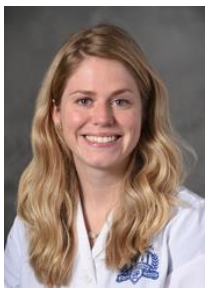
Findings of Breast Ultrasound in Pediatric Patients Age 9-18 and the Need for Well-Known Guidelines for Subsequent Follow-up.



Courtney Cave M.D., Elizabeth Dobben M.D., Kelli Rosen D.O., Jessica Leschied M.D., Zeynep Yilmaz-Saab M.D.- Henry Ford Hospital

Introduction

Pediatric breast diseases are uncommon and primary breast malignancies are extremely rare in this population. Therefore, the approach to both evaluate and manage pediatric breast lesions differs from adults. Unlike adults, ultrasound is the primary imaging modality used to evaluate pediatric patients with palpable breast abnormalities, and Bi-RADS criteria has not been validated in the pediatric population. Benign etiologies, most commonly a fibroadenoma, represent a large majority of solid breast masses identified with ultrasound in the pediatric population. Previous research has shown that up to 81% of interventions on pediatric breast masses were unnecessary. There are published guidelines for following these lesions in the pediatric radiology literature, however they are not widely disseminated and follow up of these lesions is frequently variable.

Methods

Following IRB approval, patients were identified by retrospective query of the electronic medical record for patients under the age of 18 receiving a breast ultrasound within Henry Ford Health System between 2017-2020. This yielded 232 patients ranging in age from 9 to 18 years. Of this sample, 109 patients were identified as having ultrasound findings most consistent with a fibroadenoma. The follow-up for these patients was then categorized into clinical follow-up, ultrasound follow-up, core biopsy, or surgical excision. Patients were further stratified by size of the mass.

Results

Of the 109 patients included in the study, 21 underwent imaging follow up at a 6-12 month interval (19.4%). 42 received core biopsy (38.5%) and 20 underwent excisional biopsy (18.3%). 6 had clinical follow up without either imaging or biopsy (5.5%). The remainder of the patients were lost to follow up (18.3%).

Conclusion

This data demonstrates variable follow up for pediatric breast masses within the Henry Ford Health System. While multiple factors likely influence the decision to biopsy or surgically excise a mass, previous literature shows that follow up imaging is a safe, non-invasive management technique for lesions with specific ultrasound characteristics. Despite this, only 19.4% of the pediatric breast masses in this study were managed with follow up imaging. Better familiarity with the published guidelines among interpreting radiologists may help to avoid unnecessary procedures for young patients.

References

Sanders LM, Sharma P, El Madany M, King AB, Goodman KS and Sanders AE. Clinical breast concerns in low-risk pediatric patients: practice review with proposed recommendations. *Pediatr Radiol* (2018) 48:186-195.

Westfal, ML, Perez, NP, Hung, YC, Chang, DC, and Kelleher, CM. Pathologic discordance to clinical management decisions suggests overtreatment in pediatric benign breast disease. *Breast Cancer Res Treat.* 2019 Jul; 176(1): 101-108.

Zmora, O, Klin, B, Iacob, C, Meital, A, Mendlovic, S, and Karni, Ti. Characterizing excised breast masses in children and adolescents- Can a more aggressive pathology be predicted?. *Journal of Pediatric Surgery.* 2020 October; 55(10): 2197-2200.