AXILLARY REVERSE MAPPING IN BREAST CANCER: A SYSTEMATIC REVIEW

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Background: Axillary reverse mapping (ARM) assesses the lymphatic drainage of the arm simultaneously with that of the breast to enable preservation of the arm lymphatics during axillary surgery for breast cancer. It has been suggested that the preservation of the arm lymphatics and their draining lymph nodes may prevent lymphoedema, but that this may compromise the oncological treatment. Our aim was to systematically review the oncological and lymphoedema related outcomes of ARM in breast cancer.

Materials And Methods: PubMed, Embase and the Cochrane Library were systematically searched in January 2015 for studies that addressed the use of ARM during axillary surgery in breast cancer. Studies were deemed eligible if they performed ARM during sentinel node biopsy (SNB) or axillary node clearance (ANC) for breast cancer in prospective studies of >50 patients, whilst conducting assessment of lymphoedema and oncological outcomes and a minimum of 6 months follow-up.

Results: A total of 7 studies reported data on ARM in 904 patients undergoing axillary surgery for breast cancer. The lymphoedema incidence ranged between 0% and 5.7% during ARM assisted SNB and 4% to 14% during ARM lymphatic preservation at ANC. Crossover nodes were identified in between 0% and 9.6% of patients and metastases were identified in between 0% to 20% of these patients. ARM nodes could not be preserved due to their close proximity to the sentinel node or clinically suspicious features in between 11.1% to 17.5% of patients with ARM nodes identified and metastases were consequently found in 0% to 18.5% of these patients.

Conclusions: ARM is able to achieve low lymphoedema rates but the risk of metastases in crossover nodes and clinically suspicious ARM nodes or those in close proximity to an involved sentinel node warrants their excision for oncological safety. Randomised controlled trials with adequate follow-up are needed to formally evaluate these outcomes.