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Background: Surgery to the primary tumour in women with metastatic breast cancer (MBC) has traditionally been reserved for palliative purposes, and European guidelines suggest it should be performed on an individualised basis[1]. A lack of consensus on the effectiveness of a procedure can lead to treatment variation in clinical practice. We examined what proportion of women with MBC aged 50+yrs received surgery to the primary tumour, and explored what patient and clinical characteristics influence receipt of surgery, as part of the National Audit of Breast Cancer in Older Patients (NABCOP).

Methods: Details of the NABCOP are available at www.nabcop.org.uk. Data on women aged 50+yrs newly diagnosed with MBC at diagnosis between January 2014 and December 2018 in England and Wales were obtained from national cancer registry datasets linked to routine hospital episodes. Receipt of surgery up to 3 years from diagnosis was examined using Kaplan Meier estimates, both nationally and between Cancer Alliances. The relationship between patient/tumour factors and time to surgery was analysed using log rank tests and a flexible parametric regression model (FPM).

Results: Between 2014 and 2018, 7316 women aged 50+yrs with MBC at diagnosis were identified. Overall, 18.7% women had surgery to the primary tumour within 1 year from diagnosis. Having surgery at 1 year was more common among younger women (50–59 yrs vs 80+yrs: 29.8% vs 8.6%, adjusted HR 1.79), those with T1/T2 tumours (T1/T2 vs T3/T4: 33.1% vs 20.8%, adjusted HR 1.72), and positive nodal stage (N0 vs N+: 19.3% vs 29.1%, adjusted HR 1.54). Rates of surgery within 1 year from diagnosis reduced over time, from 23.7% in 2014 to 15.7% in 2018, but to a greater degree among women aged 50–69 yrs (34.8% in 2014 to 21.1% in 2018) compared with women aged 70+yrs: 15.6% to 11.5%. Overall rates of surgery varied from 11.6% to 32.2% between the 20 Cancer Alliance/regions across England and Wales.

Conclusions: Almost 20% of women aged 50+yrs with MBC at diagnosis received breast surgery within 1 year from diagnosis, but this varied between regions in England and Wales, and the use of surgery has decreased in recent years. Research is required to understand why treatment variation exists as well as to generate better evidence on the value of surgery in patients with MBC.

No conflict of interest.

Reference

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549 Poster

A review of localization techniques in breast surgery – is wire free the future?

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Background: In the UK the gold standard for localisation of impalpable breast lesions including cancers, is the image guided hook wire localiser and has been since its development in the 1970's. Localisation methods have changed and advanced since this inception. The technique of wire localisation has both advantages and disadvantages. In recent years novel wire free techniques, using probe and marker/seed based systems, (e.g. Magseed®, SCOUT®, and LOCalizer™) have been developed to not only localise impalpable breast lesions but negate the disadvantages of wire localisation. The aim of our review was to compare the variety of techniques used to localise breast lesions from their origins to the most recent advancements.

Material and methods: A comprehensive review of available data in the form of published articles with the related topic using Pubmed, OVID, Cochrane databases, book chapters and information from manufacturer's websites. Key words used for database searches included impalpable breast tumours; localisation techniques; wire free technique; Magseed; SAVI SCOUT and LOCaliser.

This was a narrative review comparing the disadvantages and advantages of each technique, wire based or wire free.

Results: Novel wire free techniques are effective, safe, with non-inferiority and feasibility compared to wire localisation confirmed in multiple studies. Margin re-excision rates, deployment and retrieval rates are also comparable to wire localisation techniques.

Conclusions: The future of localisation of non-palpable breast lesions is heading toward non-wire technology, wire localisation may then be reserved for special cases. It simplifies patient pathways, surgical planning and also decreases patient anxiety.

No conflict of interest.

550 Poster

Nonradioactive surgical guidance with radiofrequency identification technology for locating nonpalpable breast lesions; Initial experiences of the RFID Localizer I Trial

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Background: In breast conserving surgery accurate intraoperative lesion localization is essential for adequate surgical margins while sparing surrounding healthy tissue to achieve optimal cosmesis. Radiofrequency identification (RFID) technology may offer a viable non-radioactive, non-wire alternative.

Purpose: To evaluate the feasibility of RFID surgical guidance for localization of nonpalpable breast cancer.

Methods: The first 50 procedures of the RFID Localizer I trial were evaluated. A RFID LOCalizer™ (Faxitron, Hologic) tag (10.6 × 2 mm) was placed using ultrasound guidance up to 30 days preoperatively. The RFID tag was inserted percutaneously through a small skin incision with a preloaded 12-gauge sterile needle applicator. A two-view mammography was performed to confirm correct position of the RFID tag. At breast conserving surgery the surgeon localized the RFID tag using a handheld reader device. Duration of the placement- and surgical procedure was recorded. Histopathology results were collected to calculate the percentage of radical excisions. This percentage was compared to the NABON standard (min. 90 % radical excisions).

Results: Between April and December 2019, a total of 50 women underwent RFID tag placement in two hospitals. Median time of placement took five minutes (IQR 3–10) from start incision for needle access, to deposition of the marker. Median time between tag placement and surgery was seven days (IQR 4–11). In five patients the placement failed due to dislocation during retraction of the needle. In 46 patients the RFID system was used to guide surgical excision. Retrieval of the lumpectomy specimen took on median time 17 minutes (IQR 12–20), recorded from the moment of incision. Histopathology showed clear resection margins in 43/46 patients (93% | 95% CI 0,98–1,23). Re-excision was indicated in one patient (Invasive lobular carcinoma).

Conclusion: RFID surgical guidance offers non-radioactive non-wire localization of non-palpable breast cancers, first results show an acceptable radical excision rate according to the current NABON standard.

Table 1 Overview of results from 50 RFID tag placement procedures, 46 RFID-guided breast conserving surgery procedures and histopathological results.

Radiology, n (percentage)	Total n = 50
Shortest distance marker-tumor on mammography in mm, median (IQR)	2 (0–5)
Number of days of RFID tag in situ, median (IQR)	7 (4–11)
Duration of placement procedure in minutes, median (IQR)	5 (3–10)
Number of successful placement procedures	44 (88%)
Surgery, n (percentage)	Total n = 46
Identification rate	46 (100%)
Duration of surgery in minutes, median (IQR)	17 (12–20)
Post-operative wound infection	1 (2%)
Pathology, n (percentage)	Total n = 46
Radical excision rate	43 (93%)
Re-excision rate	1 (2%)
RFID marker retrieved	50 (100%)
Dominant tumor size in mm, median	10 (6–14)

No conflict of interest.