12 year old male presenting with a palpable breast mass behind the left nipple that has been present for 2 months
Focused patient history and workup

• GEJ is a 12 year old male with a palpable left breast mass x 2 months. He also complains of pain at the site of the mass. Physical exam demonstrates a soft, palpable periareolar lump without overlying skin change. No personal history of endocrinopathies, biliary or hepatic disease, renal disease, or Klinefelter syndrome. No significant family history of breast cancer.
Imaging studies obtained

- Focused L breast ultrasound

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**Variant 1:** Male patient of any age with symptoms of gynecomastia and physical examination consistent with gynecomastia or pseudogynecomastia. Initial imaging.

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<thead>
<tr>
<th>Procedure</th>
<th>Appropriateness Category</th>
<th>Relative Radiation Level</th>
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<tbody>
<tr>
<td>Mammography diagnostic</td>
<td>Usually Not Appropriate</td>
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<tr>
<td>Digital breast tomosynthesis diagnostic</td>
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**Variant 2:** Male younger than 25 years of age with indeterminate palpable breast mass. Initial imaging.

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Left breast targeted ultrasound

Findings?
Targeted ultrasound demonstrated a mass of glandular tissue echogenicity in the left breast retroareolar anterior depth with the appearance of gynecomastia.

BI-RADS Category 2 Benign
Companion case 12 yo male unilateral left breast swelling

Right breast is normal

Left breast has mixed echogenicity retroareolar parenchyma
Patient treatment or outcome

- Retroareolar flame-shaped glandular tissue consistent with gynecomastia
- No atypical features
- Patient was reassured regarding benign etiology, prevalence among age population, and clinical follow-up was recommended.
Discussion: Gynecomastia

- Gynecomastia is proliferation of glandular breast tissue in males without progesterone-mediated terminal duct lobular unit development\textsuperscript{1-3}
  - Centrally located, bilateral/symmetrical, soft to palpation
  - Appears as flame-shaped mass or ridge in the periareolar region with no secondary features on imaging
- Typically occurs at three stages of life in males: Neonatal, pubertal, older age\textsuperscript{1-4}
  - Uncommon in prepubertal boys
Discussion: Gynecomastia

Differential diagnosis:1-5

- Mastitis
- Pseudogynecomastia
- Breast carcinoma / tumors (risk factors are Klinefelter syndrome, gonadal failure, obesity, radiation exposure, and positive family history of BRCA2 gene mutations)
- Galactocele
- Lipomas, hemangiomas, hematomas, neurofibromas, lymphangiomas, dermoid cysts
Discussion: Gynecomastia in adolescence

• Glandular tissue development caused by increase in estrogen relative to testosterone during early puberty\textsuperscript{1,5}
• Occurs in up to 60% of males during puberty\textsuperscript{1-3}
• Onset at 10 to 14 years of age or Tanner Stage 3 or 4\textsuperscript{1-6}
• Should resolve within 6 months to 2 years after onset\textsuperscript{5,6}
  • Persists beyond age 17 in up to 20% of males
• Other etiologies for gynecomastia in the adolescent:\textsuperscript{7-8}
  • Medications: antiandrogens, drugs of abuse, some antibiotics, exogeneous hormones, psychoactive drugs, metoclopramide
  • Adrenal and testicular cancers
  • Klinefelter syndrome
  • Thyrotoxicosis
  • Malnutrition
  • Primary hypogonadism
  • Congenital adrenal hyperplasia
  • Androgen sensitivity
Synopsis Take Homes: Gynecomastia in adolescence

- Occurs in up to 60% of males during puberty
- Onset at 10-14 years of age
- Should resolve within 6 months to 2 years after onset
- Other causes include medications: antiandrogens, and exogenous hormones, drugs of abuse, some antibiotics, psychoactive drugs, metoclopramide; Klinefelters; thyroid, adrenal, gonadal diseases
References


