A Breast Reconstruction Using a Breast Prosthesis and Capsular Flap for a Lymphocele Patient

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Summary: We encountered a very rare condition where the patient had a lymphocele under the skin envelope of the breast following mastectomy during the course of breast reconstruction with a tissue expander. The incidence rate of axillary lymphoceles is reported as 2.2–50% in breast cancer patients, but there have been no reports mentioning lymphoceles under the breast skin during the course of breast reconstruction with a prosthesis. The patient had a lymphocele in the lower lateral part of the breast following mastectomy and had multiple cellulitis-like inflammations. These inflammations were treated with conservative therapy such as administration of antibiotics, resting, and cooling. After 6 months of the initial surgery, the patient underwent complete resection of the lymphocele, preventative elimination of a possible lymphatic leakage, and breast reconstruction using a prosthesis combined with a capsular flap. The capsular flap is a transposition flap that uses capsular tissue around the expander to cover adjacent thinned skin. There were no postoperative complications such as breast skin necrosis, exposure of the prosthesis, or recurrence of the lymphocele and cellulitis. The patient had a successful breast reconstruction even though a lymphocele of the breast was observed. Even though a patient may have a lymphocele in the breast following mastectomy, with careful resection of the lymphocele, complete elimination of possible lymphatic leakage, and by performing the capsular flap technique, complete breast reconstruction with a breast prosthesis may be successful. (Plast Reconstr Surg Glob Open 2017;5:e1534; doi: 10.1097/GOX.0000000000001534; Published online 24 October 2017.)

BACKGROUND
Lymphocele under the skin envelope of the breast following mastectomy is rarely seen during breast reconstruction with a tissue expander. The incidence rate of axillary lymphoceles is reported as 2.2–50% in breast cancer patients who undergo axillary lymph node dissection.1–3 Moreover, presence of a lymphocele under breast skin that is discovered during breast reconstruction with a prosthesis is quite rare. There is only 1 report1 describing a lymphocele in the breast after immediate breast reconstruction with an autologous flap. Adverse sequelae of lymphoceles are known to increase the infection rate and wound dehiscence.3 These risk of complications obviously becomes serious when the patient is scheduled to undergo breast reconstruction with a prosthesis.

In this study, we present our idea on achieving breast reconstruction with a prosthesis for patients developing lymphocele in the breast following mastectomy.

METHODS
A 31-year-old woman with no comorbidity except for a breast mass, diameter 3.2 cm in between the right upper outer quadrant and lower outer quadrant, had been diagnosed with Luminal B subtype breast carcinoma. This patient had undergone a nipple-sparing mastectomy via 10 cm incision in the lateral thoracic area and sentinel lymph node biopsy after a course of preoperative chemotherapy due to the tumor subtype. Sentinel biopsy was performed through the mastectomy incision. Four lymph nodes were harvested through this incision, and no positive lymph node was observed in the pathological diagnosis. Immediate breast reconstruction was planned using a prostheses, and the patient had a breast expander, Allergen Natrelle 133FV-11, placed under the pectoralis muscle in the ordi-

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On day 2 post operation, drainage fluid from the breast wound showed a milky color, with the amount increasing by approximately 100 ml a day. At the same time, the breast skin envelope became reddish and swollen. This patient had been diagnosed as having a lymphatic fistula and had been treated using compression therapy to the axilla, cooling of the breast, a low fat diet and antibiotics therapy. Nine days after the surgery, the drainage fluid became clear. The drain was removed 10 days postoperative, and the total drainage amount was 1010 ml in 10 days.

At 1 month post operation, the breast skin envelope of the patient started to expand; meanwhile a symptomatic small mass was observed in the lower lateral part of the breast skin. As the patient had no complaint other than a small mass in the breast, expansion of the breast skin envelope continued until 3 months post operation.

After a period of 4 months post operation, the patient suddenly complained of growth of the breast mass, which became reddish, swollen, and was accompanied by fever (Fig. 1). Computed tomography (CT) images showed a solitary homogeneous mass between the dermis and the breast expander. A punctured sample fluid showed a red-milky fluid, and a culture from this drainage fluid was negative for infection. The patient was treated with conservative therapy, cooling and administration of antibiotics, and this cellulitis-like symptom improved.

In the 6-month postoperative period, this patient underwent breast replacement of with a breast prosthesis. Breast prosthesis, Allergen Natrelle style 410 MM115-245, was successfully replaced with the breast expander. There were no postoperative complications such as breast skin necrosis, exposure of the prosthesis, or recurrence of the cyst. Moreover, no milky drainage fluid was observed in the drain after the surgery. The drain was removed 8 days after the surgery, and the total drainage volume was 398 ml in 8 days. Pathological examination showed that the mass was a simple cyst without epithelial tissue; therefore, the final diagnosis was a lymphocele. At 6 months post operation, the patient has no complaint of recurrence of the lymphocele, inflammation of the breast, or problems with the prosthesis (Fig. 4).

The etiology by which the lymphocele may have developed in the breast following mastectomy and discovered during reconstruction surgery is likely that described in the past literature. Namely, as a consequence of oozing...
onto small vessels, lymphatic vessel injuries, creation of a
cavity due to the extensive dissection involved in the ax-
illary lymphadenectomy, surgical management and sev-
eral individual factors. In our case, small damage to the
lymphatic vessels is the most likely cause of the lympho-
cele development. That is because other symptoms were
not observed in this patient’s perioperative period. The
skin incisions in the lateral thoracic area for mastectomy
and sentinel node biopsy do not pose a risk for lympho-
cele development in the breast skin, because this incision
was made distant to the axillary lymphatic systems.

A lymphocele increases the risk of infection, inflam-
mation, and wound dehiscence. Therefore, we devised
a plan to complete the breast reconstruction successfully
with a prosthesis. The plan was careful, complete resection
of the lymphocele, having the patient follow a low fat diet
post operation, performing preventative sutures to avoid
recurrence of the lymphocele, and using the capsular flap
technique to achieve successful breast reconstruction with
a prosthesis. The capsular flap technique was the key ele-
ment of our plan, because this patient was rather thin and
did not have enough subcutaneous soft tissue in the breast
skin. On the other hand, there are some reports describ-
ing usage of acellular dermal matrix or Vicryl mesh to
solve the problem of thinned breast skin, which our patient
had. Such reports would probably have been ideal for our
patient; however, we could not use them due to national
insurance issues.

**SUMMARY**

Even though a patient may have a lymphocele in the
breast following mastectomy, and it is discovered during the
course of breast reconstruction, with careful resection of
the lymphocele, complete elimination of possible lymphatic
leakage, and use of the capsular flap technique, a surgeon
might succeed in completing breast reconstruction with a
breast prosthesis.

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