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전자궁적출술을 시행받은 환자에서 횡복직근 유리피판을 이용한 유방재건술 후 발생한 소장 교액의 증례

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Small Bowel Strangulation after Free TRAM Breast Reconstruction in Post-hysterectomy Patient: A Case Report

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Purpose: The rectus abdominis myocutaneous flap is currently the most commonly used donor site of immediate and delayed breast reconstruction surgery, for its versatility and ease of handling, as well as sufficient blood supply. Despite many advantages of rectus abdominis flap, morbidity of donor site is considered as inevitable shortcoming. The authors recently faced a devastating complication, small bowel obstruction that led to strangulation, after delayed breast reconstruction with free transverses rectus abdominis myocutaneous (TRAM) flap. And we would like to report it, because abdominal pain after TRAM flap is a common symptom and can be overlooked easily.

Methods: A 56-year-old female patient who had history of receiving total abdominal hysterectomy 20 years ago underwent delayed breast reconstruction with TRAM flap transfer. She complained abdominal discomfort and pain from third postoperative day, postoperative small bowel obstruction that arose from strangulated bowel and prompt emergency operation was done.

Results: After resection of the strangulated bowel and reanastomosis, quickly her symptoms were relieved, and there were no further problems during her hospital stay. 7 days after her emergency operation she was discharged.

Conclusion: In patients with previous abdominal surgical history, prolonged ileus can lead to bowel strangulation, so surgeons should always consider the possibility, and must be aware of abdominal symptoms in patients who receive free TRAM flap operations.

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Key Words: TRAM flap, Breast reconstruction, Strangulation, Complication

I. INTRODUCTION

In breast reconstruction, transverse rectus abdominis myocutaneous (TRAM) flap is one of most versatile option up to date. Despite many advantages of TRAM flap, postoperative donor morbidity is considered as inevitable shortcoming and very difficult to overcome in many ways.

The authors recently faced a devastating complication, small bowel obstruction that led to strangulation, after delayed breast reconstruction with free TRAM flap and would like to report it. Prompt reaction to the situation is a must, because if undiagnosed or mistaken as other clinical situation, small bowel strangulation can lead to serious compromise of patient's condition, and maybe even death.

II. CASE

A 56-year-old female patient underwent delayed breast reconstruction with TRAM flap transfer on her left breast, because she had had a modified radical mastectomy due to breast cancer 1 year ago, and at the same time mastopexy was done with periareolar method on her right breast. She had history of receiving total abdominal hysterectomy 20 years ago, by aggravation of pelvic inflammatory disease.

The operation was done with standard method of free TRAM flap transfer without acute complication including hematoma or flap congestion (Fig. 1). During the surgery there was no evidence of peritoneal irritation and dissection depth was not deeper than posterior rectus sheath.

From third postoperative day, she complained about abdominal discomfort and pain combined with heartburn symptoms. On the next day, nevertheless of oral medications, the symptoms got severe and we decided to stop

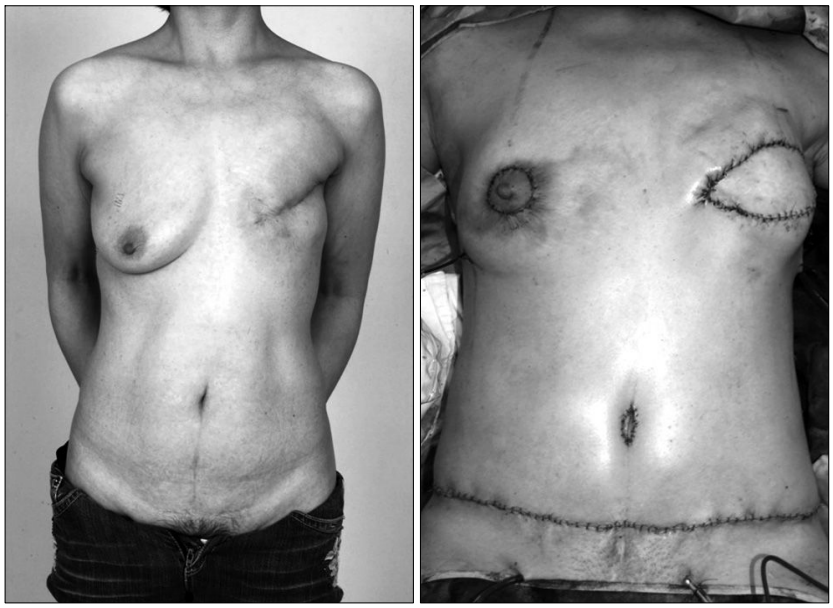

Fig. 1. Preoperative photo of the patient in the case. Notice the vertical hysterectomy scar on her lower abdomen below umbilicus (Left). Immediate postoperative photo. Delayed breast reconstruction with free TRAM flap on her left breast and mastopexy on her right breast was done simultaneously (Right).

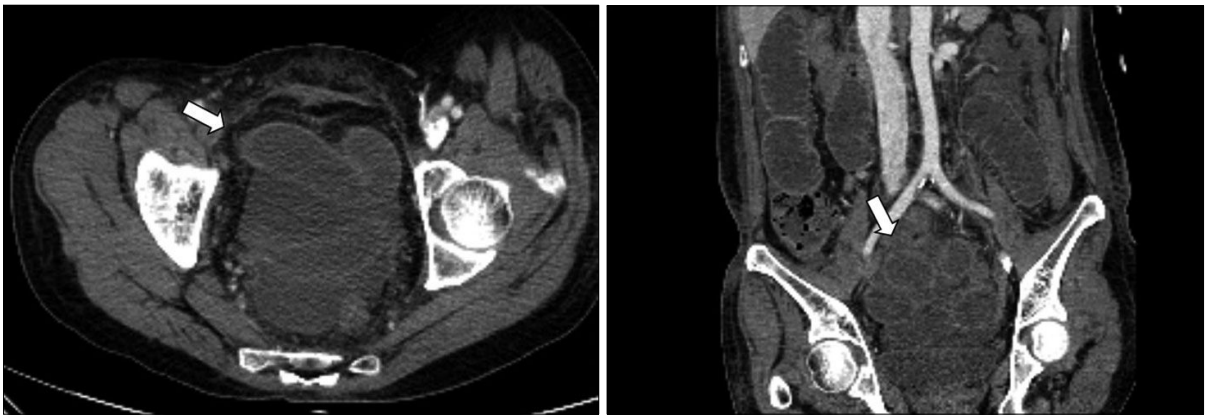

Fig. 2. Abdominal computed tomography scan image before emergency laparotomy surgery. Notice small bowel forming closed loop (White arrow) inside her pelvic cavity, leading to strangulation and ischemia.

her dietary intake. On the evening of fifth postoperative day, mild fever was checked, leukocytosis was present on her blood tests, and abdominal tenderness and rebound tenderness were found on physical examination. Abdominal CT scan was checked, and from it closed loop obstruction of small bowel inside her pelvic cavity was observed (Fig. 2). General surgeons were contacted and prompt emergency operation was done.

There were profuse amount of ascites inside the peritoneal cavity, and inside the inferior portion of peritoneal cavity ileum was strangulated between adhesive band that was formed between sigmoid colon and previous hysterectomy site. After adhesive band ligation and bowel decompression, strangulated bowel was resected and reanastomosis was done (Fig. 3).

After the surgery, quickly her symptoms were relieved, and there were no further event during her hospital stay. 7 days after her emergency operation she was discharged. During 1 year 3 months of follow up period, no other complications have been found since.

III. DISCUSSION

From 1979 when Holmstrom introduced free transverse rectus abdominis myocutaneous flap,[1] the free 'TRAM' flap quickly arose as the most favorite choice in breast

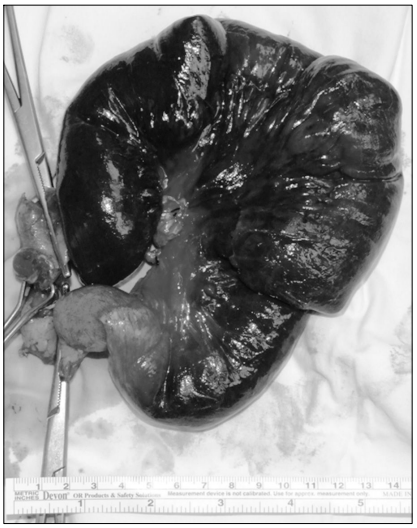

Fig. 3. Photo of resected bowel during emergency bowel resection and reanastomosis surgery.

reconstruction field for its versatility, low failure rate and low risk of donor site morbidity and mortality.

There have been numerous papers that focused on abdominal bulging or hernias from abdominal wall weakening after the flap harvest, but reports about major complications from the surgery were very few. Postoperative occurrence of severe complications such as abdominal fascia rupture or necrotizing fasciitis in critically ill patients have been reported previously,[2-4] but postoperative bowel strangulation after free TRAM flap in a healthy patient with no other preoperative risk has never been reported.

The patient from our case was a healthy patient with no preoperative risk factors, including diabetes, hypertension, obesity or cigarette smoking. She had history of previous gynecologic surgery, total hysterectomy by abdominal approach 20 years ago because of severe pelvic inflammatory disease.

Small bowel strangulation is not a rare complication after general surgical procedures that can cause intraperitoneal irritation, and can lead to severe consequences such as bowel ischemia and peritonitis if early diagnosis and proper treatment is not done.[5] In general, If the bowel becomes strangulated, the patients typically develop severe abdominal pain, which can be either crampy or constant. The abdomen is distended and tender and systemic symptom can be developed signs such as fever, fast heart rate and low blood pressure. Most of small bowel obstructions occur from postsurgical adhesions from gastrointestinal surgery, or gynecologic surgeries that include intraperitoneal manipulations.[6] But, in our case there were no surgical trauma on posterior rectus sheath and peritoneum during rectus abdominis muscle harvest, and therefore no direct causal relationship could be found between flap surgery itself and postoperative bowel strangulation.

Rather, 3 to 4 days of postoperative immobilization period that include maintaining sitting position with abdominal flexion can possibly be a main factor. Small bowel was trapped inside the pelvic dead space that was emptied from previous hysterectomy surgery, forming closed loop obstruction. The findings were confirmed by abdominal CT scanning and also via direct visualization during emergency laparotomy surgery. Opioid drugs may also cause ileus, but it is not the main cause of the strangulation.

From the case, we can assume that even if there were no manipulation of intraperitoneal space and bowel, as well as posterior rectus sheath layer, there can be a possibility of postoperative small bowel obstruction. Edematous bowel from longstanding TRAM free flap surgery can enter the emptied pelvic cavity in patients with previous gynecologic surgery, causing ileus, and furthermore bowel strangulation during the postoperative immobilization period. Because of long surgical time and postoperative immobilization period ileus in TRAM flap patients are not rare.[7] But in patients with previous abdominal surgical history, prolonged ileus can lead to bowel strangulation, and even intestinal necrosis or generalized peritonitis if diagnosis and proper treatment is not done promptly. Surgeons should always consider the possibility, and be aware of abdominal symptoms in patients who receive free TRAM flap operations.

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