

Peer Review File

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Reviewer A

Thank you for your insightful comments.

Comment 1: references

Reply 1:

Introduction

Line 66 - references

Reply: We added a reference (see Page 23, lines 416–418)

Line 74 - references

Reply: We added a reference (see Page 24, lines 433–435)

Discussion

Line 272 - references

Reply: This sentence is a description of the results of this study without reference to other literature.

Comment 2: I think the authors should describe the types of incisions used in non-endoscopic mastectomies, since all were NSM...

Reply 2: Thank you for your advice. The non-endoscopic approach in this article is total mastectomy, not NSM. We made a spindle-shaped incision on the surface of the breast, including the NAC, that was approximately 15 cm long.

Comment 3 and 4:

The authors should describe breast reconstructions types (direct to implant or two stages; implants volume; if they needed to increase the incision in endoscopic mastectomy).

In my view, Inframmary fold incision (IMF) are nice options in NSM incisions. Maybe a discussion between endoscopic mastectomy and IMF NSM.

Reply 3 and 4: The patients requiring breast reconstruction combined with SIE-NSM were not enrolled in this study. The selected cases included patients who did not wish to undergo breast reconstruction surgery for personal reasons, and only SIE-NSM was performed. SIE-NSM preserved the NAC as the visual focus, which improved satisfaction with breasts and chest well-being. Due to the small breast size of all patients enrolled, the loss of the mammary gland, yet the sparing of the NAC only affected the symmetry of the breasts slightly. Our center is completing another study to determine the effects of silicone breast reconstruction and SIE-NSM.

Because of the absence of implants, the postoperative chest wall is flat, and the IMF can be easily seen. There is no significant aesthetic improvement compared with the breast surface incision. In addition, the IMF is difficult to perform when the operation is close to the clavicle position. The SIE-NSM incision is hidden in the axilla, which has an excellent aesthetic effect, and there is no difficulty in operating the distant position.

Reviewer B

Comment 1: First, the Author should specify why they chose an assignment ratio of 1:3 instead of 1:1.

Reply 1: Thank you for raising this critical issue. This was a retrospective study. We calculated the sample size, reviewed the previous case information, and selected only cases with relatively complete data to be included in our study. The ratio between the endoscopic and open groups among the eligible sample was about 1:3 due to factors outside our control.

Comment 2: The Author did not specify which variables have been considered for the cost analysis, writing the results directly. I suggest adding it to the material and methods section and then adding a paragraph also in the discussion.

Reply 2: We added the data of mean cost in Table 5 and modified our text as advised (see page 14, lines 234–235, and pages 20, lines 368–371).

Comment 3: Please, add also in the manuscript a unit of measure for blood loss, the length of the incision, and the operative time.

Reply 3: We have modified our text as advised (see page 13-14, lines 229–234).

Comment 4: Please, explain why the patients have not received an immediate breast reconstruction, since it is the most frequent strategy.

Reply 4: The main reason is that patients do not want to undergo breast reconstruction because of financial reasons or fear of complications, for the cost of prosthetic reconstruction is not reimbursed by medical insurance in our country. Secondly, we enrolled patients with small breasts. The breast volume of these patients is small; even if breast reconstruction is not performed, it will not cause obvious asymmetry. Moreover, many Asian women have small breasts, so if they choose even the smallest implant, they will appear fuller than the contralateral side, resulting in asymmetry. So these patients choose resection rather than reconstruction.

Reviewer C

Comment 1: what is the definition of subcutaneous effusion? does it mean subcutaneous seroma? If so, what is the definition of subcutaneous seroma? and how to evaluate the existence of seroma? just physical examination or ultrasound?

Reply 1: Thank you for your question. Subcutaneous effusion is subcutaneous seroma. It can

be diagnosed when a postoperative physical examination reveals a sensation of fluctuation and a puncture can extract fluid.

Comment 2: for subcutaneous dissection in the endoscopic arm, liposuction is not widely used for endoscopic surgery, and there is a potential concern of spreading tumor cells during blunt dissection using liposuction in patients with tumors located in the subcutaneous layer or close to the skin. it should be discussed in the manuscript.

Reply 2: We have modified our text as advised (see page 16, lines 279–288).

An RCT study [1] showed that endoscopic axillary lymph node dissection by liposuction does not increase the risk of metastasis or recurrence of patients, even in the case of axillary lymph node metastasis. We recently published a retrospective study confirming that single-port insufflation endoscopic nipple-sparing subcutaneous mastectomy combined with immediate reconstruction using prosthesis implantation by liposuction is comparable to conventional open-nipple and areola-sparing subcutaneous mastectomy combined with immediate reconstruction using prosthesis implantation in terms of tumor safety [2]. These conformed that liposuction is safe.

Our primary endpoint in this article was to look at local recurrence, distant metastasis, and others, and we also wanted to see if liposuction would affect local recurrence. From the preliminary results of this exploratory study article, liposuction did not increase the local recurrence rate.

[1] Luo C, Guo W, Yang J, Sun Q, Wei W, Wu S, Fang S, Zeng Q, Zhao Z, Meng F, Huang X, Zhang X, Li R, Ma X, Luo C, Yang Y. Comparison of mastoscopic and conventional axillary lymph node dissection in breast cancer: long-term results from a randomized, multicenter trial. *Mayo Clin Proc.* 2012 Dec;87(12):1153-61. doi: 10.1016/j.mayocp.2012.07.022. Epub 2012 Nov 9. PMID: 23146657; PMCID: PMC3541933.

[2] Wang ZH, Gao GX, Liu WH, Wu SS, Xie F, Xu W, Ding GQ, Xu YQ, Zhang ZT, Qu X. Single-port nipple-sparing subcutaneous mastectomy with immediate prosthetic breast reconstruction for breast cancer. *Surg Endosc.* 2023 May;37(5):3842-3851. doi: 10.1007/s00464-023-09862-6. Epub 2023 Jan 25. PMID: 36695902; PMCID: PMC10156621.

Comment 3:in your manuscript, page 8, line 124, you described that "we made a 2.5 cm single-port incision along the wrinkles of the axilla," however, the mean incision size of the endoscopic arm was 3.7 ± 0.7 cm in Table 5. It would be better to use the range rather than the specific length because incision size can differ according to the breast volume.

Reply 3: When we started the surgery, we took the incision length based on the single-port insufflation kit, so the incisions were all approximately 2.5 cm. However, after surgery, the incisions will be slightly longer than before, so our final statistics of the incision length is 3.7 ± 0.7 cm.

Comment 4: please, describe breast volume or weight according to the procedure. It affects subcutaneous seroma formation and complications including skin or nipple necrosis.

Reply 4: During surgery, we do not routinely measure the volume and weight of the specimen, but the pathology department accurately measures the length, width, and thickness of the specimen. We have calculated that the length of the specimen is about 10-19 cm, the width is about 10-15 cm, and the thickness is about 1.5-2 cm, resulting in an average volume of about 248.7 cm^3 .

Reviewer D

Comment 1: The study is interesting and shows a new technique for NSM. However, the follow-up is too short of demonstrating the oncological safety of the technique analyzing patients in stages I and II, most with Luminal tumors.

Reply 1: Thank you for your positive comment on the present study. The follow-up time was extended to 2023.7.31, with a mean follow-up time of 81.1 ± 21.3 months in the SIE-NSM group and 80.1 ± 16.7 months in the C-OM group (Table 1). No new local recurrence or distant metastasis occurred, and there was no significant difference in tumor safety between the two

groups.

Comment 2: Many references are missing in the introduction and discussion (Example: line 263), and the references about NSM can include updated studies.

Reply 2: I have revised and updated the references. They have also been highlighted in red in the references section.

Comment 3: The patients were followed up by telephone 12 months after the operation. Why didn't they fill the BREAST-Q pre and post-operation?

Reply 3: This was a retrospective study, so these patients did not have BREAST-Q scoring before surgery. Because the dye tracer injected into the nipple and areola has not subsided in the short term after surgery, we are worried that this may affect the accurate result of the BREAST-Q score, so we choose to perform BREAST-Q score 12 months post-surgery after the tracer dye reaches a stable state or has subsided.

Comment 4: The analysis of the upper extremity function was subjective; this should be clear in the results and discussion.

Reply 4: No classic scale is suitable for measuring upper limb function after breast surgery. This subjective scale was developed according to our experience and has been used in our center for many years.

Comment 5: In the results, the clinicopathological characteristics are only described in a table. Information about axillary surgery, ki67, and adjuvant treatment are not presented. These factors could also influence local recurrence and complications.

Reply 5: We added the ki67 and adjuvant treatment data in Table 1 and modified our text as advised (see page 9, line 132, and page 10, line 165–166).