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Skeletal muscle depletion and postoperative complication after pancreaticoduodenectomy

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Purpose:

The sarcopenia which is skeletal muscle depletion has been reported to be associated with postoperative recurrence as well as postoperative complications. The aim of this study was to examine whether sarcopenia affects postoperative complications and cancer recurrence.

Methods:

From January 2010 to December 2016, the data of 128 patients who underwent pancreaticoduodenectomy for pancreatic ductal adenocarcinoma, distal bile duct cancer, or ampulla of Vater cancer were consecutively collected. Sarcopenia was validated by lumbar skeletal muscle index, and mean muscle attenuation (Hounsfield units) by computed tomography (CT). The index was measured before surgery, within 1 month after surgery, and between 2 months and 8 months after surgery. The risk factors of postoperative complication and tumor recurrence were investigated.

Results:

The median age was 69 years (range, 23 to 95). The value obtained by dividing the measured muscle mass by BMI was associated with both postoperative general complications and severe complications in multivariate analysis ($p = 0.008$ and $p = 0.033$, respectively). However, the muscle mass index was not associated with clinically relevant pancreatic fistula ($p = 0.253$). The index measured between 2 months and 8 months after surgery was lower than that measured before surgery. However, the index was not associated with cancer recurrence or death in the survival analysis.

Conclusion:

The skeletal muscle index measured by CT image was associated with general complication but not pancreatic fistula or survival after pancreaticoduodenectomy.