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The long-term outcomes of early abdominal wall reconstruction by bilateral anterior rectus abdominis sheath turnover flap method in critically ill patients requiring open abdomen

Background: In a previous study, we reported the usefulness of early abdominal wall reconstruction using bilateral anterior rectus abdominis sheath turnover flap method (turnover flap method) in open abdomen (OA) patients in whom early primary fascial closure was difficult to achieve. However, the long-term outcomes have not been elucidated. **Aim:** In the present study, we aimed to evaluate the procedure, particularly in terms of ventral hernia, pain and daily activities. **Methods:** Between 2001 and 2013, 15 consecutive patients requiring OA after emergency laparotomy and in whom turnover flap method was applied were retrospectively identified. The long-term outcomes were evaluated based on medical records, physical examinations, CT imaging and a ventral hernia pain questionnaire (VHPQ). **Results:** The turnover flap method was applied in 2 trauma and 13 non-trauma patients. In most of cases, primary fascial closure could not be achieved due to massive visceral edema. The turnover flap method was performed for abdominal wall reconstruction at the end of OA. The median duration of OA was 6 (range: 1- 42) days. One of the 15 patients died of MOF during initial hospitalization after the performance of the turnover flap method. Fourteen patients survived, and although wound infection was observed in 3 patients, none showed enteric fistula, abdominal abscess, graft infection, or ventral hernia during hospitalization. However, it was found that 1 patient developed ventral hernia during follow-up at an outpatient visit. Nine of 14 patients were alive and able to be evaluated with a VHPQ (follow-up period: median 10 years; range 3-15 years). Seven out of 9 patients were satisfied with this procedure, and none complained of pain or were limited in their daily activities. **Discussion:** Based on the results of this study, early abdominal reconstruction using the turnover flap method can be considered to be safe and effective as an alternative technique for OA patients in whom primary fascial closure is considered difficult to achieve.