

Clinical practice guidelines for post-mastectomy breast reconstruction: Chinese Society of Breast Surgery (CSBrS) practice guidelines 2021

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To promote the standardization of post-mastectomy breast reconstruction in China, the Chinese Society of Breast Surgery (CSBrS) determined the key issues in post-mastectomy breast reconstruction in clinical practice through a literature review and expert discussions, and then developed the CSBrS Clinical Practice Guidelines for Post-mastectomy Breast Reconstruction (2021 version) by systematically assessing relevant published evidence according to the Grading of Recommendations Assessment, Development, and Evaluation recommendations and based on the accessibility of clinical practice in China. This guideline provides a reference for Chinese breast surgeons.

Level of Evidence and Recommendation Strength

Level of evidence standard^[1]

Recommendation strength standard^[1]

Recommendation strength review committee

There were 76 voting committee members for this guideline: 62 breast surgeons (81.6%), four oncologists (5.3%), four radiologists (5.3%), two pathologists (2.6%), two radiation therapists (2.6%), and two epidemiologists (2.6%).

Target Audience

Clinicians specializing in breast diseases in China.

Recommendations

Recommendation 1: Indications.

Indications	Level of evidence	Recommendation strength
1.1 Breast cancer patients who have undergone mastectomy and need breast reconstruction ^[2,3]	II	A

Recommendation 2: Contraindications.

Contraindications	Level of evidence	Recommendation strength
2.1 Absolute contraindications	Inflammatory breast cancer ^[4] II	A
2.2 Relative contraindications	Smoking and obesity ^[3,5-7] II	A

Recommendation 3: Timing of breast reconstruction surgery.

Timing of surgery	Level of evidence	Recommendation strength
3.1 Immediate breast reconstruction ^[3,8]	II	A
3.2 Delayed breast reconstruction ^[3,8]	II	A
3.3 Delayed-immediate breast reconstruction ^[9,10]	II	A

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Recommendation 4: Autologous breast reconstruction.

Autologous breast reconstruction	Level of evidence	Recommendation strength
4.1 Transverse rectus abdominis myocutaneous (TRAM) flap breast reconstruction ^[11-13]	II	A
4.2 Deep inferior epigastric perforator (DIEP) flap breast reconstruction ^[11,12,14]	II	A
4.3 Latissimus dorsi flap (LDF) breast reconstruction ^[11,12]	II	A

Recommendation 5: Prosthetic breast reconstruction.

Prosthetic breast reconstruction	Level of evidence	Recommendation strength
5.1 Immediate implant-based breast reconstruction (one-stage method) ^[8,12]	II	A
5.2 Combined tissue expander and prosthetic breast reconstruction (two-stage method) ^[8,12]	II	A

Recommendation 6: Combined autologous and prosthetic breast reconstruction.

Combined autologous and prosthetic breast reconstruction	Level of evidence	Recommendation strength
6.1 Combined latissimus dorsi flap (LDF) and prosthetic breast reconstruction ^[15,16]	II	A

Recommendation 7: Commonly used covering materials in breast reconstruction.

Covering materials	Level of evidence	Recommendation strength
7.1 Acellular dermal matrix (ADM) ^[17-19]	II	A
7.2 Titanium-coated polypropylene mesh (TCPM) ^[18,19]	II	A

Discussion

Among malignancies in Chinese women, breast cancer has the highest incidence.^[20] With improvements in breast cancer screening and early diagnosis in China, the quality of life of approximately 30% of patients with early-stage breast cancer can be improved through breast-conserving

surgery. However, more than 60% of breast cancer patients still require mastectomy.^[21,22]

The National Comprehensive Cancer Network (NCCN) guidelines suggest that all breast cancer patients who undergo mastectomy should be able to choose to undergo breast reconstruction surgery.^[2,3] Additionally, the NCCN guidelines indicate that inflammatory breast cancer is an absolute contraindication for breast reconstruction^[3,4] and that smoking and obesity are relative contraindications.^[3,5-7] Regardless of whether prosthetic or autologous breast reconstruction is performed, smoking and obesity increase the risk of various breast reconstruction-related complications.^[3,5-7] Locally advanced breast cancer, radiotherapy history, stage IV breast cancer with distant metastasis, and connective tissue disease are not contraindications for breast reconstruction. The expert group believes that breast reconstruction for these patients is not supported by a high level of medical evidence.

Breast reconstruction can be categorized as immediate, delayed, and delayed-immediate according to the timing. Immediate breast reconstruction refers to breast reconstruction performed with mastectomy.^[8] Delayed breast reconstruction is generally performed one year after mastectomy or more than six months after radiotherapy.^[8] In delayed-immediate breast reconstruction, a tissue expander is implanted during mastectomy to preserve the skin and aesthetic structure of the breast region to the fullest extent.^[9]

Autologous breast reconstruction is an important breast reconstruction method.^[11,12] Commonly used autologous flaps for breast reconstruction include the transverse rectus abdominis myocutaneous flap,^[23] deep inferior epigastric perforator flap,^[14] and latissimus dorsi flap (LDF).

Among all breast reconstruction methods, prosthetic breast reconstruction is the most common surgical procedure after breast cancer surgery.^[11,12] Prosthetic breast reconstruction includes one-stage and two-stage reconstruction (with a tissue expander combined with prosthetic breast reconstruction).^[11] The expert group agrees that two-stage reconstruction requires two surgeries and may obtain better breast aesthetics through adjustments made during the second surgery.

Combined LDF and prosthetic breast reconstruction is another surgical procedure for breast reconstruction. The use of LDF alone for breast reconstruction may not achieve an ideal aesthetic effect due to insufficient donor-site volume, and a prosthesis will need to be implanted under the LDF to replenish the volume of the reconstructed breast. The expert group believes that combined LDF and prosthetic breast reconstruction can not only compensate for the deficiency of insufficient donor-site tissue in LDF breast reconstruction but also avoid the problem of insufficient surface coverage of the prosthesis.

The strength and thickness of prosthesis coverage during prosthetic breast reconstruction are key factors that determine the appearance of the breast after reconstruction. Patches used for breast reconstruction can be divided into two categories: patches made of bioderived materials,

such as acellular dermal matrix,^[17-19] and patches made of synthetic materials, such as titanium-coated polypropylene mesh.^[18,19]

With advances in breast cancer diagnosis and treatment concepts as well as socioeconomic and cultural development in China, the aesthetic requirements of breast cancer patients are gradually increasing, as is the percentage of patients undergoing breast reconstruction.^[21]

Conflicts of interest

None.

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