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Prepectoral versus subpectoral implant-based breast reconstruction: A systemic review and meta-analysis

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Goals: Implant-based breast reconstruction (IBBR) remains the standard and most popular option for women undergoing breast reconstruction after mastectomy worldwide. Recently, prepectoral IBBR has resurged in popularity, despite limited data comparing prepectoral with subpectoral IBBR.
Methods: A systematic search of PubMed and Cochrane Library from January 1, 2011, to December 31, 2021, was performed following the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) reporting guidelines, data were extracted by independent reviewers. Studies that compared prepectoral with subpectoral IBBR for breast cancer were included.
Results: Overall, 15 studies with 3101 patients were included in this meta-analysis. Our results showed that patients receiving prepectoral IBBR experienced fewer capsular contractures (odds ratio [OR], 0.54; 95% CI, 0.32–0.92; P = .02), animation deformity (OR, 0.02; 95% CI, 0.00–0.25; P = .002), and prosthesis failure (OR, 0.58; 95% CI, 0.42–0.80; P = .001). There was no significant difference between prepectoral and subpectoral IBBR in overall complications (OR, 0.83; 95% CI, 0.64–1.09; P = .19), seroma (OR, 1.21; 95% CI, 0.59–2.51; P = .60), hematoma (OR, 0.76; 95% CI, 0.49–1.18; P = .22), infection (OR, 0.87; 95% CI, 0.63–1.20; P = .39), skin flap necrosis (OR, 0.70; 95% CI, 0.45–1.08; P = .11), and recurrence (OR, 1.31; 95% CI, 0.52–3.39; P = .55). Similarly, no significant difference was found in Breast-Q scores between the prepectoral and subpectoral IBBR groups.
Conclusion(s): The results of our systematic review and meta-analysis demonstrated that prepectoral implant-based breast reconstruction is a safe modality and has similar outcomes with significantly lower rates of capsular contracture, prosthesis failure, and animation deformity compared to subpectoral implant-based breast reconstruction.
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Breast reconstruction with resorbable scaffold and fat

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Goals: To complete the breast reconstruction using a resorbable mesh, already approved for use in the breast, and autologous fat grafting. This would avoid the use of breast implants and their associated problems (BIA-ALCL, BIA-SCC), while also avoiding the use of donor site incisions. In addition we aimed to do this using only one sheet of mesh per breast, expanding the use of the method to underserved areas as well.
Methods: Using the 15 × 20 cm Galaflex (Galatea Surgical, Lexington, MA) P4HB mesh per breast, we fashioned a starfish-like scaffold with a circular piece at its top to act as a nipple-areolar complex platform, so as to increase and preserve the projection of the breast better than a fat-only reconstruction. In addition it was hoped this would potentially decrease the number of fat grafting sessions required till completion of the reconstruction. Once a nipple-areola sparing mastectomy was completed via an inframammary incision, fat was harvested from the patient's abdomen. It was processed with decantation and grafted in the pectoralis major muscle belly and the base of the skin flaps circumferentially. Then the P4HB construct was secured on the anterior surface of the pectoralis major muscle with resorbable stitches, placing the circular platform behind the ideally placed nipple-areolar complex. A suction drain was introduced in the mastectomy cavity and the skin was closed as usual, after the cavity was irrigated with saline and then 50% povidone iodine solution. Once the drains were removed and the incisions healed, fat grafting sessions were offered to the patients every 2 to 3 months at the earliest. The reconstruction proceeded with placement of the fat graft in the interstices of the mesh construct, trying to release the scars formed in it to allow expansion of the breast. This was assisted by the use of an obstetrical suction cup applied on the breast to help distract it anteriorly and allow better expansion of the breast and placement of the grafts.
Results: We completed the reconstruction of 4 breasts (2 patients), one of which had been radiated in the past with 4 grafting sessions in each breast. The reconstructions were uneventful, while at the same time improving the outline of the patients' body. The projection was preserved better than our fat only reconstructions.
Conclusion(s): Using one sheet of P4HB per breast and lipofilling seems a viable reconstruction option, even for underserved areas of the planet, compared with the 2.5 sheets per breast in the literature.

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Breast molecular subtypes predict the local recurrence after primary surgery of breast cancer

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Goals: Breast molecular subtypes are the predominate factor predicting treatment options, prognosis and the recurrence possibility. However, the role of these molecular markers in selecting the appropriate surgical option has been controversial. We aim to find out if breast molecular subtype could predict the optimal surgical option for breast cancer patients by inspecting the incidence of ipsilateral local and regional breast cancer recurrence after breast surgery in each molecular subtypes, the incidence of contralateral breast recurrence, distant metastasis and predicting factors of recurrent events after primary surgery.
Methods: We retrospectively reviewed records of breast cancer patients who visited Siriraj Hospital's Breast clinic from December 2013 to October 2015. A total of 624 patients were included. To identify factors associated with time-to-recurrence, Kaplan-Meier curve and Cox's proportional hazard model were applied.
Results: From total 624 patients; intrinsic subtype was luminal B/HER2 negative in 312 patients (50%) followed by luminal A 108 patients (17.3%), luminal B/HER2 positive 85 patients (13.6%), triple negative (TNBC) 74 patients (11.9%) and HER2 overexpression 45 patients (7.2%). 397 patients underwent total mastectomy, 278 patients received surgery alone and 119 patients were given post-mastectomy radiation, and 227 patients underwent breast conserving surgery with radiation. The median follow-up time was 6.9 years. Locoregional recurrence only events were occurred in 20 cases (3.2%). Luminal B/HER2 negative had the highest evidence of recurrence by 50% from total recurrent events. The results showed no significant association between types of surgery and breast molecular subtypes due to small number of locoregional recurrence.
Conclusion(s): In all molecular subtypes, there was no significant difference in the locoregional recurrence rate between the two methods of surgery. However, because the rate of locoregional recurrence in this cohort was low across all subtypes, the conclusion may be influenced. A large sample size is required to confirm the conclusion.