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PICTORIAL ESSAY

Breast Lesions in Paediatric and Young Adults: A Pictorial Essay

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INTRODUCTION

Breast lesions can present as palpable lumps in children and young adults, causing anxiety to patients and their caregivers. Although malignant lesions are exceedingly rare in this age-group, familiarity with the spectrum of breast lesions and the diagnostic approach is crucial to guide appropriate management. Evaluation and intervention should be tailored to minimise damage to developing breast tissue. All patients with breast abnormalities should first undergo clinical assessment.[1] When imaging is indicated, ultrasound (US) is recommended as the initial radiological examination for females under 30 years of age with palpable breast masses, according to the American College of Radiology (ACR) Appropriateness Criteria.[2] Mammography is less favoured due to the ionising radiation and reduced sensitivity in dense breast tissues of young patients. Most benign lesions in young women are not visible on mammography.[2,3] Digital breast tomosynthesis potentially increases lesion detection in overlapping tissue in young dense breasts. Magnetic resonance imaging (MRI) is used for defining disease extent, surgical planning, and screening in high-risk females with hereditary predispositions and prior irradiation.[1,4]

This pictorial essay showcases both benign and malignant breast lesions in individuals under 30 years of age on multimodality imaging, with emphasis on various MRI presentations as its use in both diagnostic and screening indications has been rapidly expanding. Guidelines on screening and risk factors for early-onset breast cancer, including hereditary predispositions and prior radiotherapy, are included. The role of radiologists in follow-up imaging and the appropriate timing for image-guided intervention, while staying aware of the risks of iatrogenic injury to developing breasts, is discussed.

NORMAL BREAST DEVELOPMENT AND VARIANTS

Neonatal Breast Development

Breast development occurs at prenatal and pubertal stages. At the fourth week of gestation, paired ectodermal thickenings develop on the ventral surface of the embryo

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and extend in a line between the axilla and inguinal regions, forming the mammary crest. This is followed by involution of the mammary crest at the tenth week of gestation except at the fourth intercostal spaces, giving rise to breast buds.[3,5]

Accessory breast tissue, also known as polymastia, develops when there is incomplete regression. This can be found in up to 6% of the population, usually occurring along the mammary crest and most commonly in the axilla.[1] Imaging shows heterogeneous fibroglandular tissue with characteristics similar to normal breast parenchyma[3,6] (Figure 1). It is crucial to recognise this variant as it could be affected by the pathological processes that occur in normal breast tissues.

Physiological Neonatal Breast Development

Up to 70% of newborns experience physiological breast development under maternal oestrogen influence.[3] It can be unilateral or more commonly bilateral. This condition is transient and usually resolves spontaneously by 6 months of age. Normal breast buds may fluctuate in size and remain palpable up to 2 years of age, after which they remain quiescent until puberty.[3] US features include

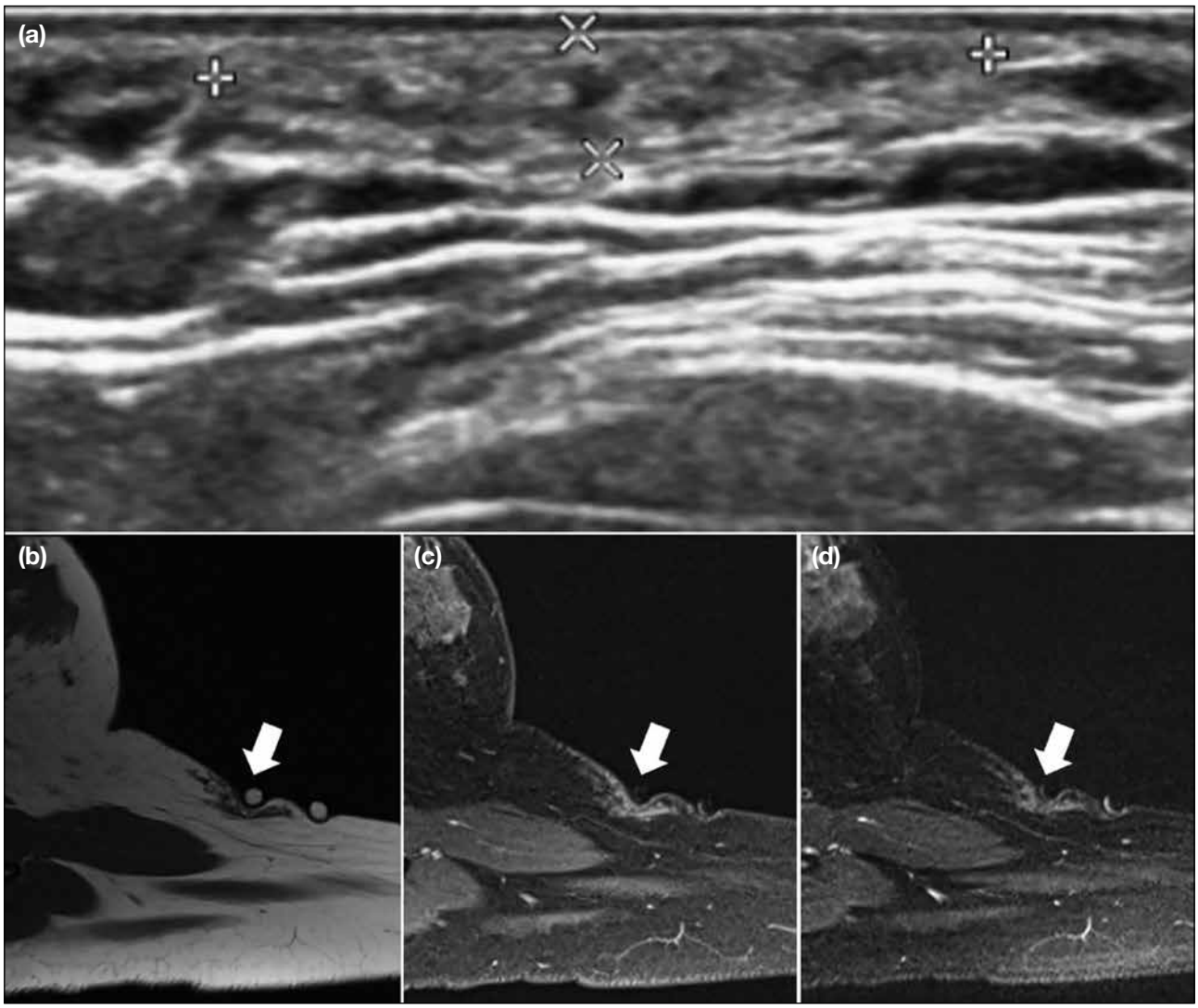

Figure 1. A 21-year-old female presented with a painful left axillary nodule. (a) Targeted ultrasound (US) shows a heterogeneous hyperechoic lesion at the left axilla similar to glandular breast tissue. (b-d) Magnetic resonance imaging (MRI) was subsequently performed as the US findings did not account for the clinical symptoms of significant pain. Axial T1-weighted (b), T2-weighted (c), and post-contrast T1-weighted MRI (d) of the left axilla showed a subcutaneous lesion with tissue signal identical to the left breast glandular tissue on all phases (arrows), consistent with accessory breast tissue.

retroareolar hypoechoic tissue (Figure 2), or hyperechoic nodule with hypoechoic linear structures representing simple branch ducts.

Thelarche

During puberty, female breasts develop under the influence of the secretion of oestrogen and other hormones. This is known as thelarche, which is divided into five stages on the Tanner scale[5,7] (Figure 3). On US, stage I shows ill-defined echogenic retroareolar tissue. In stage II, a central stellate hypoechoic area appears. Stage III shows central spider-like hypoechoic projections extending out from the retroareolar region, with surrounding hyperechoic glandular tissue. Stage IV involves growth of periareolar hyperechoic fibroglandular tissue with a hypoechoic central area. Finally, stage V reveals hyperechoic fibroglandular tissue and increased subcutaneous adipose tissue with disappearance of the central hypoechoic area.

Premature Thelarche

Premature thelarche refers to isolated early breast

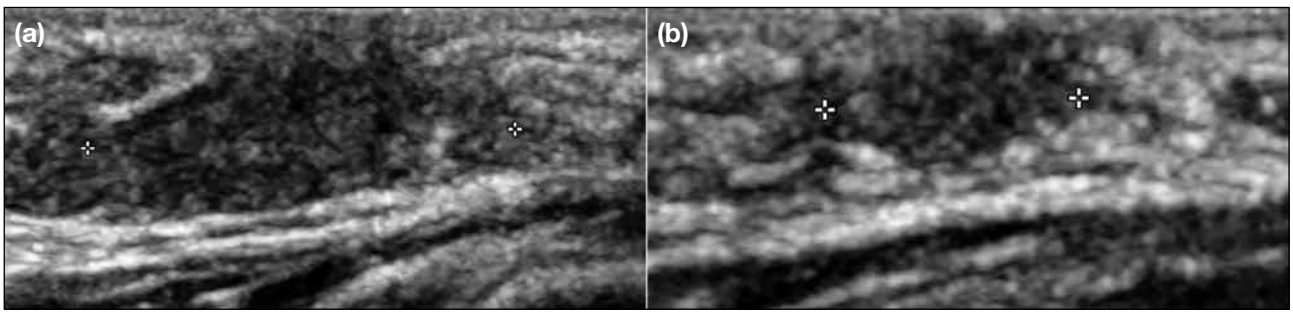

Figure 2. A 7-month-old female infant with palpable right breast mass. (a) Right breast. (b) Left breast. Ultrasound shows asymmetrical hypoechoic tissues in both retroareolar regions, more prominent on the right. There was spontaneous resolution at follow-up, consistent with physiological breast development.

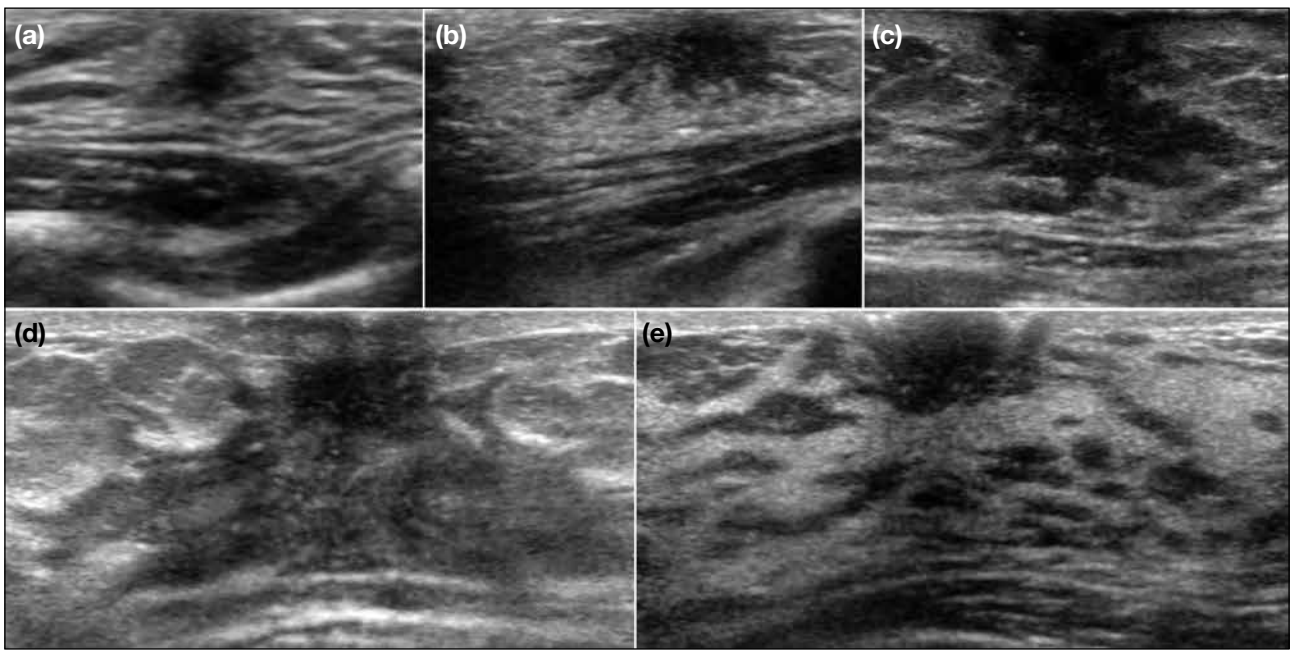

Figure 3. Ultrasound features of Tanner stages of normal breast development. (a) Stage I: Ill-defined echogenic retroareolar tissue. (b) Stage II: Echogenic retroareolar tissue with central stellate hypoechoic area. (c) Stage III: Central spider-like hypoechoic projections extending away from the retroareolar region, with surrounding hyperechoic glandular tissue. (d) Stage IV: The retroareolar hypoechoic central area persists, with enlargement of the periareolar hyperechoic fibroglandular tissue. (e) Stage V: Mature breast appearance with hyperechoic fibroglandular tissue and increased subcutaneous adipose tissue. The central hypoechoic area is absent.

development in girls under 8 years without associated skeletal maturation.[5] It can be unilateral or bilateral, symmetrical or asymmetrical. Imaging features are identical to thelarche, seen as developing breast tissue without discrete lesion on US.[8]

Gynaecomastia

Gynaecomastia refers to enlargement of male breast tissue, occurring most frequently during adolescence due to physiological transient increase in oestrogen levels. It typically involutes spontaneously when androgen levels rise.[3] Secondary causes include Klinefelter syndrome; drug use (e.g., anabolic steroids, exogenous oestrogens, marijuana); and tumours such as prolactinomas.[3,5] On mammography, a flame-shaped retroareolar density is characteristic, while it is triangular and hypoechoic on US (Figure 4).[3]

NON-NEOPLASTIC LESIONS

Trauma or Surgery-Related

Haematomas should be considered in patients who present with a new-onset breast lesion after recent trauma or surgery. They can be solid, cystic, or of mixed echogenicity on US, and are commonly avascular[1,3] (Figure 5). It is crucial to look for the presence of foreign bodies, as removal may be needed.[3]

Prior breast trauma can also result in fat necrosis, which may appear as solid masses to oil cysts, depending on lesion age.[3,5] On US, they can be hyperechoic, hypoechoic with posterior acoustic enhancement, anechoic, or of mixed echogenicity with internal cystic spaces. With a typical trauma history, follow-up US in 3 to 6 months is suggested to confirm resolution.[3]

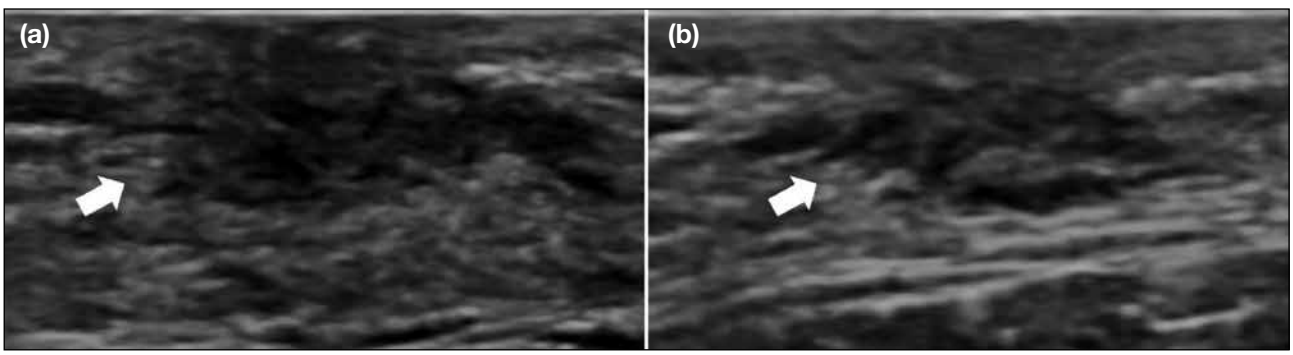

Figure 4. A 17-year-old male presented with a 3-month history of progressively enlarging bilateral chest wall masses. (a) Right breast. (b) Left breast. Ultrasound (US) showed triangular hypoechoic areas in the subareolar region of both breasts without increased vascularity on Doppler US (arrows), consistent with gynaecomastia.

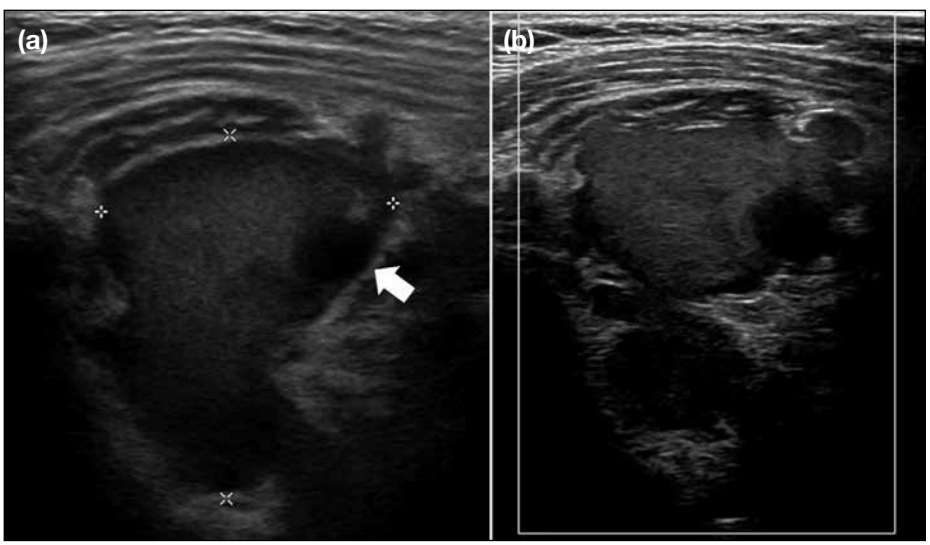

Figure 5. A 6-year-old girl presented with a right anterior chest wall mass after a fall injury. (a) Ultrasound (US) shows a lobulated echogenic lesion with cystic areas (arrow) beneath the right pectoralis major and minor muscles, superficial to the ribcage. (b) Colour Doppler US shows no increased vascularity. Follow-up US (not shown) shows complete resolution of the mass, consistent with haematoma.

Galactoceles

Galactoceles are milk retention cysts resulting from lactiferous duct obstruction. They are predominantly seen in pregnant or lactating women and are rare in infants and adolescents. US shows a complex cystic mass with variable internal echogenicity depending on its fat and water content. Fat-fluid levels within the lesion are considered diagnostic (Figure 6).[3,5]

Cysts

Cysts are uncommon in paediatric patients and are usually solitary.[1] A cyst appears as an avascular anechoic lesion with thin wall and posterior acoustic enhancement on US, indicating benignity. Infected cysts may contain internal echoes, fluid-fluid levels, thickened walls, and peripheral hypervascularity.[7]

Infection and Inflammation

Mastitis refers to infection or inflammation of breast tissue. In the first 2 months of life, mastitis neonatorum can occur due to mammary ductal obstruction or skin breaks permitting bacteria seeding.[7] Puerperal mastitis can affect pregnant or breast-feeding women. The most common pathogen is *Staphylococcus aureus*.[7,8] On US, mastitis may appear as focal or diffuse ill-defined heterogeneous hypoechoic and hyperechoic areas, with overlying skin thickening. Colour Doppler may show hyperaemia with central flow (Figure 7).[1,3,4]

Granulomatous mastitis may be idiopathic or due to systemic conditions, including autoimmune diseases, diabetes, or tuberculosis. These should be excluded before diagnosing idiopathic granulomatous mastitis. Over 50% of cases showed an irregular hypoechoic parallel mass with tubular extensions on US (Figure 8).[9]

Breast abscesses are often seen as anechoic or hypoechoic lesions with debris and posterior acoustic enhancement on US. In contrast to mastitis, abscesses show only peripheral flow.[7,8]

Infantile Mammary Duct Ectasia

Infantile mammary duct ectasia refers to retroareolar ductal dilatation in infants and young children. The exact cause is unknown.[3] Patients may be asymptomatic or present with bloody nipple discharge.[3] US demonstrates a cluster of tubular anechoic structures with or without internal debris.[3] Associated simple or multiloculated cystic lesions may also be seen.[3] The condition typically resolves after breastfeeding ceases.[3]

Intramammary Lymph Nodes

Intramammary lymph nodes, found in the breast and axillary tail, may become reactive due to inflammation, infection, or recent vaccination. Suspicious features include eccentric cortical thickening of more than 3 mm,

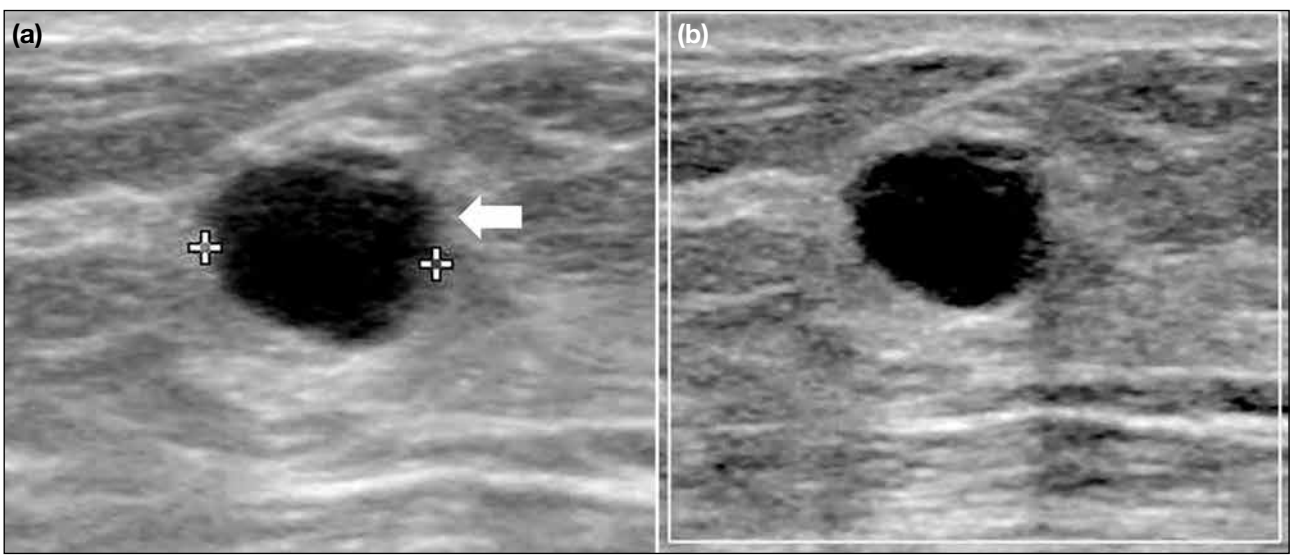

Figure 6. A 23-year-old lactating female presented with a palpable lump in the left breast at 10 o'clock position. (a) Targeted ultrasound (US) in transverse plane shows a hypoechoic and anechoic lesion with a fat-fluid level (arrow) and posterior acoustic enhancement. (b) Doppler US study shows no internal vascularity. Fine needle aspiration confirmed the diagnosis of galactocele.

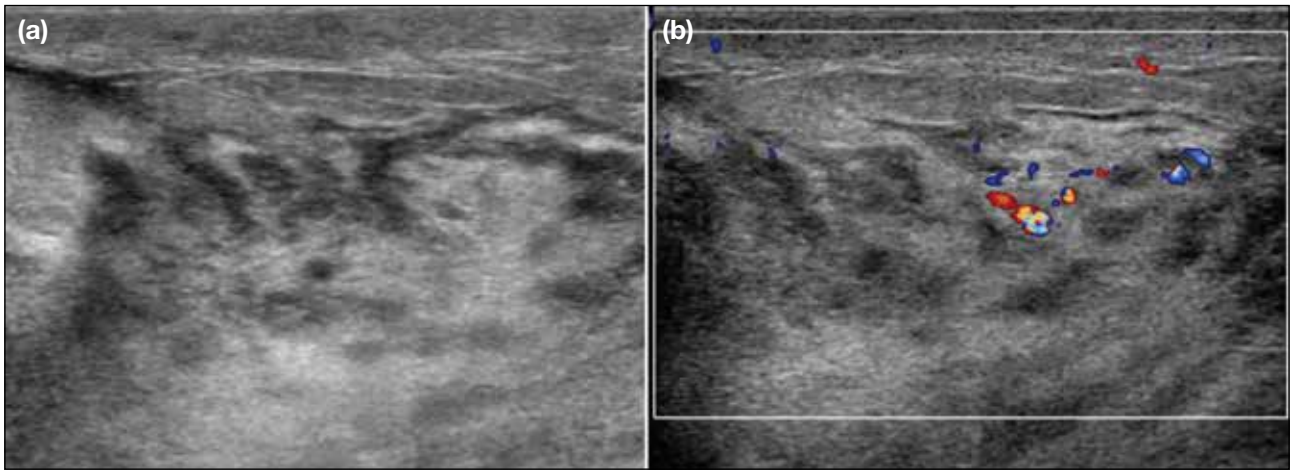

Figure 7. A 24-year-old female presented with fever and mastalgia for 5 days during breastfeeding. Physical examination found erythema in the lower outer quadrant of the left breast. Targeted ultrasound shows an ill-defined area of altered echotexture and loss of the normal parenchymal pattern (a). The subcutaneous fat appeared hyperechoic, while the glandular parenchyma was hypoechoic with increased central blood flow on colour Doppler (b). The overlying skin was thickened and hyperechoic. The features were suggestive of puerperal mastitis.

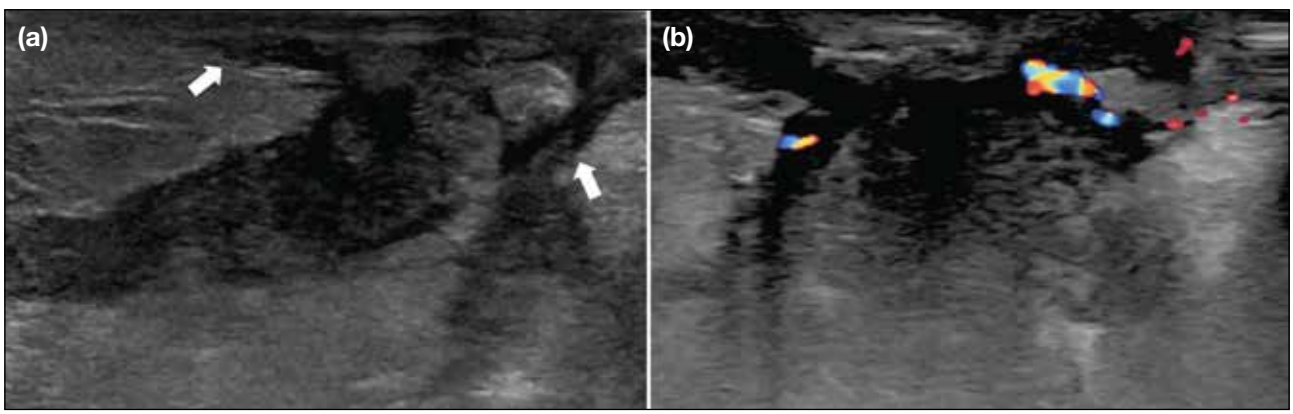

Figure 8. A 27-year-old female presented with a 1-week history of increasing left breast swelling and erythema, which persisted despite antibiotics. (a) Ultrasound showed an irregular hypoechoic mass with tubular extensions (arrows) in the subareolar region of the left breast. There was associated oedema in the adjacent fibroglandular tissue and mild overlying skin thickening. (b) The mass showed peripheral vascularity on colour Doppler, mimicking a breast abscess. Incision and drainage confirmed the diagnosis of granulomatous mastitis. Acid-fast bacilli smear and culture were negative.

extracapsular extension, loss of fatty hilum, or non-hilar blood flow; all require tissue sampling.[3]

NEOPLASTIC LESIONS

Vascular and Lymphatic Tumours

Infantile haemangioma (IH) is the most common benign neoplasm in infants and can occur in the breast.[8,10] It is typically absent at birth, rapidly proliferates in the first few weeks to months of life and usually reaches its maximal size by 3 months of age, then spontaneously involutes from 12 months of age, with complete regression by 4 years old in most cases.[3] US or MRI are mainly for treatment planning. During proliferation, IH appears as a well-defined solid mass with a lobulated border of mixed echogenicity on US, with marked diffuse increased vascularity (Figure 9), followed by the plateau phase where it stops enlarging. Finally, IH decreases in size and vascularity during the involution phase. Echogenic areas may be identified, suggestive of fibrofatty tissue. Other vascular tumours such as congenital haemangioma and tufted angioma are uncommon.[10]

Lymphangiomas are benign developmental lymphatic

tumours, most frequently in the neck or axilla, but may also affect the breast. Usually presenting before 2 years of age, they appear as avascular compressible multiseptated cystic masses on US (Figure 10) and T2-hyperintense lesions without an enhancing solid component on MRI[3] (Figure 11).

Fibroepithelial Lesions

Fibroadenoma is the most common benign fibroepithelial tumour in females under 30 years of age, arising from stromal and epithelial tissues and accounting for 54% to 94% of breast masses in children and adolescents.[5] Masses reaching 5 cm are termed giant fibroadenomas.[3,5]

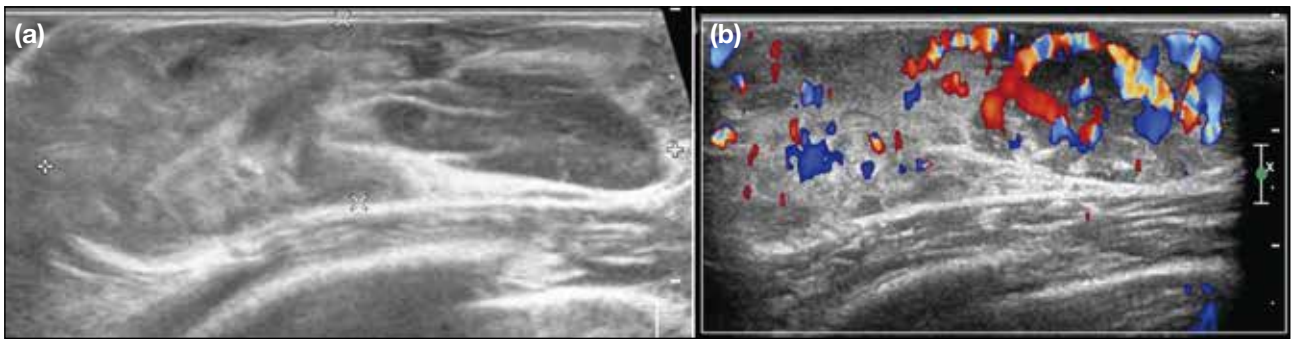

Figure 9. A 4-month-old female infant was noted to have a rapidly enlarging right breast mass since 2 weeks of age. Targeted ultrasound [US] (a) shows a mixed hypoechoic and hyperechoic mass in the right breast with multiple dilated vessels on colour Doppler US (b), compatible with the clinical diagnosis of infantile haemangioma.

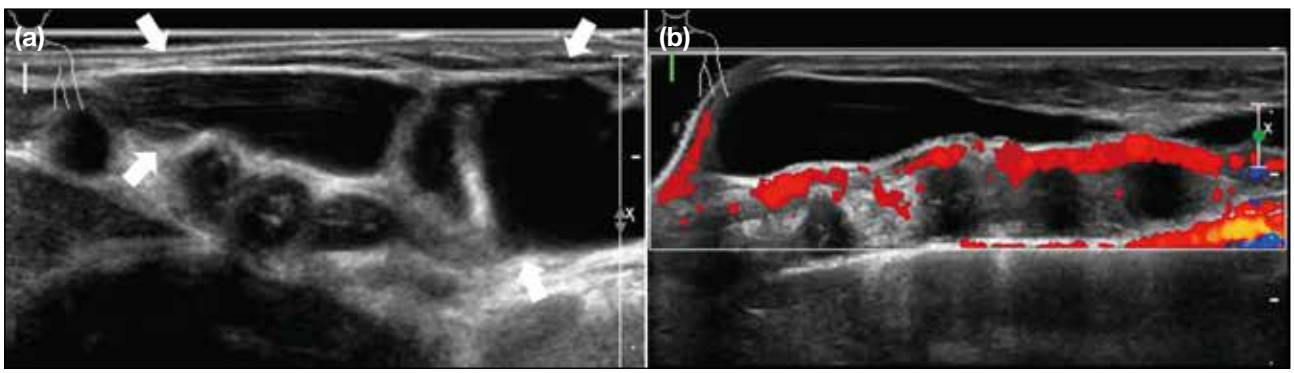

Figure 10. A 1-month-old male infant found to have a soft fluctuant right anterior chest wall mass since birth. (a) Targeted ultrasound (US) revealed a multilocular anechoic cystic mass with lobulated margins and posterior acoustic enhancement at the subcutaneous layer with no solid component (arrows). (b) Colour Doppler US shows no internal vascularity within the mass. Features were consistent with lymphangioma.

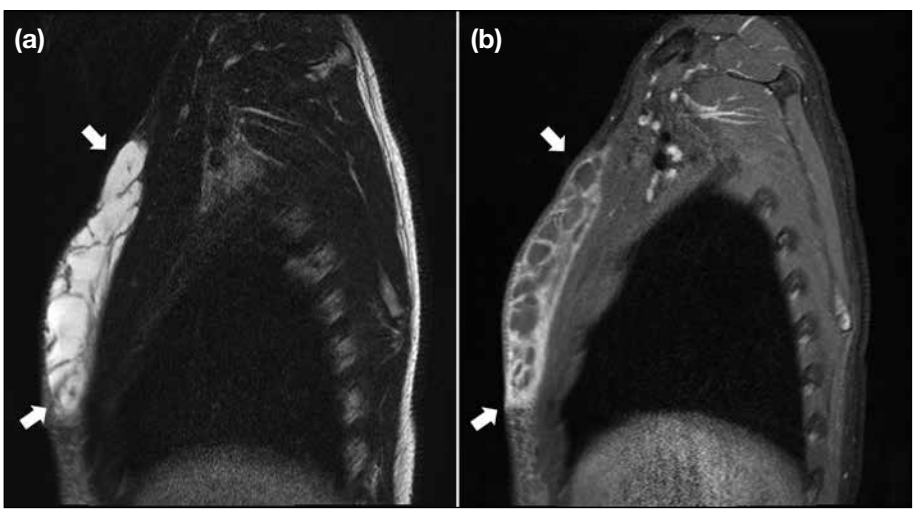

Figure 11. A 14-year-old boy presented with right breast swelling for 6 months. (a) T2-weighted magnetic resonance imaging (MRI) with fat saturation. (b) Post-contrast T1-weighted MRI with fat saturation. MRI shows a multiloculated T2-hyperintense mass with thin internal enhancing septations in the subcutaneous layer of the right upper anterior chest wall (arrows). No enhancing solid component was seen. Fine needle aspiration confirmed the diagnosis of lymphangioma.

Juvenile fibroadenoma is an uncommon variant with hypercellular stromal proliferation that can grow rapidly and cause skin distortion.[1,4,5] On US, fibroadenoma typically appears as a well-circumscribed hypoechoic parallel mass with variable posterior enhancement and sometimes a pseudocapsule. Fibroadenomas in up to one-third of young breasts are vascular[7] (Figure 12a).

Phyllodes tumour is another fibroepithelial tumour of cellular stroma with branching leaf-like epithelium-lined cystic spaces, typically presenting as a rapid growing mass.[3] It may look sonographically identical to fibroadenoma, appearing as an oval homogeneous hypoechoic circumscribed parallel solid mass[3] (Figure 12b). Phyllodes tumours are classified as benign,

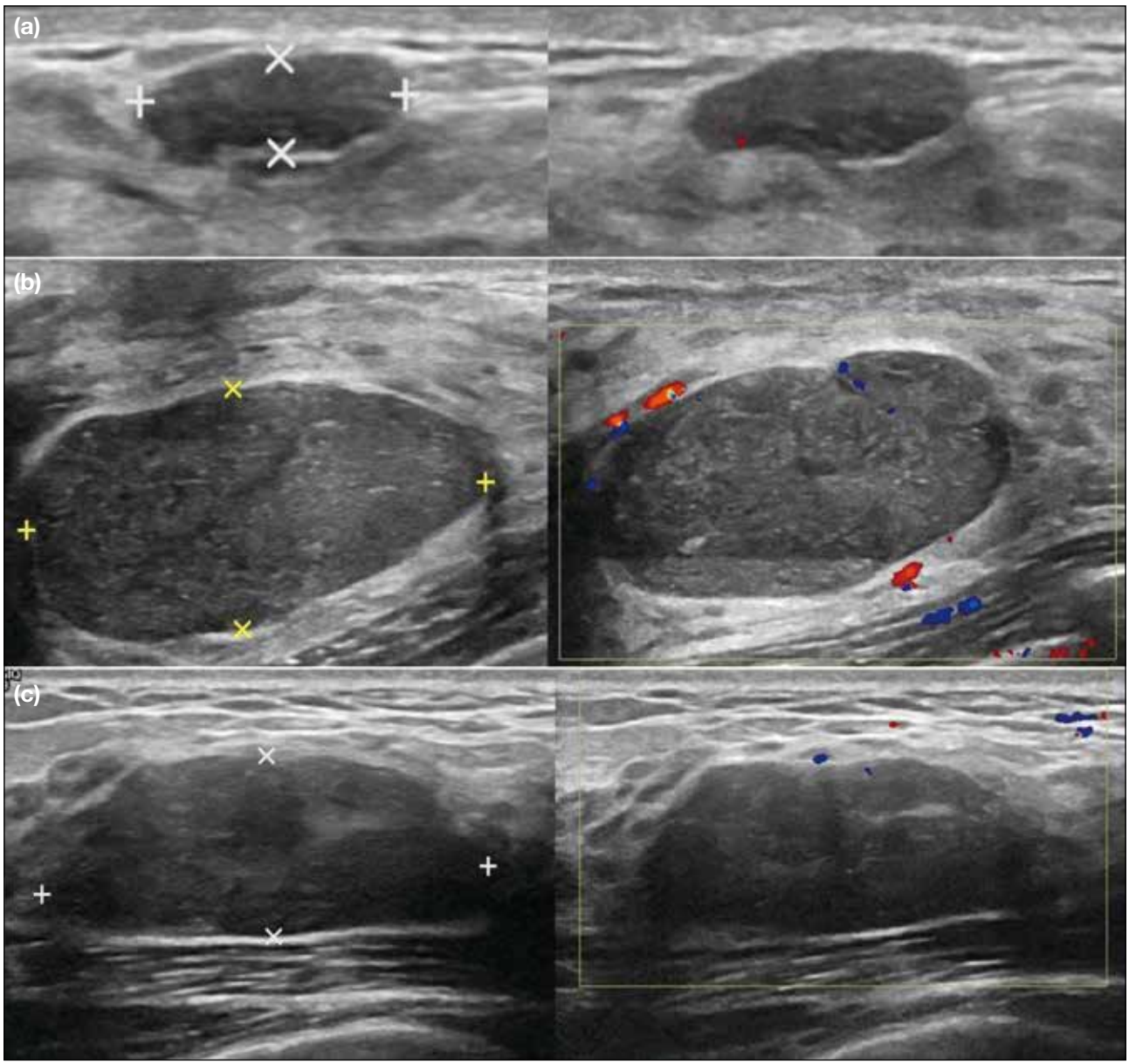

Figure 12. A 17-year-old female presented with bilateral self-palpated breast masses. Initial ultrasound (US) showed multiple hypoechoic lesions in both breasts (not shown). A follow-up US was performed 1 year later. (a) In the left breast at 6 o'clock position 2 cm from the nipple, an oval parallel circumscribed and hypoechoic lesion with mild vascularity on colour Doppler US was stable in size. (b) In the left breast at 6 o'clock position in the subareolar region, an oval parallel circumscribed and hypoechoic lesion showed interval increase in size, with mild vascularity on colour Doppler US. (c) In the right breast at 12 o'clock position, an oval parallel microlobulated and hypoechoic lesion also showed interval enlargement, without increased Doppler flow. Surgical excision was performed. Pathology showed fibroadenoma and a benign phyllodes tumour in the left breast, and pseudoangiomatous stromal hyperplasia (PASH) in the right breast, corresponding with findings on US. This highlights the occasional similar appearances of fibroadenoma, phyllodes tumour, and PASH.

borderline or malignant subtypes; however, all types may recur and metastasize, especially to the lungs.[3] In all, 85% of phyllodes tumour in children and adolescents are benign.[5] As imaging findings and fine needle aspiration do not distinguish benign from malignant phyllodes tumour, core needle biopsy is essential.[4,5] Wide local excision with negative margins is recommended to minimise local recurrence.[3]

Pseudoangiomatous Stromal Hyperplasia

Pseudoangiomatous stromal hyperplasia is a rare benign localised stromal overgrowth, possibly mediated by hormones.[3,5] It is usually an incidental finding on histological analysis but can also present as a lump with variable sonographic appearance, sometimes seen as an oval circumscribed hypoechoic or heterogeneous mass (Figure 12c).[3,4,8] Surgery is indicated for symptomatic or enlarging masses, but recurrence may occur.[3]

Papillomatous Lesions

Intraductal papilloma arises from benign epithelial proliferation of central mammary duct, projecting into and possibly obstructing the duct, causing nipple discharge at presentation.[1] It is uncommon in children and adolescents, and rare in boys.[5,8] Typically solitary, it may appear as a well-defined solid nodule within a dilated duct on US (Figure 13),[3] often with a vascular feeding pedicle seen on colour Doppler.[11]

Juvenile papillomatosis occurs when there is localised proliferation with multiple papillomas in the peripheral ducts. Unlike intraductal papilloma, there is no fibrovascular core.[3] Ill-defined hypoechoic masses are seen on US; the presence of multiple peripheral cystic spaces with a 'Swiss cheese' appearance hints at the diagnosis.[4] On MRI, they are T1 hypointense showing avid enhancement, with internal T2-hyperintense cystic spaces (Figure 14).[1,3] Although juvenile papillomatosis is benign, up to 80.4% of patients have coexisting atypical or neoplastic lesions, and it is a marker of familial breast cancer.[3,11] This signifies the importance of close follow-up screening given the increased lifetime breast cancer risk.[1,3-5]

Primary Breast Cancer

Primary breast cancer is rare in paediatrics and young adults. It accounts for approximately 0.1 case per million in females younger than 20 years old, and even less in males.[1] Approximately half of the patients under 30 years old with breast cancer harbour a germline mutation, such as *BRCA1/2*, *TP53* for Li-Fraumeni syndrome, and *PTEN* for Cowden syndrome.[12] Hence, the diagnosis of breast cancer in young patients should prompt genetic testing and counselling.[1,3] Individuals over the age of 25 years from a family with known *BRCA1/2* mutation carriers should undergo genetic testing. All females with a lifetime breast cancer risk of over 20% are recommended to begin undergoing annual screening MRIs from the age of 25 years with additional annual mammography from the age of 30 years.[13]

In 2020, the International Guideline Harmonization Group recommends breast cancer screening in females with a history of chest radiotherapy with radiation

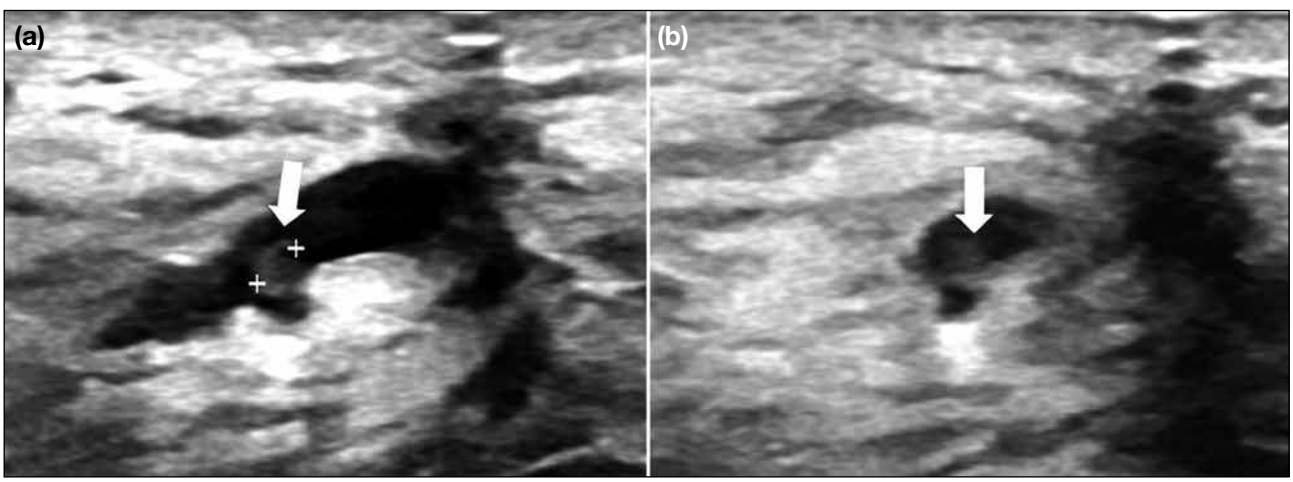

Figure 13. A 25-year-old female presented with left nipple discharge. (a) Transverse plane. (b) Longitudinal plane. Ultrasound shows a dilated central mammary duct (arrows) in the left breast periareolar region at 4 o'clock position associated with intraductal soft tissue nodule. Subsequent biopsy confirmed intraductal papilloma.

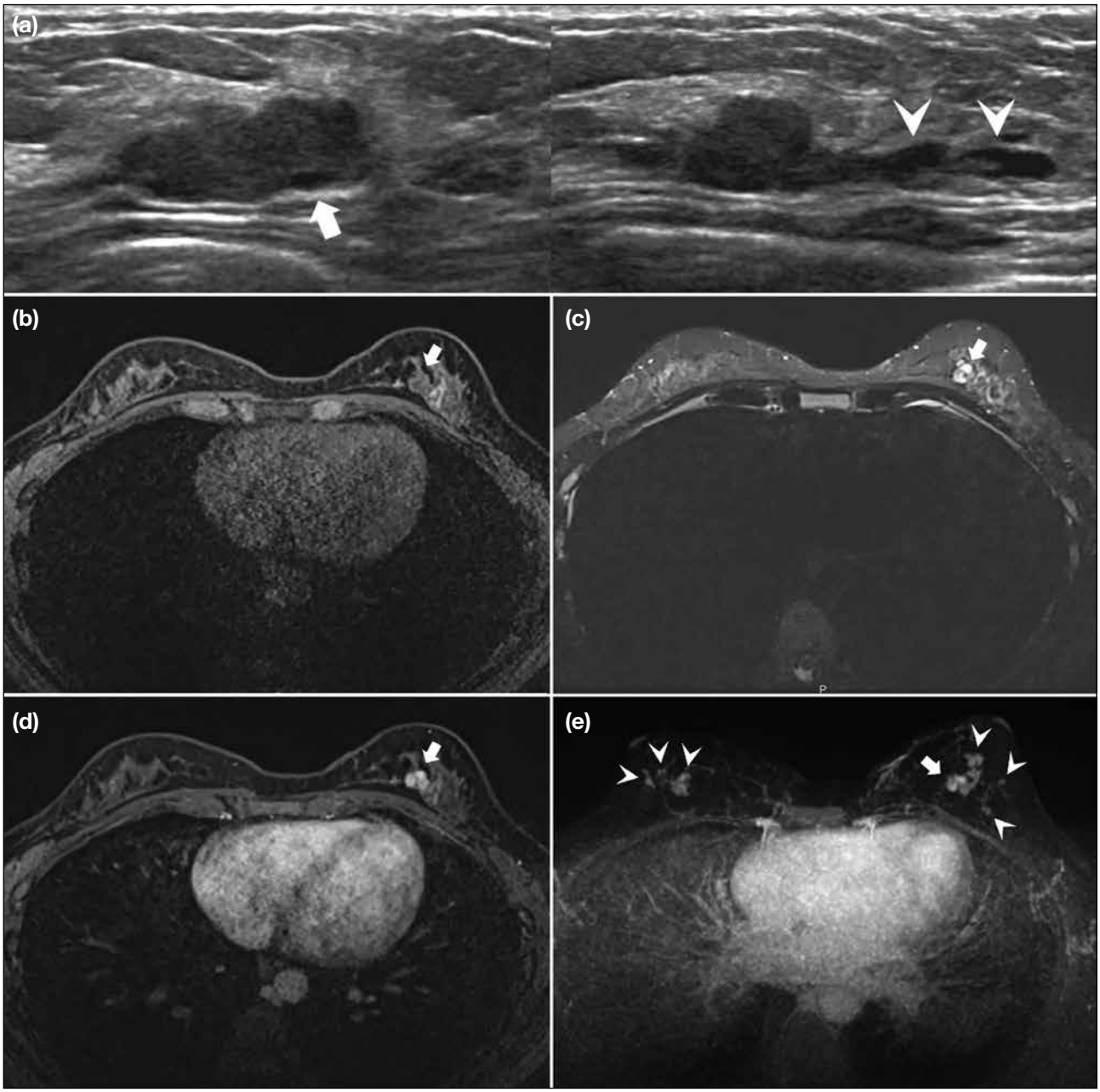

Figure 14. A 22-year-old female with biopsy-proven papillomatosis involving both breasts. (a) On ultrasound, the largest lesion in the left breast lower inner quadrant 2 cm from the nipple is shown to be a lobulated mass with a cystic component (arrow) and an associated dilated duct (arrowheads). Transverse plane (left) and longitudinal plane (right). (b-e) Magnetic resonance imaging shows the same lesion (arrows) to be T1-hypointense with avid contrast enhancement (d) and T2-hyperintense (c). A maximum intensity projection of the post-contrast study with subtraction (e) shows multiple avidly enhancing lesions in both breasts (arrowheads), in keeping with the diagnosis of juvenile papillomatosis.

dose of over 10 Gy, or previous upper abdominal radiotherapy, given the increased risk for breast cancer.[14] They include childhood cancer survivors such as those with supradiaphragmatic Hodgkin lymphoma who underwent chest irradiation, and haematopoietic cell transplant recipients who had total body irradiation. The elevated risk begins 8 years after treatment and remains increased beyond 40 years.[14] These cancer survivors who develop breast cancer after radiotherapy are reported to have higher mortalities than women with de novo breast cancer in the general population.[14] The National Comprehensive Cancer Network Clinical Guidelines

suggest that annual breast MRI and mammography should begin 10 years after treatment, but not before age 25 years and 30 years, respectively, while the Children's Oncology Group Guidelines (2018 version 5) recommend annual mammography and breast MRI to commence 8 years after treatment or at 25 years of age, whichever is later.[14]

Radiological features considered suspicious in paediatrics are no different from adults. On US, concerning features include spiculated margins, microlobulation, marked hypoechogenicity, and not being parallel to the chest wall (Figure 15). On mammography, an irregular, high-density mass with spiculated or indistinct borders; and microcalcifications with fine pleomorphic, linear, or linear branching morphology; and linear or segmental distribution are worrisome for malignancy (Figure 16). Suspicious MRI findings include an irregular mass with spiculated margins and heterogeneous enhancement; or clumped, heterogeneous, or homogeneous non-mass enhancement with linear or segmental distribution; and plateau or washout enhancement kinetics. However, there is overlap of enhancement kinetics between benign and malignant lesions, and persistent enhancement cannot exclude malignancy[15] (Figure 17).

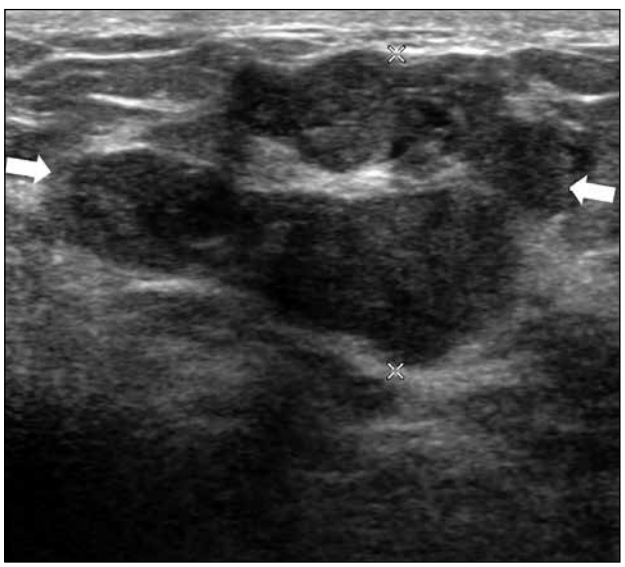

Figure 15. A 26-year-old female presented with a right breast mass. Ultrasound shows two closely related microlobulated hypoechoic lesions at 8 o'clock position (arrows). Core biopsy showed atypical ductal hyperplasia. On surgical excision, the histological diagnosis was low-grade intraductal carcinoma arising in a fibroadenoma. In view of this early-onset breast cancer, genetic testing was performed and found the pathogenic *PTEN* variant, consistent with Cowden syndrome.

Other Breast Malignancies

Breast metastases are more common than primary breast malignancies in paediatric patients, most frequently from rhabdomyosarcoma (Figure 18), followed by neuroblastoma, haematological malignancies including lymphoma and leukaemia, and Ewing sarcoma.[1,3,4] Breast metastases are usually large and solitary with variable US features, which can be irregular or lobulated, heterogeneous, and hypoechoic with hyperechoic foci.[1,8] Rhabdomyosarcoma and Ewing sarcoma can also involve the breast directly as a primary chest wall malignancy, where evaluation of disease extent with cross-sectional imaging is often helpful.[1,3] Lymphoma, most commonly non–Hodgkin lymphoma, can affect the breast and ipsilateral axillary lymph nodes primarily, but is exceedingly rare due to the lack of lymphoid tissue in the breast.[3]

Next Step of Management: When to Biopsy

According to the ACR Appropriateness Criteria,[2] US is the most appropriate radiological procedure for initial evaluation of palpable breast masses in females under

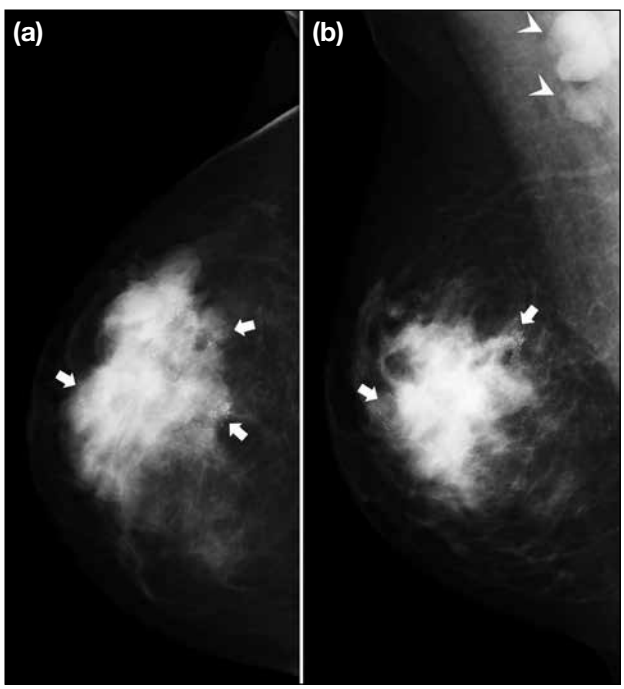

Figure 16. A 21-year-old female presented with a highly suspicious right breast mass. Mammography with craniocaudal (a) and mediolateral oblique views (b) show an irregular high-density mass in the upper outer quadrant, associated with fine pleomorphic microcalcifications (arrows). Ipsilateral axillary lymphadenopathy was present. The biopsy and surgical specimens yielded invasive ductal carcinoma with ipsilateral axillary nodal metastasis (arrowheads in [b]).

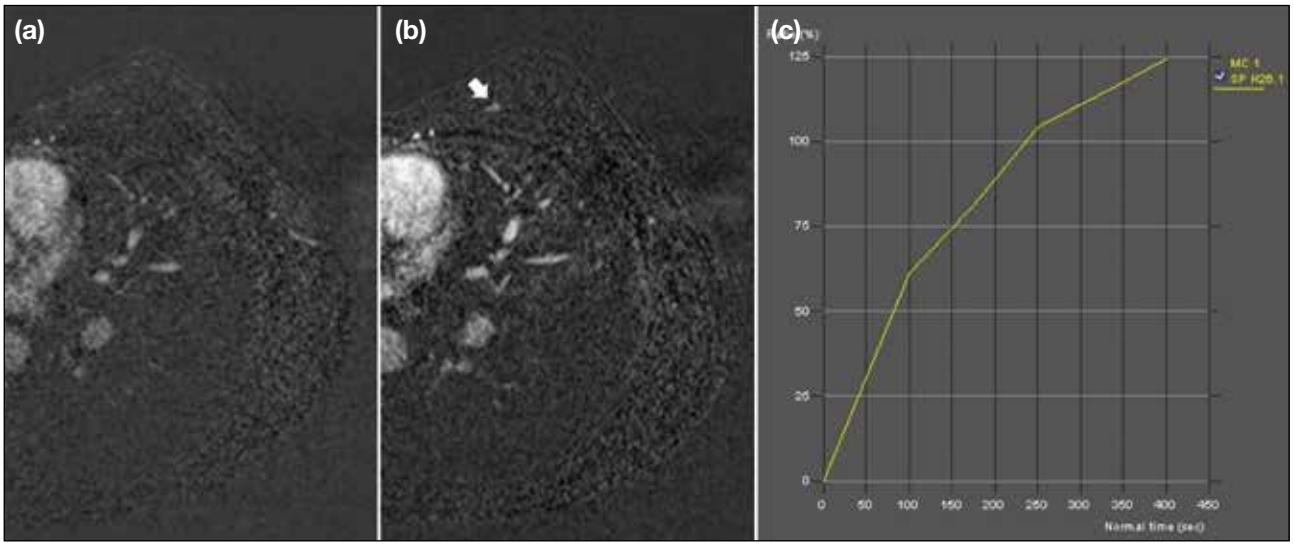

Figure 17. A 28-year-old female with known Li-Fraumeni syndrome and a family history of breast cancer. She had a history of left ovarian teratoma and right primary ovarian neuroectodermal tumour treated with salpingo-oophorectomy at 12 years and 13 years of age, respectively. A germline *TP53* gene mutation was detected; therefore, she underwent magnetic resonance imaging (MRI) screening for breast cancer (a). A T1-weighted post-contrast MRI with subtraction shows linear non-mass enhancement in the left breast 11 o'clock position (arrow) which demonstrated a type I enhancement curve, new since her prior MRI 2 years ago (b). There was no mammographic or sonographic correlation. MRI-guided vacuum-assisted biopsy showed atypical glands. Surgical excision was performed and confirmed high-grade ductal carcinoma in situ, indicating that a type I–enhancing kinetic curve does not exclude a malignancy (c).

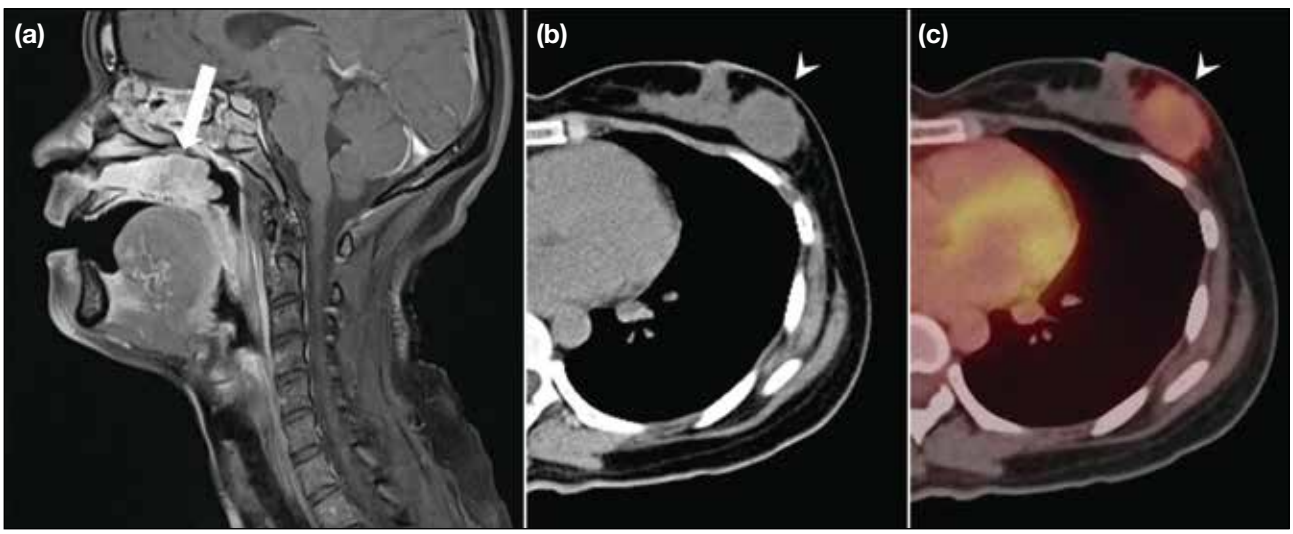

Figure 18. A 29-year-old female with biopsy-proven alveolar rhabdomyosarcoma in the nasopharynx (arrow) as shown on a sagittal post-contrast T1-weighted image (a). (b, c) A staging ^{18}F-fluorodeoxyglucose positron emission tomography–computed tomography shows a hypermetabolic mass at 3 o'clock position in the left breast (arrowheads). Subsequent biopsy and left mastectomy confirmed a rhabdomyosarcoma metastasis in the left breast.

30 years of age. Lesions with benign US features can be followed up clinically. Sonographic features of benign breast lesions include circumscribed margins, orientation parallel to the skin, and less than three gentle smooth lobulations. Short interval follow-up is recommended for probably benign lesions.[2]

Developing breast buds in paediatric patients are vulnerable to injury from biopsy, with potential long-term consequences including permanent disfiguration. Therefore, image-guided biopsy should be carefully considered and discussed. Biopsy should be reserved for probably benign masses smaller than 4 cm showing

atypical US features or rapid enlargement, probably benign masses that are larger than 4 cm, or masses that demonstrate malignant features on US.[1] In high-risk patients with known genetic mutations, prior irradiation, or extramammary malignancies presenting with an enlarging breast mass, biopsy should be considered even if the US findings appear benign.[1,3] Core biopsy is preferred over fine needle aspiration due to higher sensitivity, specificity, and accuracy in histological grading, while tumour receptor status can also be tested.[2] Surgical excision may be indicated for rapidly enlarging or symptomatic breast masses even if they show benign radiological features or biopsy results, as phyllodes tumours cannot be excluded.[1]

CONCLUSION

The majority of breast lesions in females under 30 years of age are benign, but malignancies do occur. Radiologists must be familiar with the diagnostic approach and able to identify lesions suitable for follow-up to minimise unnecessary intervention. Prior to biopsy, the potential long-term consequences on breast development in young patients must be considered. When early-onset breast cancer is suspected or diagnosed, it is important not only to review the patient's medical history but also to explore possible hereditary predispositions.

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