

Patient Safety Bulletin

DCIS - how sinister it could be

What happened and what were the issues/implications?

A patient's breast lump was biopsied and a diagnosis of ductal carcinoma in situ (DCIS) was made. Subsequently, a sentinel lymph node biopsy was performed for a suspicious lymph node and showed no carcinomatous spread. A simple mastectomy was scheduled based on the biopsy results. On the day of surgery, a frozen section was sent from an axillary lymph node and it was also negative for carcinomatous spread. Therefore, a simple mastectomy without axillary dissection was performed.

When I received the specimen and after slicing the specimen to allow adequate fixation, I examined each slice and found three suspicious lesions in different areas. I sampled the lesions extensively to rule out any foci of early invasion. On examination of the most outer border of the specimen, two lymph nodes were identified and one of them was grossly suspicious for metastatic carcinoma. Both lymph nodes were bisected and embedded in whole for microscopic examination.

On microscopic examination, two out of the three lesions were diagnosed as invasive ductal carcinoma arising in a background of DCIS. The third lesion was diagnosed as DCIS with no evidence of invasion. One of the two lymph nodes showed metastatic mammary carcinoma. Thus, the patient was diagnosed with a multifocal invasive ductal carcinoma with spread to adjacent lymph nodes rather than just DCIS.

What actions were taken?

As there was a huge discrepancy between the biopsy and resection results, we first reviewed the previous breast and axillary lymph node biopsies and the frozen section. No evidence of invasive or metastatic carcinoma was seen. The supervising consultant notified the surgeon immediately of the results and the patient was put on a course of chemotherapy and scheduled for axillary dissection later on.

What did you learn?

I learnt that it is not uncommon for a biopsy with DCIS to miss an invasive carcinoma. Sentinel lymph node biopsies can be falsely negative because of a technical error related to the procedure, suboptimal laboratory preparation or misinterpretation under microscopic examination.

Thin slicing of the specimen is key to ensuring tiny lesions or lymph nodes are not missed.

A specimen labelled as 'simple mastectomy', i.e. the surgeon did not remove the axilla, should be examined for axillary lymph nodes that occasionally can be found in the most outer edge of the specimen.

As per College of American Pathologists' (CAP) guidelines, specimens in DCIS must be examined entirely if possible. When this is not possible in a large mastectomy specimen and when the lesion can be identified grossly, at least the entire region of the targeted lesion should be examined microscopically.

How was the learning shared?

I mentioned the findings to my fellow trainees and discussed the different modalities of treatment following DCIS. I also highlighted the value of working in a multidisciplinary team (MDT), since negative Tru-cut lymph node biopsies or frozen sections in a suspicious lymph node clinically or radiologically do not always exclude metastasis and an excision should be considered in certain scenarios. The case was discussed in the MDT meeting.

We use audits to check how frequently a sentinel lymph node would miss a metastatic carcinoma confirmed by excision, and to identify the causes of the discrepancy. These findings are presented in the departmental meeting.