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Single incision for oncologic breast conserving surgery and sentinel node biopsy - another de-escalation strategy in breast surgery

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Single incision for oncologic breast conserving surgery and sentinel node biopsy—another de-escalation strategy in breast surgery?

Breast-conserving therapy (BCT) has become the standard of care for the vast majority of patients with early breast cancer [1]. A regular approach are two independent incisions for the breast tumor and the sentinel lymph node (SLN). Despite preserving oncological safety, breast surgery has become progressively less radical in favor of improved cosmetic outcome and minimal functional deficiency over time [2]. Oncoplastic breast conserving surgery (OPS) has been widely promoted to achieve improvements in aesthetic outcome [3, 4].

Recently, minimal access breast surgery (MABS) using a single incision for lumpectomy and SLN retrieval has been promoted by several authors, hereby using a lateral, radial, periareolar, inframammary, and semi-

circular incision [5–9]. For access to the axilla, a prepectoral dissection to the lateral edge of the pectoralis major muscle is performed, hereby, entering the clavipectoral fascia for SLN retrieval. Several authors performed lumpectomy with local remodeling (level I OPS according to Clough's classification [10]) using the lateral, axillary, inframammary, or periareolar approach. Acea-Nebriil and colleagues performed level II OPS, namely reduction mammoplasty (wise pattern), horizontal mammoplasty (batwing) and the round block technique ("Donut" or Binelli) with the intent to minimize local complications as axillary neuralgia and lymphoedema [6]. Success rates varied between 90–100 % for SLN retrieval along with comparable complication and re-op-

eration rates, but yet, with a tendency to a more frequent formation of seroma in the single incision cohort in one study [6]. Moreover, Acea-Nebriil et al. described an improved quality of life and satisfaction using the Breast-Q™ questionnaire along with a lower incidence of axillary neuralgia, less surgical time, and smaller resected tumor volume [6]. Up to this point, patient-reported outcomes and randomized controlled trials (RCT) comparing single-incision vs. two independent incisions are lacking.

To the best of our knowledge, indications for MABS are mostly limited to lateral and central tumors in the current literature (► **Table 1**). However, it remains unclear how to manage tumors farthestmost from the axillary region. The round block tech-

► **Fig. 1** Single-incision approaches for breast conserving therapy and SLN retrieval. **a** 52-year old patient with breast cancer pT1b pN0 (0/2; sn) operated through round block incision, **b** 46-year old patient with breast cancer ypTis ypN0 (0/4; sn) after round block incision, **c** 53-year old patient with breast cancer ypT1a ypNx with periareolar incision, **d** 51-year old patient with breast cancer pT3 pN0 (0/1; sn) and round block incision, **e** 49-year old patient with breast cancer pT1b pN0 (0/2; sn) with lateral incision, **f** 45-year-old patient with breast cancer pT2 pN1mi (1/1; sn) and round block incision; SLN: sentinel lymph node.

► **Table 1** Single Incision for breast conserving therapy (IMF: inframammary fold; IMN: internal mammary nodes; UOQ: upper outer quadrant; UIQ: upper inner quadrant; LOQ: lower outer quadrant; LIQ: lower inner quadrant; n/a: not available; n/s: not significant; QOL: quality of life; *tendency towards more seroma, less axillary neuralgia in study group).

author	country	N	study design	incision type	success rate SNL retrieval	# of SLN (range)	# of cases with positive SLN	localization of tumor	surgical complication	QOL
Cocilovo et al. 2006	USA	44	prospective	n/a	97.7 %	2.74 (1–6)	13	UOQ (49 %)>central>UIQ>LOQ	none	n/a
Spillane et al. 2008	Australia	103 (59 axillary only)	retrospective	radial	86 % (axillary-only), 97 % (IMN), 63 % (both)	2.88 (1–7)	17	UOQ>LOQ>UIQ>medial>central	none	n/a
Bromberg et al. 2018	Brazil	60	retrospective (case-control)	periareolar/IMF	100 %	2	3	UOQ>LOQ>medial>retroareolar	no diff	n/a
Lovasik et al. 2018	USA	110	retrospective (case-control)	lateral	100 %	2 (2–3)	7	UOQ (59 %)>UIQ>LOQ>LIQ>retroareolar	no diff	n/a
Accea-Nebril et al. 2019	Spain	226	prospective (case-control)	periareolar/axillary/lateral/IMF	98.7 %	2.14	n/a	UOQ (64.4 %)>LOQ>UIQ>retroareolar>LIQ	n/s*	breast-Q™ (breast satisfaction)

nique as a single incision approach might meet the requirements of the above-mentioned tumor localization (► Fig. 1). Accea-Nebril et al. described level-II-oncoplastic procedures for multifocal and multicentric breast tumors, but only included four patients with round block technique.

Currently, we aim to prospectively analyze patient-reported outcomes and quality of life in a larger cohort after single incision round-block OPS.

Conflict of Interest

The authors declare that they have no conflict of interest.

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