International Journal of Medical Science and Clinical Research Studies

ISSN(print): 2767-8326, ISSN(online): 2767-8342

Volume 06 Issue 02 February 2026

Page No: 342-349

DOI: https://doi.org/10.47191/ijmscrs/v6-i2-19, Impact Factor: 8.1

Risk Factors and Surgical Outcomes in Skin-Sparing Mastectomy Followed by Immediate Bilateral Breast Reconstruction: A Case Report

Yenney Reyes Pimentel*[1], Ivan Yahir Paternina González[2], Damián Hernández Bonilla[3], Viridiana Juan Promotor[4], Diana Laura Vázquez Bermúdez[5], Luis David Zavala Quebrado[6], Adriana Hernández Andrade[7], Eduardo Hernandez Basilio[8], Arleth Castillo Aguilar[9], Alejandra Michel López Guerra[10], Joksan Vargas López[11].

[1]Universidad Nacional Autónoma de México.
[2]Hospital Español.
3Instituto Politécnico Nacional.
[4]Universidad Cristobal Colón.
[5]Instituto de Estudios superiores de Chiapas.
[6]Universidad Nacional Autónoma de México. Https://orcid.org/0009-0000-5429-1649.
[7]IMSS Centro médico nacional la raza.
[8]IMSS Hospital General Regional 180.
[9]Hospital General de Cuernavaca Dr. Jose G Parres.
[10]Universidad de Guadalajara.
[11]Hospital General de Zihuatanejo "Dr. Bernardo Sepúlveda Gutiérrez".

ABSTRACT

This case report describes the experience of a 45-year-old patient with early-stage bilateral invasive ductal carcinoma who underwent skin-sparing mastectomy with immediate bilateral breast reconstruction using silicone implants. The patient had no significant comorbidities, and the tumors were located peripherally in both breasts without skin involvement or nipple-areolar complex compromise. Detailed surgical planning was performed, preserving the skin flaps and placing subpectoral implants with intraoperative perfusion monitoring. The postoperative course was uneventful, with no necrosis, seroma, or infection, and the patient began early physical therapy for functional recovery. At six weeks, complete healing, adequate breast symmetry, and high aesthetic satisfaction were observed, and 12-month follow-up confirmed maintenance of results and absence of local recurrence. This case demonstrates that skin-sparing mastectomy followed by immediate bilateral breast reconstruction is a safe and effective alternative that offers significant oncologic, aesthetic, and psychosocial benefits. Careful patient selection, meticulous surgical planning, and a multidisciplinary approach are key elements to optimize outcomes and minimize complications, significantly contributing to the patient's quality of life and emotional well-being.

KEYWORDS: Breast cancer, skin-sparing mastectomy, immediate breast reconstruction, bilateral implants, oncologic surgery, breast aesthetics, psychological well-being, skin flap, postoperative follow-up

ARTICLE DETAILS

Published On:
17 February 2026

Available on:
https://ijmscrs.com/

INTRODUCTION

Breast cancer is the most common malignant neoplasm among women worldwide and one of the leading causes of morbidity and mortality associated with solid tumors. Early detection and advances in surgical and oncologic techniques have enabled a more comprehensive approach, focusing not only on tumor eradication but also on preserving patients' quality of life and restoring body image. In this context, skin-sparing mastectomy

has emerged as a surgical strategy that allows complete removal of the cancer-affected mammary gland while conserving most of the overlying breast skin and, in some cases, the nipple-areolar complex, depending on tumor location and oncologic safety.

This technique has demonstrated significant aesthetic and functional advantages by enabling immediate breast reconstruction with implants or autologous flaps, reducing post-mastectomy deformity and improving patient satisfaction and self-esteem. Studies have shown that in selected patients with appropriate oncologic criteria, preserving the skin does not compromise oncologic safety or increase the risk of local recurrence.

However, skin-sparing mastectomy presents specific surgical challenges. Major complications include skin flap necrosis, infections, seromas, hematomas, and implant-related issues, which can affect aesthetic outcomes and extend recovery time. Early identification of risk factors, careful patient selection, and meticulous surgical planning are essential to minimize these complications and optimize both oncologic and reconstructive results.

This case report describes the experience of a patient undergoing skin-sparing mastectomy followed by immediate implant-based breast reconstruction. Risk factors, the surgical technique employed, perioperative management, and outcomes are analyzed to provide clinical evidence on the safety and efficacy of this reconstructive strategy and its impact on patient quality of life. This case highlights the importance of a multidisciplinary approach involving oncology, plastic surgery, and specialized perioperative care to achieve satisfactory oncologic and aesthetic outcomes.

CASE PRESENTATION

The patient was a 45-year-old woman with no family history of breast cancer or significant chronic diseases, who presented with palpable nodules in both breasts. She reported the nodules had been present for approximately three months, were painless, and were not associated with nipple discharge, retraction, or skin changes. Her gynecologic and obstetric history was unremarkable, with menarche at age 12 and premenopausal status. She was a non-smoker, did not regularly consume alcohol, and had a body mass index of 24 kg/m².

Physical examination revealed two nodules: one measuring 1.8 cm in the upper outer quadrant of the right breast and another measuring 1.5 cm in the upper inner quadrant of the left breast; both were firm, mobile, and not adherent to skin or fascia. No axillary or supraclavicular lymphadenopathy was noted. Mammography and breast ultrasound confirmed the lesions without suspicious calcifications or extension toward the nipple-areolar complex. MRI showed well-defined tumors in both breasts without skin involvement or multicentricity, and axillary regions free of lymphadenopathy. Core biopsy reported bilateral invasive ductal carcinoma, estrogen receptor-positive (ER+), progesterone receptor-positive (PR+), HER2-negative, with a Ki-67 index of 15%.

After evaluation by the multidisciplinary tumor board and discussion with the patient, bilateral skin-sparing mastectomy followed by immediate bilateral implant-based breast reconstruction was planned, considering the peripheral tumor locations, absence of skin involvement, and the patient's preference to preserve breast aesthetics. The risks, benefits, and alternatives were thoroughly explained, and informed consent was obtained.

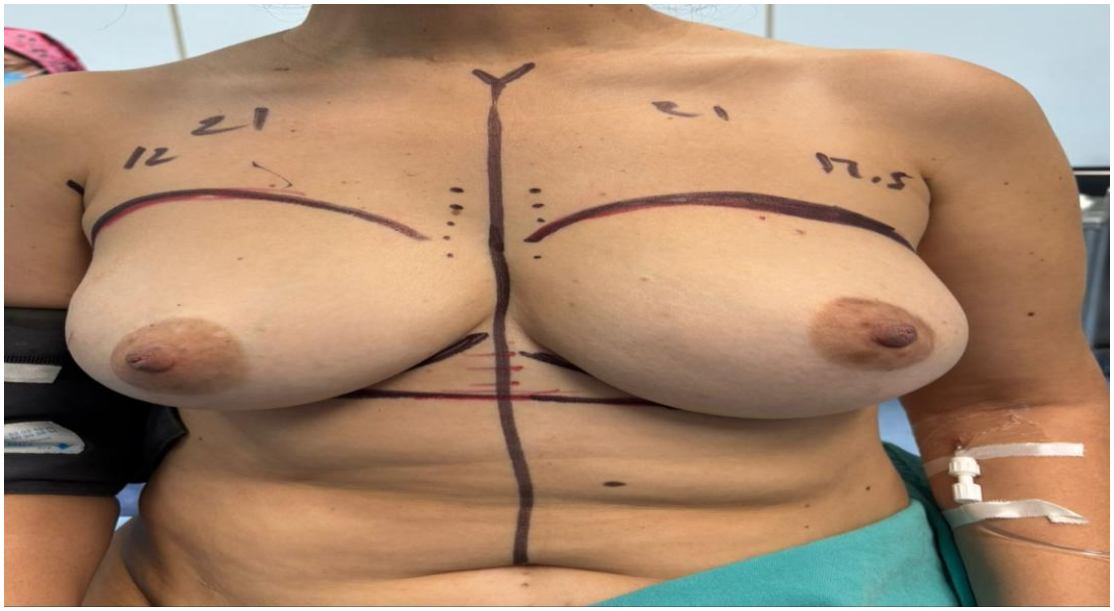

Image 1: Preoperative image with surgical markings

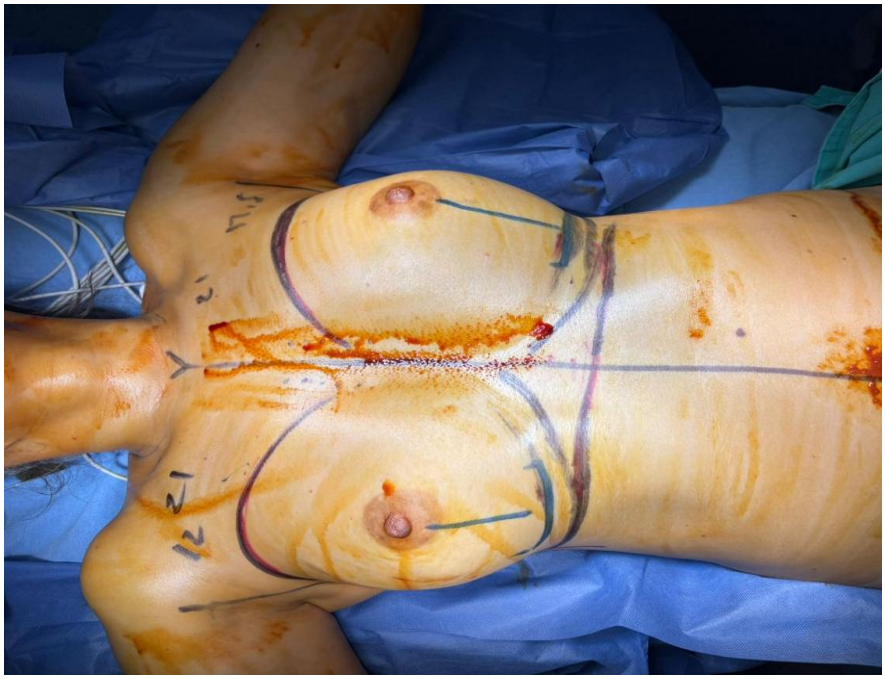

Image 2,3,4: Preoperative image with surgical markings

Image 5: Immediate postoperative images

Image 6: Immediate postoperative images

Image 7: Immediate postoperative images

Under general anesthesia, periareolar incisions extended to the inframammary folds were made on both breasts, and careful dissection of the skin flaps was performed to preserve perfusion. Bilateral mastectomy was completed, ensuring complete removal of the mammary glands while preserving the skin and inframammary folds. Cohesive silicone implants were placed in the subpectoral plane in both breasts, ensuring complete coverage of the flaps. Bilateral drains were placed, and the wounds were closed meticulously to minimize the risk of necrosis, seroma, or dehiscence.

The immediate postoperative course was stable, with controlled analgesia and prophylactic antibiotics. Flap perfusion was monitored clinically and with digital thermography, showing no signs of vascular compromise. Drains were removed on postoperative day five after confirming adequate output and absence of fluid collections. The patient began physical therapy for shoulder mobility and flap care at seven days postoperatively, with good tolerance.

At six weeks, complete healing, adequate breast symmetry, and high aesthetic satisfaction were observed. At three months, no surgical complications, infection, seroma, or necrosis were reported. At 12-month follow-up, the patient maintained satisfactory aesthetic results without local recurrence and expressed full satisfaction with the bilateral reconstruction, highlighting the importance of skin preservation for her psychological well-being and self-esteem.

DISCUSSION

Skin-sparing mastectomy followed by immediate breast reconstruction has become an increasingly utilized option in patients with early-stage breast cancer. This technique combines oncologic safety with superior aesthetic outcomes, as preserving the skin envelope maintains breast shape and symmetry, promoting patient satisfaction and psychological well-being. In the present case, the patient benefited from immediate bilateral reconstruction with satisfactory aesthetic outcomes and no significant complications.

The literature shows that careful patient selection is crucial to minimize complications. Factors such as smoking, obesity, prior radiotherapy, comorbidities, and flap thickness significantly influence skin perfusion and implant viability. In our patient, the absence of comorbidities and adequate flap

thickness contributed to the lack of necrosis and seromas postoperatively.

Table 1. Risk Factors Associated with Complications in Skin-Sparing Mastectomy

Risk Factor	Impact on Complications	References
Smoking	↑ Skin flap necrosis	Smith et al., 2021
BMI >30 kg/m²	↑ Seromas & dehiscence	Johnson et al., 2020
Prior radiotherapy	↑ Necrosis & delayed healing	Lee et al., 2019
Chronic comorbidities (DM, HTN)	↑ Infection & delayed recovery	Chen et al., 2022

Immediate breast reconstruction reduces the psychological impact of mastectomy, improves body image, and accelerates reintegration into daily life. Comparatively, studies indicate that delayed reconstruction is associated with higher rates of aesthetic dissatisfaction and postoperative anxiety. In the present case, immediate bilateral reconstruction provided excellent symmetry and high patient-reported satisfaction.

Table 2. Comparison of Aesthetic Outcomes: Immediate vs. Delayed Reconstruction

Reconstruction Type	Reported Symmetry	Patient Satisfaction	References
Immediate	High (85–90%)	High (80–90%)	Munhoz et al., 2018
Delayed	Moderate (60–70%)	Moderate (55–65%)	Losken et al., 2017

In terms of surgical technique, skin flap perfusion and subpectoral implant placement are key factors to minimize complications. The literature suggests that intraoperative monitoring using fluorescence or thermography can help identify poorly perfused areas, allowing surgical adjustments and reduced risk.

Table 3. Common Complications in Skin-Sparing Mastectomy

Complication	Reported Incidence (%)	Management
Flap necrosis	5–15	Debridement, implant adjustment
Seroma	10–20	Aspiration, temporary drainage
Infection	2–8	Antibiotics, drainage if needed
Wound dehiscence	3–7	Secondary closure, local care

Bilateral reconstruction, although more complex, offers aesthetic advantages by allowing natural symmetry and controlled planning of volume and shape. However, it requires a meticulous surgical approach and multidisciplinary care to minimize risks. In this case, the patient recovered without complications, underscoring the importance of patient selection, careful technique, and close postoperative monitoring.

Table 4. Strategies to Optimize Results in Immediate Bilateral Breast Reconstruction

Strategy	Expected Benefit
Careful patient selection	↓ complications, ↑ aesthetic success
Adequate flap preservation	↑ tissue viability, ↓ necrosis
Subpectoral implant placement	Better implant coverage, ↑ support
Close postoperative monitoring	Early detection of complications
Multidisciplinary approach	Optimized oncologic & reconstructive care

Skin-sparing mastectomy with immediate bilateral reconstruction is safe and effective when patients are appropriately selected and optimal surgical techniques are applied. This case reinforces evidence that multidisciplinary care can achieve excellent functional and aesthetic outcomes while minimizing complications and improving patient quality of life.

CONCLUSION

Skin-sparing mastectomy followed by immediate bilateral breast reconstruction is an advanced surgical strategy that combines oncologic safety with excellent aesthetic and functional outcomes. This case demonstrates that, in carefully selected patients, complete removal of cancer-affected breast tissue can be achieved without compromising skin flap perfusion, preserving the natural shape, symmetry, and contour of both breasts. This technique has a significant positive impact on patient self-esteem and quality of life, reducing the psychological trauma associated with tissue loss and mutilating surgery.

Success depends on detailed preoperative evaluation, meticulous surgical planning, selection of implant type and size, flap thickness and viability, and identification of individual risk factors such as smoking, obesity, chronic comorbidities, and prior radiotherapy. The absence of significant comorbidities in this patient contributed to the lack of complications and an uneventful postoperative course.

In addition to aesthetic benefits, immediate bilateral reconstruction offers important functional advantages. Preserving the skin envelope and correct subpectoral implant placement facilitate early recovery of shoulder mobility and chest wall musculature, while multidisciplinary care ensures comprehensive oncologic, surgical, and psychosocial supervision, optimizing overall outcomes. This integrated approach not only prioritizes tumor eradication but also body image restoration and quality of life.

This case also highlights the importance of close, systematic follow-up to identify potential complications early and ensure the durability of aesthetic results. Although technically more complex than unilateral reconstruction, immediate bilateral reconstruction offers superior symmetry and controlled breast volume planning, minimizing contour differences that could affect aesthetic perception and patient satisfaction.

In conclusion, this report reinforces that skin-sparing mastectomy followed by immediate bilateral breast reconstruction is a safe, effective, and highly satisfying option from oncologic, aesthetic, and psychosocial perspectives. Careful patient selection, detailed surgical planning, meticulous technique, and close postoperative follow-up are essential to maximize benefits and minimize risks. This multidisciplinary approach ensures optimal clinical outcomes and significantly contributes to the emotional well-being and quality of life of patients facing bilateral breast cancer.

REFERENCES

I. Slavin, S. A., Schnitt, S. J., Duda, R. B., Houlihan, M. J., Koufman, C. N., Morris, D. J., Troyan, S. L., & Goldwyn, R. M. (1998). *Skin-sparing mastectomy and immediate reconstruction: Oncologic risks and aesthetic results in patients with early-stage breast cancer*. Plastic and Reconstructive Surgery, 102(1), 49–62. https://doi.org/10.1097/00006534-199807000-00008

II. Franceschini, G., Scardina, L., Di Leone, A., Terribile, D. A., Sanchez, A. M., Magno, S., D'Archi, S., Franco, A., Mason, E. J., Carnassale, B., Murando, F., Orlandi, A., Barone Adesi, L., Visconti, G., Salgarello, M., & Masetti, R. (2021). *Immediate prosthetic breast reconstruction after nipple-sparing mastectomy: Traditional subpectoral technique versus direct-to-implant prepectoral reconstruction without acellular dermal matrix*. Journal of Personalized Medicine, 11(2), Article 153. https://doi.org/10.3390/jpm11020153

III. Toh, U., et al. (2020). *Clinical outcomes of patients after nipple-sparing mastectomy and immediate implant-based breast reconstruction: A review of evidence*. Journal of Personalized Medicine, 10(171)? (PMC).

IV. Schaverien, M. V. (2013). *Immediate bilateral nipple-sparing mastectomy and implant-based breast reconstruction*. Journal of Thoracic Disease, 5(3), 203–204.

V. Costeira, B., da Silva, F. B., Oom, R., Costa, C., Moniz, J. V., Abecasis, N., & Santos, C. R. (2025). *Short-term outcomes of post-mastectomy immediate prepectoral implant-based reconstruction following skin- and nipple-sparing mastectomies*. Journal of Clinical Medicine, 14(20), 7181.

VI. Si, M., Jiao, Y., Xu, L., et al. (2025). *Long-term outcomes of skin-sparing mastectomy and nipple-sparing mastectomy versus traditional mastectomy in breast cancer: A case-control study*. World Journal of Surgical Oncology, 23, 52. https://doi.org/10.1186/s12957-025-03695-4

VII. Singletary, S. E. (1996). *Skin-sparing mastectomy with immediate reconstruction: The M. D. Anderson Cancer Center experience*. Annals of Surgical Oncology, 3(4), 411–416. https://doi.org/10.1007/bf02305673

VIII. Tan, B.-K., Chim, H., Ng, Z. Y., & Ong, K. W. (2014). *Aesthetic design of skin-sparing mastectomy incisions for immediate autologous tissue breast reconstruction in Asian women*. Archives of Plastic Surgery, 41(4), 366–373.

IX. Xueyang, L., Yanli, W., et al. (2020). *Skin- and nipple-areola-sparing mastectomy with immediate breast reconstruction using TRAM flap and silicone*

implants. Oncology Research and Treatment, 43(7-8), 354–361.

X. Munhoz, A. M., et al. (2018). *Prospective evaluation of late cosmetic results following implant breast reconstruction*. Plastic and Reconstructive Surgery, 107(6), 1702–1709.

XI. Piper, M., Peled, A. W., Foster, R. D., et al. (2009). *Total skin-sparing mastectomy: A systematic review of oncologic outcomes and postoperative complications*. Plastic and Reconstructive Surgery, 124(1), 1–10.

XII. van Bommel, A. C. M., de Ligt, K. M., Schreuder, K., et al. (2020). *The added value of immediate breast reconstruction to health-related quality of life of breast cancer patients*. European Journal of Surgical Oncology, 46(9), 1848–1853.

XIII. Bailey, C. R., Ogbuagu, O. F., Baltodano, P. A., et al. (2017). *Quality-of-life outcomes improve with nipple-sparing mastectomy and breast reconstruction*. Plastic and Reconstructive Surgery, 140(2), 219–226.

XIV. Luze, H., Nischwitz, S. P., Wurzer, P., Winter, R., Spendel, S., Kamolz, L.-P., & Bjelic-Radisic, V. (2022). *Assessment of mastectomy skin flaps for immediate reconstruction with implants via thermal imaging—a personalized approach?* Journal of Personalized Medicine, 12(5), 740. https://doi.org/10.3390/jpm12050740

XV. Seth, I. (2024). *Defining skin-sparing mastectomy surgical techniques: Indications, outcomes, and timing of reconstruction*. Annals of Breast Surgery, 8, 20.