

Doi: 10.64860/scalpel260203

Advances in Non-Wire Localisation for Breast-Conserving Surgery: Optimising Surgical Precision, Efficiency and Patient-Centred outcomes.

Authors: Shaima Mughees^{1*}

1: University of Leicester, Leicester, United Kingdom

*Corresponding Author: sm1128@student.le.ac.uk

Background: For decades, wire-guided localisation has been used as the standard surgical technique for identifying non-palpable breast tumours. However, limitations of this technique include scheduling challenges, patient distress, and variable success rates. To address these issues, innovative non-wire localisation techniques, such as radiofrequency, radar, and magnetic seed markers, have been introduced, improving patient experience, clinical accuracy, and surgical outcomes.

Methods: A systematic review of studies from 2018–2025 compared wire-guided and non-wire localisation techniques. Studies included randomised controlled trials, prospective and retrospective observational studies, and meta-analyses. Outcomes evaluated were patient satisfaction, re-excision rates, surgical accuracy, operative performance, and intraoperative workflow efficiency. Data were extracted to identify trends and assess relative performance of individual localisation methods.

Results: Synthesis of multiple studies suggested non-wire techniques consistently reduced re-excision rates, with reports showing 50% reduction compared to wire-guided localisation. Operative times were shorter, and margin clearance improved overall. Patients reported higher satisfaction due to increased comfort and flexible scheduling. Surgeons noted improved intraoperative technique and workflow. Radar and magnetic seed methods were recognised as the most effective approaches.

Conclusions: Non-wire localisation represents a major breakthrough in breast-conserving surgery. These techniques optimise patient outcomes, enhance surgical precision, and provide a safer, more effective method for tumour resection. Empirical evidence suggests radar and magnetic seed localisation outperform wire-guided methods and have the potential to become standard practice.

Wider adoption could promote better outcomes, patient care, and workflow. Future research should focus on financial efficiency, long-term outcomes, and implementation across multidisciplinary breast care protocols.

Doi: 10.64860/scalpel260304

From Palliation to Prevention: Targeting Neurodegeneration Through Lymphatic Supermicrosurgery - Applications, Limitations, and Legal Pitfalls

Authors: Abdul Rhaman Kafagi^{1*}, Jason KF Wong¹

1: University of Manchester, Manchester, United Kingdom

*Corresponding Author:

abdulrhaman.kafagi@student.manchester.ac.uk

Neurodegenerative diseases, including Alzheimer's and Parkinson's, impose a growing global burden, with limited therapies targeting the underlying pathology. Emerging evidence implicates impaired glymphatic-lymphatic clearance of neurotoxic proteins (e.g., amyloid- β , tau, α -synuclein) as a key driver of disease progression.

This review evaluates lymphatic supermicrosurgery - a novel intervention enhancing meningeal and cervical lymphatic drainage - as a therapeutic strategy. Mechanistic studies demonstrate that restoration of lymphatic outflow reduces protein accumulation, attenuates neuroinflammation, and improves cognitive/motor function in preclinical models.

Early clinical evidence demonstrates that cervical lymphatic-venous anastomosis (LVA) improves cognitive function and reduces pathological burden with improvements in neuropsychiatric symptoms. However, translational challenges remain substantial. Murine models poorly replicate human neurolymphatic ageing, particularly regarding glymphatic channel dimensions. Early clinical trials lack sham controls and standardised protocols, with procedural heterogeneity complicating interpretation. Additional limitations include small sample sizes, short follow-up periods, and unvalidated biomarker correlations.

Future research requires multicentre RCTs with comprehensive neuropsychological batteries, advanced imaging, and tracking of long-term outcomes. While promising, widespread adoption

necessitates the resolution of technical uncertainties and ethical considerations for cognitively impaired populations.

Doi: 10.64860/scalpel260205

Improving Induction for Resident Doctors and ACPs in General Surgery: A Quality Improvement Project

Authors: Kiriana Lagden^{1*}

1: The Rotherham NHS Foundation Trust, Rotherham, United Kingdom

*Corresponding Author: kiriana.lagden1@nhs.net

Background: Resident doctors, including foundation, core, and higher surgical trainees, rotate at varying times throughout the year. Although no evidence suggests that resident changeover adversely affects surgical patient safety, the quality of induction can significantly influence clinician preparedness and satisfaction. The Royal College of Surgeons of England has recommended inclusion of educational induction as a means of enhancing surgical training. In response, a quality improvement project was undertaken to optimise the induction process for resident doctors and ACPs within the General Surgery department at The Rotherham NHS Foundation Trust.

Methods: Two PDSA cycles were conducted between October and December 2024. An initial survey assessed perceived preparedness, confidence in performing key clinical tasks, and gathered recommendations for improvement. A comprehensive General Surgery Induction Guide was then developed, reviewed by senior colleagues, and distributed in November 2024. A follow-up survey guided subsequent revisions, with an updated version released in December 2024.

Results: Only 10% of respondents felt adequately prepared by the previous induction, while all agreed that an induction guide would be beneficial. Confidence in general clinical tasks exceeded that in surgery-specific tasks, e.g. 70% of respondents were confident to request bloods vs 10% were confident to book into emergency theatres. Following implementation of the guide, confidence improved across all 20 assessed tasks, particularly in specialty-specific areas. Feedback described the guide as

“excellent and comprehensive” and “a crucial aid for induction”.

Conclusions: Implementation of a structured induction guide substantially enhanced clinician confidence and ongoing review will ensure its continued relevance and alignment with evolving clinical practices.

Doi: 10.64860/scalpel260206

Rehabilitation Strategies and Functional Outcomes After Surgery for Sports-Related Traumatic Injuries: An Evidence-Based Review

Authors: Zainab Y Marafie^{1*}

1: University of Manchester, Manchester, United Kingdom

*Corresponding Author: zymarafie@gmail.com

Background: Sports-related traumatic injuries, such as anterior cruciate ligament (ACL) rupture, rotator cuff tears, and Achilles tendon ruptures, often require surgical intervention followed by structured rehabilitation. Optimizing post-surgical rehabilitation is crucial for restoring strength, mobility, and safe return to pre-injury activity levels. This review combines current evidence on rehabilitation strategies and functional outcomes after surgery for major sports-related injuries.

Methods: A comprehensive PubMed search was conducted using keywords including “sports injury,” “rehabilitation,” “surgery,” “functional outcomes,” and “return to sport.” Systematic reviews, meta-analyses, and clinical guidelines published between 2015 and 2025 were included in this analysis. Studies were appraised for methodological quality and relevance to post-surgical rehabilitation principles and outcome measures.

Results: Evidence supports early, criterion-based rehabilitation emphasising progressive loading, proprioception, and neuromuscular control. The Aspetar Clinical Practice Guidelines for ACL reconstruction recommend individualised, goal-driven protocols and objective criteria for return to sport rather than time-based approaches. Meta-analyses of rotator cuff and Achilles tendon repairs indicate that early mobilization accelerates recovery without compromising repair integrity. Adjunctive therapies, such as blood-flow restriction training,