

Meeting abstract

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Anatomical association of fluid yielding ducts with location of the breast cancer affected segment in screen detected and symptomatic breast cancer

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Introduction

The concept of the intraductal approach to evaluating the breast microenvironment assumes direct access to the breast cancer containing duct. Previous studies on duct anatomy infusing a dye or contrast found fluid-yielding ducts to be associated with the cancer containing duct in approximately 50% of fluid-yielding breasts with cancer. A concordant anatomical relationship between accessible ductal systems and the cancer-affected lobe is essential if cytology or other cell markers are to be successfully identified as indicators of cancer or of early cancerous change. The concordant relationship is less important if field change effects are considered to predictors of malignant change. The aim of this study was to determine how often duct lavage effluent drains the breast cancer affected segment.

Methods

40 patients undergoing therapeutic mastectomy for breast cancer were studied (31 symptomatic and 9 screen-detected). Following successful ductal lavage, the mastectomy specimens were infused ex-vivo with coloured polyurethane elastomer resin (VasQtec, Zurich). The extent of specimen infusion with resin and the direct anatomical relationship to the cancer affected segment were recorded.

Results

The median number of successful ducts cannulated per cancer affected breast was 2 (range 1–3). 23/40 (58%) therapeutic mastectomy specimens showed successful tracing of the cancer-affected duct system. 5/38 (13%) resin infusions traced duct systems unaffected by cancer and the remaining 12/40 (30%) infusions extravasated. Of the 23 successful tracings, 16 mastectomy specimens contained symptomatic cancer and the remaining 7 were screen-detected nonpalpable cancers. All 12 extravasated infusions occurred in specimens with symptomatic cancer. 7/23 successful infusions showed abnormal cytology concordant with the cancer affected segment.

Conclusion

Breast duct systems of both symptomatic and non-palpable cancer were equally accessed at successful ductal lavage. The duct system of the cancer affected segment was concordant to a fluid yielding duct patent in 58 percent of cases, a similar finding to previous studies. Mastectomy specimens containing clinically impalpable disease were more likely to remain patent than those with palpable lesions, implying distal duct collapse following duct obstruction by larger tumours impedes access to the cancer affected lobe. Future studies that depend on direct access to the cancer affected segment (eg cytology) are likely to be limited by duct accessibility while studies that

demonstrate field change effects (eg protein studies) are less dependent on duct patency.

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