

Abstract

Purpose: Muscle loss negatively affects gastrectomy prognosis. However, muscle loss is recognized as a systemic change, and individual muscle function is often overlooked. We investigated changes in the muscle volume of individual muscles after gastrectomy to identify clues for prognostic factors and optimal rehabilitation programs. **Methods:** Patients who underwent R0 gastrectomy for Stage I gastric cancer at our hospital from 2015 to 2021 were retrospectively selected to minimize the effects of malignancy and chemotherapy. Trunk muscle volume was measured by computed tomography to analyze body composition changes. Statistical analysis was performed to identify risk factors related to body composition changes. **Results:** We compared the preoperative and 6-month postoperative conditions of 59 patients after gastrectomy. There was no difference in the psoas major muscle, a conventional surrogate marker of sarcopenia. There were significant decreases in the erector spinae ($p=0.01$) and lateral abdominal ($p=0.01$) muscles, and a significant increase in the rectus abdominis muscle ($p=0.02$). No significant correlation was found between these muscle changes and nutritional status. **Conclusion:** Body composition imbalance may serve as a new indicator of the general condition of patients after gastrectomy. Rehabilitation to correct this imbalance may improve prognosis after gastrectomy.

Keywords: Sarcopenia, Skeletal muscle, Gastric cancer, Gastrectomy, Erector spinae muscle