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Computed tomography in the locoregional staging of breast cancer: interobserver agreement and comparison with conventional imaging

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Objective: To compare the findings of chest computed tomography (CT) for locoregional staging in breast cancer patients with those of other imaging modalities (mammography, ultrasound, and breast magnetic resonance imaging) and with the final histopathological results (gold standard). **Methods:** This was a retrospective, single-center study, including 146 patients with breast carcinoma who underwent contrast-enhanced chest CT for staging. A targeted assessment of the breast was performed on the CT images by four radiologists with different areas of expertise (two breast radiologists, one thoracic radiologist, and one oncologic radiologist), followed by a consensus evaluation. Accuracy (Ac) and the Kappa coefficient (k) were used to assess interobserver agreement and agreement between the CT consensus evaluation and other imaging findings and histopathology. **Results:** The mean patient age was 52 (range 30–85) years. Most tumors were invasive carcinomas of no special type (78.8%) and luminal subtype (76.7%). Dense breasts were observed in 65.1% of patients. The primary tumor was identified on CT in 99.3% of cases. Interobserver agreement ranged from moderate to substantial (k: 0.4–0.7). In the consensus evaluation, 79.5% of lesions were nodular, 13.0% non-nodular enhancements, and 6.8% both (Ac: 86.8%; k: 0.6). Multifocality or multicentricity was identified in 28.8% (Ac: 81.9%; k: 0.6). Signs of skin (6.1%), nipple (4.8%), and pectoral muscle involvement (4.1%) were also observed with reasonable accuracy. Tumor staging was consistent (T1–T4; Ac: 70.5%; k: 0.5). Suspicious contralateral lesions (3.4%) and axillary lymph nodes (44.5%; Ac: 89.0%; k: 0.8) were also detected. **Conclusion:** Chest CT with targeted breast evaluation demonstrated good interobserver agreement and concordance with standard imaging, supporting its potential utility for locoregional staging without requiring additional contrast or radiation exposure.

Keywords: breast cancer; neoplasm staging.