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reducing the ecological footprint of surgical procedures and paving the way for more sustainable healthcare systems.

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P338
Efficacy of the Savi Scout System in Wide Local Excision for Breast Cancer: A Single-Institution Study at King's College Hospital

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Goals: This study aimed to evaluate the efficacy of the Savi Scout system in wide local excisions (WLEs) for breast cancer by assessing positive margin rates, re-excision rates, and factors influencing surgical outcomes. A secondary objective was to investigate the impact of specimen-to-tumour size ratios on margin positivity.

Methods: A retrospective analysis was conducted on 98 patients (100 lesions) who underwent WLE using the Savi Scout system at King's College Hospital between June 2022 and August 2024. Patients with incomplete records, alternative localization techniques, or near-complete tumour responses were excluded. Data, including demographics, tumour characteristics, surgical details, and histopathological reports, were manually extracted from electronic medical records. Positive margins were defined as tumour cells at the inked margin or within 2 mm for ductal carcinoma in situ (DCIS) and 1 mm for invasive ductal carcinoma (IDC). The primary outcome was the positive margin rate, while secondary outcomes included re-excision rates and resolution methods for positive margins. The relationship between specimen-to-tumour size ratios and margin positivity was also analysed.

Results: The mean age of the cohort was 58.2 years (SD = 10.5), with all patients being female. The lesions included 56 cases of IDC + DCIS, 20 DCIS, 18 IDC, and 6 other cancer types. The localization success rate was 100%. The overall positive margin rate was 13%, with a corresponding re-excision rate of 13%. Among the 13 positive margin cases, 11 underwent re-excision, 1 underwent mastectomy, and 1 required both re-excision and mastectomy. The average tumour size was 23.5 mm, and the average specimen volume was 132,001 mm³. Positive margins were inversely correlated with specimen-to-tumour size ratios, with 92.3% of positive margins occurring when the ratio was ≤3.49. Ratios exceeding 3.50 were associated with no significant margin positivity, except for one outlier.

Table 1.
Demographics Summary.

Category	Details
Total Cases	98
Average Age (years)	58.2 (SD = 10.5)
%Female	100
Patients with 1 Lesion	96
Patients with 2 Lesions	2
Total Lesions	100
Specimen with Positive Margins	13
Specimen with 1 Positive Margin	11
Specimen with 2 Positive Margins	2
Total number of Positive Margins	15

Table 2.
Surgical Outcomes.

	All Lesions (n = 100)	IDC +DCIS (n = 56)	DCIS (n = 20)	IDC (n = 18)
Localisation Rate (%)	100	100	100	100
Positive Margin Rate (%)	13.0	17.9	10.0	5.6
Total Number of Positive Margins	15	12	2	1
Re-excision Rate (%)	13.0	17.9	10.0	5.6
Average Tumour Size (mm)	23.5	22.4	27.3	22.8
Average Specimen Volume (mm ³)	132001	137616	128087	130479

Conclusions: The Savi Scout system demonstrated high localization accuracy and acceptable positive margin rates in WLE for breast cancer. The findings emphasize the importance of achieving optimal specimen-to-tumour size ratios to minimize positive margins and improve surgical outcomes. This study supports the utility of the Savi Scout system in enhancing surgical precision and patient care.

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The Utility of the Magnifying Glass Incision in Nipple-Sparing Mastectomy (NSM) and Deep Inferior Epigastric Artery Perforator (DIEP) Flap Breast Reconstruction

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Goals: In DIEP flap breast reconstruction, the internal thoracic vessels are currently prioritized as recipient vessels at our institution. The reasons include their larger diameter compared to thoracodorsal vessels, the allowance for shorter perforator vessel length, and the flexibility to switch to a latissimus dorsi flap in case of difficulties with DIEP flap. Previously, we utilized both periareolar and lateral breast incisions during NSM. However, to use the internal thoracic vessels, we extended the periareolar incision by 3–5 cm directly over these vessels, resulting in what we call the "Magnifying Glass incision." Currently, we have adopted the principle of completing the procedure using only this incision. This study evaluates the utility of the Magnifying Glass incision.

Methods: We analyzed 15 breast cancer patients who underwent NSM and immediate DIEP flap breast reconstruction.

Results: The median age was 46 years (range: 36–64 years). Clinical staging included 2 cases of Stage 0, 6 cases of Stage I, 3 cases each of Stage IIA and IIB, and 1 case of Stage IIIA. The median operative time was 2 hours and 23 minutes (range: 1 hour 29 minutes to 2 hours 58 minutes). Blood loss was minimal in all cases. The median tumor size was 18 cm (range: 12–25 cm), and the median tumor weight was 415 g (range: 100–1125 g). Complications included a 5 mm skin burn at the flap in one case. Postoperative pain at the Magnifying Glass incision site was minimal, with Face Rating Scale (FRS) scores of 0 in 10 cases and 1 in 5 cases.

Using periareolar and lateral breast incisions in NSM often disrupts blood flow from the nipple and lateral breast, potentially causing damage to the lateral breast flap. Additionally, the pain and cosmetic drawbacks associated with lateral breast incisions have been problematic. In this study, NSM was successfully completed using only the Magnifying Glass incision in all cases, demonstrating superior cosmetic outcomes and minimal pain. Complications were also infrequent. The main challenge was ensuring deep field visualization and adequate lighting during surgery, for which the use of lighted retractors proved highly effective.