



Reconstruction of A Huge Soft Tissue Deffect in Flank Region Using Rectus Femoris Flap

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Abstract

Introduction:Coverage of full-thickness large flank defect is a challenging procedure for surgeons. The rectus femoris (RF) muscle flap is an excellent donor muscle for many reconstructions. The vascularized rectus femoris (RF) muscle flap has been proved to be effective to cover infected vascular grafts in the flank region. Outcome of the treatment can be evaluated by evaluating the patient daily activity. **Case Report:**This was a case report conducted on patient with huge soft tissue deffect in flank region. A 62 years old male with large defect of the right flank region due to infection of the abdominal cavity after appendectomy 2 months ago. The wound size 15 x 7 x 7 cm, with the base is bowel, with serohemoragic discharge. Then perform debridement and rectus femoris flap. A month after operation, the patient came to the Sardjito General Hospital with defect of the right hypogastric region and then VAC was performing in this patient. Two month after VAC, the wound was covered by granulating tissue and then the patient underwent FTSG. A month after the second operation, the patient came to outpatient clinic, able to walk, with the condition of the wound was good, no visible sign of infection. **Conclusion:**From this case report shows that rectus femoris flap has a good result to coverage the huge soft tissue defect in flank region. The patient can perform a simple daily living.

Keywords: *Rectus femoris, Flank defect, Flap.*

Introduction

A large defect in the anterior area of the abdominal wall is a challenge for many surgeons and complicated technical problems. Any defect in the stomach that cannot be closed completely will lead to permanent disability and cause complex problems[1, 2]. Abdominal wall defects are usually the result of trauma, infection or surgery that the patient has been through before.

Different surgical methods have been used to overcome this defect. Various muscular and myocutaneous flaps such as tensor fascia lata, rectus femoris, rectus abdominis and latissimus dorsi have been reported in some literature as management of defects in the abdominal wall [2]. In this case report, a reconstruction of patients with broad soft tissue defects in the pelvis is presented. Closing large, full-thickness defects in the pelvic area is a challenging

procedure for surgeons especially for Orthopedics and Traumatology specialists. Abdominal wall reconstruction requires anatomical analysis, evaluation of reconstructive goals, use of various surgical techniques and reconstructive strategies to restore the integrity and aesthetics of the abdominal wall. The combination of inflammation and contamination might result in delayed reconstruction [1, 2].

Reconstruction of extensive defects with local flaps or distant lateral flaps often has limitations in terms of the difficulty of controlling infection, a factor in nutritional disorders experienced by the patient resulting in progression of poor wound healing and flap failure due to inappropriate arc of rotation [1]. Flap rectus femoris muscle (RF) which is vascularized is an excellent muscle donor for many reconstructions. Flap using Rectus Femoris has proven to be

effective in covering infected defects in the pelvic region [1-3]. Treatment results can be evaluated by evaluating the patient's daily activities.

Case Presentation

A 45-year-old male came to the Outpatient Clinic of Dr. Sardjito General Hospital, Yogyakarta with extensive defects in the lower right abdominal area close to the right iliac wing.

The defect is accompanied by exposure to the visceral organ, exposure to the right wing iliac bone and malnutrition. The patient developed an infection in the abdominal cavity after undergoing Appendectomy surgery 2 months before the patient came to the hospital. The size of the defect in the patient's abdominal wall is 15x7x7 cm, with the base of the wound being the intestine and the wound issuing serohemorhagic discharge.

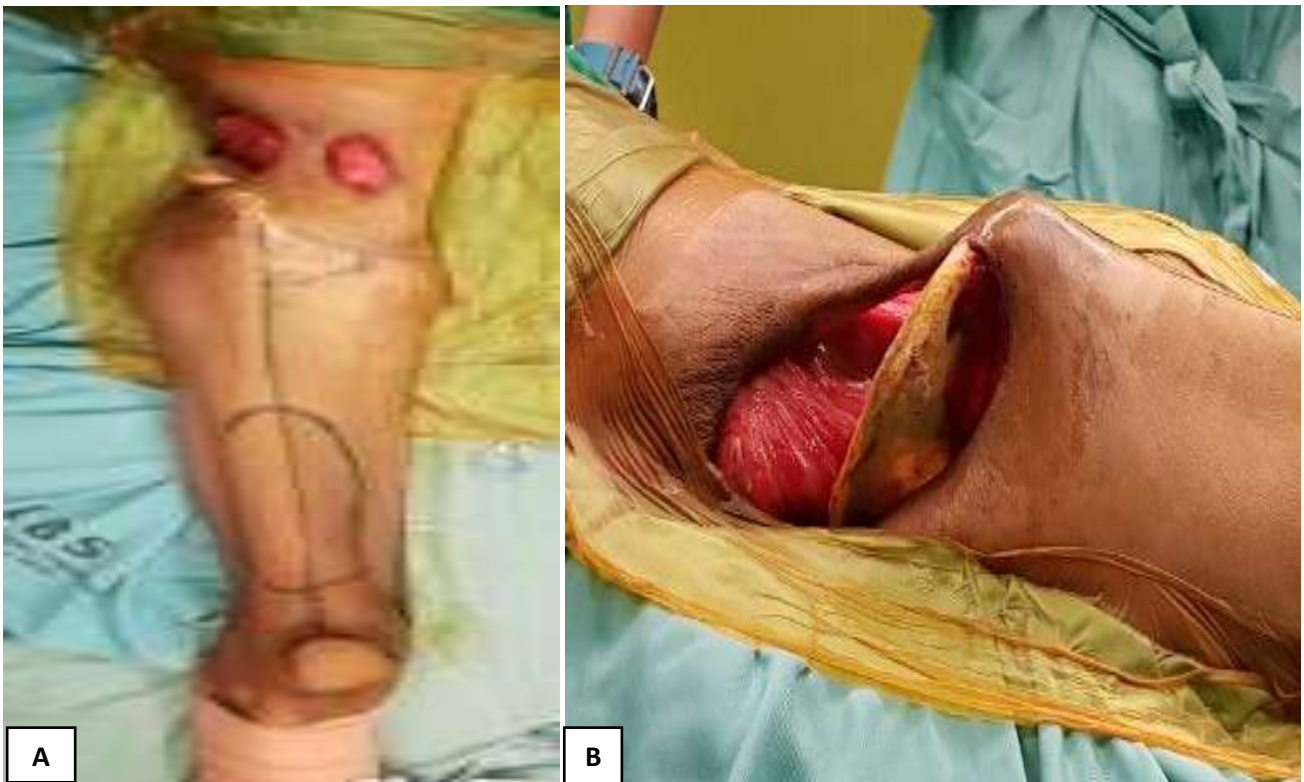


Fig. 1: Preoperative patient condition. A. The patient appears AP with right inguinal defects and broad blueprints on the donorsite area. B. The patient's defect in the right inguinal shows a huge defect with exposure to the iliac wing and visceral organs



Fig. 2: Harvesting rectus femoris muscle



Figure 3: Hernia mesh installation as protection and reinforcement of abdominal wall



Fig. 4: Postoperative patient's condition. A. The patient appears AP with a right inguinal defect that has been closed using the Rectus Femoris Flap, leaving little injury to the anterior abdominal wall and modern dressing dressing B. The patient's defect appears lateral



Fig. 5: The patient's condition 5 days after the operation was performed, the operation wound was closed, there was no visible sinus drainage and other signs of infection. The flap seems fiable

The patient returned 2 months after surgery and was hospitalized again to close the

granulation wound in the right inguinal region by using STSG. The right inguinal recipient site wound looked good.



Fig. 6 : Patient's condition Post STSG surgery closure of the granulation wound in the area of inguinal dextra



Figure 7: Patient's wound condition 4 months Post Surgery

Outcome

Initially the patient underwent treatment on the ward with wound care using modern dressing. Then the patient underwent laparotomy, exploration, removal of adhesions and debridement by the Digestive Surgery Department. The patient was again treated in the ward and received treatment in the form of infection control by antibiotic injection by the Tropical Medicine Division of the Internal Medicine Department and the condition for malnutrition was evaluated by a Nutritionist.

After the infection subsided, we performed debridement, Iliac wing osteotomy and Rectus Femoris flap. The patient recovered well after surgery. 4 months after surgery, the patient came to the Outpatient Clinic, with good flap results, and the patient was also able to stand up and there were no signs of infection.

Discussion

This case is a rare case for an Orthopedic Surgeon and is challenging to do. This case is a difficult case and requires an intense approach to managing patients. For patients with peritonitis, malnutrition, infection, and severe abdominal defects, it is necessary to manage the multi-disciplinary department to manage the patient.

In these patients, the use of Rectus femoris flap is the best technique to choose because it is rich in vascularization, rotation direction, skin coverage and strength. The rectus femoris muscle flap is famous for its constant and reliable neurovascular pedicles [4]. Harvesting Rectus femoris muscle is technically easy and quick to do. Flaps can be taken as pure muscle flaps, myofascial units or myocutaneous flaps. Pedicle flaps are used for the reconstruction of the abdominal wall

[5,6-9] and to cover defects in the inguinal, infrainguinal, abdominal, groin, and trochanteric or ischadic regions [10, 7, 8]. While the flexibility and reliability of the pedicle flap of the rectus femoris muscle are not disputed, morbidity Donor sites are controversially explained by different authors. But functionally there is no significant deficit in terminal knee extension [10].

Patients have regained excellent strength and have been able to stand and move their knees and legs within 4 months after surgery. Wei et al. reported no significant loss of foot function and minimal patient complaints [11]. Rohrich et al. described rectus muscle harvesting as related to some donor morbidity, in particular, weakening of the quadriceps function [9].

Freedman et al. note that rectus transposition will not permanently affect active knee extension, especially if the Quadriceps muscles are left centered[5].

Conclusion

The complex reconstruction of the anterior abdominal wall defect presents doctors with unique reconstructive challenges. With the right techniques available today, it is possible to reconstruct the entire stomach safely. Pedicled rectus femoris flap is a safe and valuable flap. The donor site morbidity is significant and may go deeper than simple muscle loss but this can be very well tolerated. Consent must be obtained from the patient regarding impaired sensitivity and loss of strength in the thigh and recovery period that lasts several weeks. Postoperative training programs can improve results. This case report shows that the rectus femoris flap has good results to cover large soft tissue damage in the pelvic region. Patients can do simple daily activities[12-23].

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