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“Examining the necessity of axillary lymph node dissection with lumpectomy in biopsy-proven high-grade DCIS”

BACKGROUND: Ductal Carcinoma In-Situ (DCIS) is a non-invasive neoplastic proliferation of breast ductal epithelial cells confined to the ductal-lobular system. Currently, DCIS is classified by nuclear grade (low, intermediate, high) based on nuclear features and necrosis. Untreated DCIS increases a woman’s risk of developing invasive breast cancer in the same breast tenfold. Thus, when found on a breast biopsy, DCIS warrants further surgical resection and margin examination via lumpectomy (partial mastectomy). Despite High-Grade DCIS carrying a higher risk for finding associated invasive carcinoma upon resection, it remains controversial whether sentinel lymph-node dissection is indicated during initial breast resection.

OBJECTIVES: The purpose of this study is to investigate the necessity of performing axillary lymph node dissections with lumpectomy (partial mastectomy) in patients with biopsy-proven high-grade Ductal Cell In-Situ (DCIS).

METHODS: Medical records were reviewed of patients who underwent partial mastectomy with biopsy-proven high-grade DCIS (with or without sentinel lymph node biopsy) during the time period of August 2017- April 2024. Cases of biopsy-proven Invasive Ductal Carcinoma with associated DCIS (IDC + DCIS) were used as controls. The collected patient data was stored under a secure study ID number. A chi-squared analysis was conducted with a significance level of $\alpha = 0.05$.

RESULTS: A total of 77 DCIS cases were reviewed: 9 low-grade (LG), 31 intermediate-grade (IG), and 37 high-grade (HG). The control group included 74 cases of IDC + DCIS. Despite sentinel lymph node biopsies being performed in 75.7% of HG-DCIS group. There was no significant difference in metastasis compared to IG-DCIS group (5.4% vs 3.2%, $p>0.05$). However, HG-DCIS group showed a significantly lower rate of metastatic lymph nodes than the control group (5.4% vs. 34.5%, $p<0.01$). No patients within the LG-DCIS group had lymph node metastasis, although only 4 cases of lymph-node biopsy were recorded. ER positivity was significantly lower in HG-DCIS group compared to LG- and IG-DCIS groups ($p<0.01$), but was similar to the control group ($p>0.05$). Both patients with metastatic cancer in HG-DCIS group had significant family histories of breast cancer.

CONCLUSIONS: Sentinel lymph node biopsy was frequently performed in patients with HG-DCIS, although the frequency of sentinel lymph node metastasis was low ($p<0.01$). These findings suggest that sentinel lymph node biopsy may not be indicated for all patients with HG-DCIS. However, factors such as abnormal breast imaging and family history of breast cancer should be considered.