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

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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.

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

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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