

# Breast lesions

Lesion		Incidence	Presentations	Mammography	Histology	Cancer	Notes
Non proliferative Breast Changes (fibrocystic changes).		- most common - premenopausal women	- lumpy breast - nipple discharge - pain	- densities - calcifications	- Cysts formation with apocrine metaplasia - Fibrosis - Adenosis	<b>No</b> increased risk for cancer	-
P R O L I F R A T I V E  With out A T Y P I A	Epithelial Hyperplasia	Usual in reproductive group	Rarely palpable	Small densities	- heterogeneous cells both luminal & myoepithelial cells - Irregular slit-like fenestrations are prominent at the periphery	Increased Risk for cancer is 1.5 - 2 times	-
	Sclerosing Adenosis	45-50	Grossly mimic cancer	Calcification	Presence of <b>double layers</b> are helpful in distinguishing it from cancer		associated with fibrocystic change
	Complex Sclerosing Lesion (Radial Scar)	-		irregular densities	central nidus of entrapped glands in a hyalinized stroma		-
	Large duct papillomas (central papillomas)	More common than small duct papillomas	bloody nipple discharge	- Solitary - in <b>lactiferous duct</b> at the nipple (palpable)	(finger like projection) that arises from the ductal epithelium	increase the risk of subsequent carcinoma	-
	Small duct papillomas	-	-	- Multiple - deeper within the ductal system			-
	Proliferative fibrocystic disease	-	-	-	-	-	-
Proliferative breast disease <b>with</b> atypia		-	-	-	- Atypical hyperplasia - lacking features for CIS	<b>4-5 ↑ risk for cancer</b>	ADH & ALD

Carcinoma In Situ					
Lesion		Presentations	Mammography	Histology	Notes
Ductal Carcinoma In Situ (80%)	Comedo	- <b>Multifocal</b> → recurrence after treatment - mostly not palpable	radiologic calcifications	large central necrosis & calcified debris	100% chance of becoming invasive
	Cribriform		-	- cells arranged around “punched-out” spaces = “ <b>cookie cutter</b> ” - calcifying secretory material	30% chance of becoming invasive
	papillary, Micropapillary		-	-	
	solid		-	cells fill spaces	-
	Paget’s Disease	red, scaly eczematous, lesion on the nipple & areola	-	- Paget cells found scattered in the <b>epidermis</b> - Stain positively for <b>mucin</b>	50% of women have underlying invasive carcinoma
Lobular carcinoma in situ (20%)		- Always an incidental - Doesn’t form palpable mass	Microcalcifications are <u>infrequent</u>	- Monomorphic population of small, rounded cells - architecture can still be recognized - signet ring cells	- 30% chance of becoming invasive within 20Y → follow up - <b>multicentric &amp; bilateral</b>

Inflammatory lesion	Relation	Cause
Acute mastitis	1st month of breastfeeding	Staph infection
Periductal mastitis	not associated with lactation	cigarette smoking
Fat necrosis	-	mechanical trauma, surgical
Lymphocytic mastopathy	diabetics	-
Granulomatous mastitis	-	sarcoid, TB, but mostly idiopathic

Lesion	Incidence	Gross	Stromal reaction	Histology	Genes	Notes
NOS Ductal	70-80%	- Firm, hard, with an irregular border (stellate infiltration) - calcifications.	fibroblastic (desmoplastic) → palpable mass with hard consistency (scirrhous carcinoma)	-	- Expresses Estrogen or Progesterone - overexpression of HER2/NEU	- grating sound when cut - nipple retraction
Lobular	10%	firm to hard with irregular margins	varies from marked fibroblastic response to little reaction → discrete mass to a subtle	indian file pattern	E-Cadherin protein	- multicentric & bilateral - unique type of metastases
Medullary Carcinoma	2%	well circumscribed mass	Doesn't produce any fibroblastic reaction → soft and fleshy	- solid sheets of malignant cells - lymphocytes & plasma cells	BRCA1 mutations (triple negative)	Mistaken clinically and radiologically for fibroadenoma
Colloid Carcinoma (Mucinous carcinoma)	2% (older women)	- circumscribed - slow growing - glistening cut surface	lacks fibrous stroma	islands & single tumors cells floating in pools of extracellular mucin	Most express hormone receptors	pure mucinous or mixed

Lesion	Incidence	Clinical	Grossly	Histology	Treatment
Fibroadenoma (FA)	<ul style="list-style-type: none"> <li>before 30</li> <li>most common benign</li> </ul>	mobile lump (breast mouse)	<ul style="list-style-type: none"> <li>pearl-white &amp; whorled</li> <li>solitary</li> </ul>	mixture of ducts & fibrous CT	lumpectomy
Phylloides tumor	any age	-	Palpable masses	fibro-epithelial tumors arranged in leaf like pattern	excised with wide margins

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