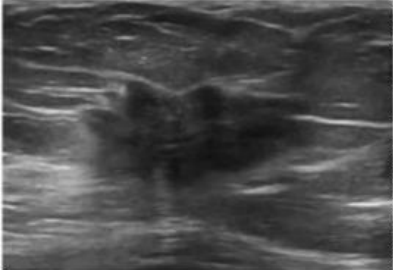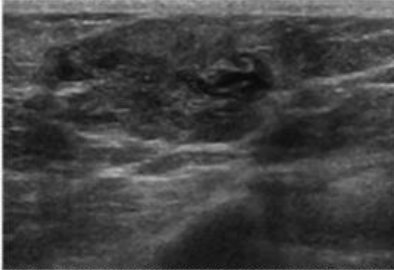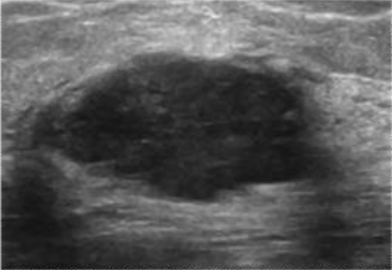2.   Doctors use a standard system to describe mammogram findings and results. This system sorts the results into *categories numbered 1 through 5*. These same BI-RADS categories can also be used to describe the results of a *breast Ultrasound* or *breast MRI* exam. BIRADS categories along with description and management rules are given in table shown below:

	Category	Description	Management rules
1	*Sonographically normal tissues*	• That cause mammographic or clinical abnormalities	
2	*Bengin entities*	• Intramammary lymph nodes • Estatic ducts • All simple and many complicated cysts, and definitely bengin solid nodules, such as 　○ Lipoma 　○ hamartoma	• Routine screening • FCU
3	"*probably bengin*" *lesions*, (2% or less risk of malignancy)	• Some complicated and complex cysts • Small intraductal papillomas and a subset of fibroadenomas	• Surgical biopsy • Image guided needle biopsy • Short Interval sonographic f/up
4	Large ACR BIRADS 4 category that is termed "*suspicious*" have been divided into three subcategories.	• 4a : "mildly suspicious"[carries>2 to 10% risk of malignancy] • 4b : "moderately suspicios"[carries>10 to 50% rik] • 4c: risk of malignancy is >50%to <95%	• Biopsy
5	"*malignant*"	• >= 95% risk of malignancy	

Conclusion

3.   With recent developments in ultrasound equipment, *Sonography* is now a *well-established tool* in breast imaging.   The use of *ultrasound* for assessment of BI-RADS categories allows *malignant solid masses* to be distinguished from benign ones as *accurately* as does mammography.

Description of the Sonographic appearance exhibited by different breast tumors

Benign breast tumors

Simple cyst
- Circumscribed margin
- Thin walled
- Anechoic
- Posterior acoustic enhancement

Complicated cyst
- Circumscribed margin
- Thin walled
- Internal echoes
- Posterior acoustic enhancement

Complex cyst
- Circumscribed margin
- Cystic and solid components
- Posterior acoustic enhancement

Fibroadenoma
- Smooth, oval shaped
- Homogeneous
- Hypoechoic

Lipoma
- Circumscribed margin
- Soft mass with fat density

Papiloma
- Solid mass
- Circumscribed margin

Malignant breast tumors

Infiltrating ductal carcinoma
- Ill-defined mass
- Irregular contour
- Posterior acoustic shadowing

Mucinous carcinoma
- Ill-defined mass
- Mixed solid and cystic components
- Posterior acoustic enhancement

Medullary carcinoma
- Ill-defined lobuated mass
- Hypoechoic
- Posterior acoustic enhancement