

간이식 수용자에서 시행한 유방 고정술의 증례보고

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Mastopexy Performed in a Liver Transplantation Recipient: A Case Report

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Purpose: Liver transplantation is a groundbreaking section in the field of surgery. Nowadays over 90% of success rate is accomplished and life expectancy of the patients has been elongated. Patients are now seeking for surgical procedures including cosmetic plastic surgery. But these patients take immunosuppressive medication and steroids, which can increase the risk of wound infection, and delay wound healing. By reviewing the case of a 21-year-old liver transplant recipient who underwent mastopexy due to breast ptosis, we discussed about the matters we should consider when performing surgery in liver transplantation recipients.

Methods: The patient was a 21-year-old female who received liver transplantation from her father. She was exposed to massive amount of steroids and immunosuppressants, which led to breast ptosis. The vertical and short horizontal incision mastopexy using a medial-based pedicle was done, 29 months after the liver transplantation.

Results: On postoperative day 1, she was discharged. On day 10, sutures were removed and taping was applied. There was no sign of wound infection, wound dehiscence, hematoma or bleeding. The patient was followed up at 3, 6 and 9 months after the operation. Mild recurrence of the glandular ptosis was observed but revision was not required.

Conclusion: We were able to successfully operate without any complications in the liver transplant recipient. With special attention and consideration, cosmetic plastic surgery can be safely performed in organ transplantation recipients.

Key Words: Mastopexy, Liver transplantation recipient

I. INTRODUCTION

Liver transplantation is a field of surgery which is actively performed and constantly evolving. Due to the advancement in technique and refinement of immunosuppressants, graft rejection rate has dropped markedly and thus increased the life expectancy of the patients. With longer life expectancy, patients started to seek for procedures like cosmetic surgery for better life quality.

After receiving liver transplantation, the patient would be taking massive amount of steroids and immunosuppressants. The side effects of using steroid for a long time have been reported many times.^{1,2} Particularly, increased chance of wound infection, delayed wound healing and possibility of hematoma makes it risky for the surgeon to operate on this kind of patients. But these patients might need reconstructive surgery for removing tumor or trauma, or cosmetic surgery for aesthetic reasons.

We reviewed a case of a 21 year old female liver transplant recipient, who had mastopexy due to breast ptosis as a result of the side effects of massive steroids and immunosuppressants. We discussed about the considerations and cautions in performing plastic surgery on these patients. There were previous reports and opinions on this issue, but this is known to be the first report in Korean patients.

II. CASE

The patient was a 21 year old female who was previously healthy. She had taken Acetaminophen (Tylenol[®], Janssen pharmaceuticals, New Jersey, USA) to relieve the flu symptoms that she had for a week, and then developed fever and jaundice. She came to the emergency room and was diagnosed with acute liver failure. The patient received living donor liver transplantation from her

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father on October 8th 2006. The operation was successful, showing normal liver functions on serial follow up. After the operation she received steroids and immunosuppressants. Only for the first 5 months she received steroid medication after the operation, which was 1 month of intravenous Methylprednisolone sodium succinate 625 mg (Methysol[®], Kunwha pharmaceuticals, Seoul, Korea), 3 months of intravenous Methylprednisolone sodium succinate 125 mg combined with oral Methylprednisolone 12 mg (Methylon[®], Kunwha pharmaceuticals, Seoul, Korea), and oral Methylprednisolone 4 mg for the final month. At this 5 month period, immunosuppressants were concomitantly used, which was Cyclosporin 250 mg (Sandimmun[®], Novartis pharmaceuticals, Basel, Switzerland) for the first month, and Mycophenolate mofetil 750 mg (Cellcept[®], Roche pharmaceuticals, Basel, Switzerland) with Cyclosporin 50 mg for the rest of the 4 month. After tapering the steroids only immunosuppressants were used for immunosuppression, which was Mycophenolate mofetil 500 mg with Cyclosporin 150 mg. The patient's weight had increased from 55 kg to 66 kg during the first 4 months after the operation. The weight gain was especially prominent on her arms and breast, making multiple striae on her breast and arms and developing ptosis in this period. As steroids are known to reduce collagen synthesis and production in the skin and connective tissue,³ we believe it had played a role in developing breast ptosis. She had moderate ptosis of Regnault grade 2ptosis. Operability of the patient was consulted with the transplantation team and was granted. The surgery was scheduled on the day which was 29 months after the liver transplantation operation. The patient's height was 157 cm and her weight was 61.75 kg with BMI of 24.89. Her brassiere size was 85-C. Vertical and short horizontal incision mastopexy using a medial-based pedicle was done. Negative drains were not used, and usual dressing was done on the breast. Cefmetazole sodium (Cefotazol[®], Chungundang pharmaceuticals, Seoul, Korea) was used for prophylactic IV antibiotics, and Cefdinir (Omnicef[®], Cheil pharmaceuticals, Seoul, Korea) was used for oral antibiotics for 5 days. This was the same protocol as the other patients. At the time of the operation, the patient was not taking steroids. The only medication she was taking was immunosuppressants (Mycophenolate mofetil 750 mg, Cyclosporin 50 mg). Immunosuppressants were used immediately after the operation. The patient was discharged one day after the surgery.

There was no sign of wound infection, wound dehiscence, hematoma, bleeding or liver function problems

after the operation. Sutures on the wound were removed rather late than usual, which was 10 days after the operation. Taping was done to prevent wound dehiscence. As the usual protocol, customized garments were used to support the breast. During the serial follow up on 3, 6, and 9 months after the operation, there was still no signs of wound infection, wound dehiscence, hematoma or bleeding. The results were evaluated by the surgeon. Both the patient and surgeon were satisfied with the result. The patient did not have any findings of recurrence until 3 months after the surgery, but glandular ptosis was found on the postoperative 6 month follow up, based on the surgeon's perception, showing 1~2 cm lower position than the prior 3 month visit. The glandular ptosis did not increase afterwards and the patient was overall satisfied with the result (Fig. 1, 2).

III. DISCUSSION

Liver transplantation is a rapidly developing field in general surgery. Over the past few decades advancement in surgical technique and development of more potent and efficient immunosuppressants have increased the life expectancy and life quality of the patients.

Since the Danish researchers have advocated the non steroid immunosuppressant regimen after the transplantation surgery, large centers in the United States started to adapt this regimen since 2001.^{4,5} These changes have dramatically improved the life quality of the patients who had previously suffered from the side effects of steroids such as moon face and truncal obesity. And since these patients started to have improved looks, they started to seek for procedures like cosmetic surgery.

Liver transplant recipients must use immunosuppressants for the rest of their life. Using steroids and immunosuppressants may increase the chances of wound infection, wound dehiscence and delayed wound healing. Additionally, long term use of immunosuppressants induces renal toxicity, hepatotoxicity, cardiac abnormality, hypertension and platelet dysfunction. Thus operating on these patients imposes greater risk compared to normal patients.

There were previous reports about surgery performed in organ transplantation patients. Cohen and colleagues reported their successful reconstruction cases with organ transplantation patients,⁶ Papadopoulos et al., reviewed their 41 cases with organ transplantation patients, and concluded that patients who performed early surgery after the organ transplantation tend to have higher complication rates.⁷ Also Lee and his colleagues reviewed



Fig. 1. Preoperative and postoperative results. (Above, left) Preoperative AP view of the patient. (Above, right) Preoperative lateral view of the patient. (Below, left) Postoperative AP view of the patient. (Below, right) Postoperative lateral view of the patient.

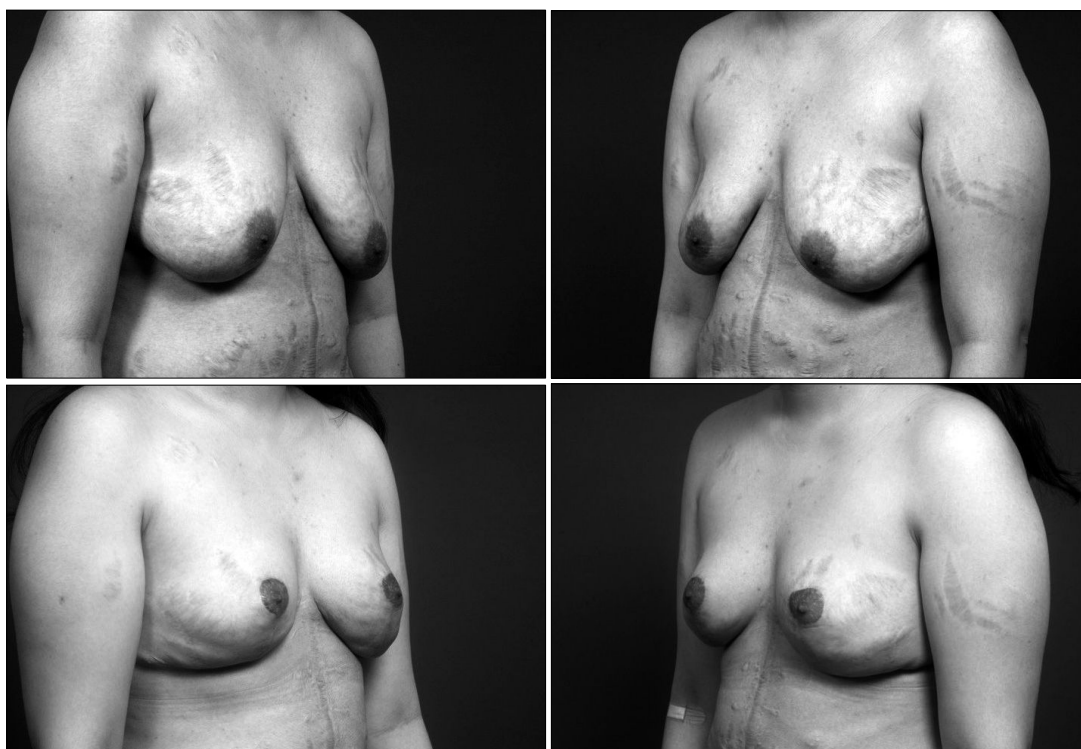


Fig. 2. Preoperative and postoperative results. (Above, left) Preoperative left oblique view of the patient. (Above, right) Preoperative right oblique view of the patient. (Below, left) Postoperative left oblique view of the patient. (Below, right) Postoperative right oblique view of the patient.

their free flap cases with organ transplantation patients and concluded that there was no risk in operating on these patients under the circumstances that the patients were carefully selected.⁸

There was no incidence of wound infection, delayed wound healing, hematoma or bleeding seen in this case. There was no difference in the protocol of antibiotics use, method of dressing or hospital stay with other cases. But regarding the different wound healing speed, the sutures were taken out later than usual. One interesting thing about this case is that the breast which was maintained successfully in the initial follow up showed mild glandular ptosis on serial follow up. The patient did not have any weight changes. This was not found in other patients, with similar degree of ptosis and similar operation methods. This was probably due to the effect of the steroids that she had taken. The steroids seem to have weakened the soft tissue and dermal structure and made the skin brassiere loose.

In this case we did not have any complications, but there are special considerations needed when we operate on patients with organ transplantation history using immunosuppressants. Cendales and colleagues reviewed their patients with organ transplantation history and recommended the following when performing surgery in organ transplantation patients.⁹

1. Consult with the transplantation team about the operability and timing of the surgery.
2. Perform surgery on a stable immunosuppressed state. Do not perform surgery while the patient is under maximum potency of the immunosuppression, which is usually a few months after the transplantation.
3. Continue the usual dosage of steroids in patients under steroid therapy.
4. Caution must be taken in patients using sirolimus. There are many reports with wound problems using this medication.
5. Check the wound healing status, maintain sutures or stapler on the wound longer.

Also these patients frequently have multiple diseases such as hypertension or diabetes, so screening for these diseases must be done. This is also another reason for the emphasis on the necessity of consultation with the

transplantation surgeon for risk assessment. And as most of the immunosuppressants have side effects of hypertension and platelet dysfunction, the surgeon must pay attention to meticulous hemostasis and blood pressure control. Special attention must be paid on patients using Sirolimus. Sirolimus has a higher chance of delayed wound healing than other immunosuppressants, so avoiding surgery would be a good option when possible.

Transplant patients requiring reconstructive surgery or cosmetic surgery will continue to increase. If we pay special attention to the considerations and cautions for these patients, performing safe surgery without major complications will be possible.

REFERENCES

1. Birkeland SA: Steroid-free immunosuppression after kidney transplantation with antithymocyte globulin induction and cyclosporin and mycophenolate mofetil maintenance therapy. *Transplantation* 66: 1207, 1998
2. Freise CE, Kang SM, Feng S, Hirose R, Stock P: Excellent short-term results with steroid-free maintenance immunosuppression in low-risk simultaneous pancreas-kidney transplantation. *Arch Surg* 138: 1121, 2003
3. Leibovich SJ, Ross R: The role of the macrophage in wound repair: a study with hydrocortisone and antimacrophage serum. *Am J Pathol* 78: 71, 1975
4. Sarwal MM, Yorgin PD, Alexander S, Millan MT, Belson A, Belanger N, Granucci L, Major C, Costaglio C, Sanchez J, Orlandi P, Salvatierra O Jr: Promising early outcomes with a novel, complete steroid avoidance immunosuppression protocol in pediatric renal transplantation. *Transplantation* 72: 13, 2001
5. Oaks TE, Wannenberg T, Close SA, Tuttle LE, Kon ND: Steroid-free maintenance immunosuppression after heart transplantation. *Ann Thorac Surg* 72: 102, 2001
6. Cohen M, Pollak R, Garcia J, Mozes MF: Reconstructive surgery for immunosuppressed organ-transplant recipients. *Plast Reconstr Surg* 83: 291, 1989
7. Papadopoulos O, Konofaos P, Chrisostomidis C, Lionaki S, Georgiou P, Vlasik K, Kostakis A: Reconstructive surgery for kidney transplant recipients. *Transplant Proc* 37: 4218, 2005
8. Lee AB, Dupin CL, Colen L, Jones NF, May JW, Chiu ES: Microvascular free tissue transfer in organ transplantation patients: is it safe? *Plast Reconstr Surg* 121: 1986, 2008
9. Linda C: The new face of transplant surgery: a survey on cosmetic surgery in transplant recipients. *Aesthetic Plast Surg* 33: 827, 2009