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Can a hyperechogenic breast lesion be malignant?

Eleonora Horvath, Eliette Castillo, Flavia Pizzolon,
 Claudio Silva, Marcela Gallegos, Miguel Angel Pinochet,
 Cecilia Galleguillos, Marcela Uchida, Paulina Gonzalez.

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Abstract

Purpose: Hyperechogenic breast lesions have been described as pa 0d benign and are rarely biopsied. The aim of this work was to evaluate the frequency of malignant hyperechogenic breast lesions, describe their imaging findings and histopathological characteristics.

Methods and materials: IRB approved, retrospective, descriptive case series. Biopsied hyperechogenic lesions were selected from a database of 3.394 consecutive US-guided breast Core biopsies (1,020 malignant, 299 high-risk and 2,075 benign lesions) performed between 2006 and 2016. Any lesion that presented greater echogenicity than subcutaneous cellular tissue of more than 90% of its volume, was considered hyperechogenic. Demographical data, US and histopathological characteristics were recorded.

Results: In total 27 (1,08%) lesions biopsied were hyperechogenic: 21 (57%) of them had benign results.

Sixteen patients (mean age: 52 years; range: 26-80) had hyperechogenic cancer, representing 1,5% (16/1,020) of all malignancies: 1 CDIS and 15 invasive carcinomas (81% ductal and 19% lobular histology). Mean size = 2 cm, range: 7- 30 mm. All of them exhibited a small central hypoechoic foci and were partially or completely surrounded by fatty tissue. Shape, margins, orientation and vascular architecture were highly suggestive of malignancy on US, mammogram and MARI (features BI-RADS 4 and 5). In histopathological exam these cancer\$ were surrounded by adipose tissue (not by fibroglandular tissue); also, they presented a hypocellular collagenous center and were hypercellular on its periphery, intermixing with fatty tissue, fibrous tracts and collagen.

Conclusion: Hyperechogenic cancers are very rare (less than 2% of breast cancers), but it is important to recognize them to avoid misdiagnosis.