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Preoperative Physical Function Is Associated With Non-SSI Postoperative Complications After Reconstructive Surgery for Oral Cancer: A Risk Stratification Approach

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Abstract

Background

Postoperative complications after reconstructive surgery for oral cancer can delay recovery and prolong hospitalization. Although sarcopenia and frailty have been associated with adverse surgical outcomes, evidence remains limited regarding whether simple preoperative physical performance tests can stratify the risk of postoperative complications other than isolated surgical site infection. This study aimed to investigate the association between preoperative physical function and non-SSI postoperative complications after oral cancer reconstruction and to develop a simple risk stratification model.

Methods

This single-center retrospective cohort study included 129 patients who underwent reconstructive surgery for oral cancer and had available preoperative physical function data. Preoperative physical function was assessed 1 or 2 days before surgery using grip strength, single-leg stance time, the five-times sit-to-stand test, Timed Up and Go, gait speed, and 4-minute walking distance. The primary outcome was JCOG Grade ≥ 2 non-SSI postoperative complications, excluding isolated SSI but including systemic and flap-related complications. Univariable and multivariable logistic regression analyses were performed. A risk score was developed using clinically applicable cutoff values for single-leg stance time and Timed Up and Go.

Results

JCOG Grade ≥ 2 non-SSI postoperative complications occurred in 63 patients, and JCOG Grade ≥ 3 complications occurred in 32 patients. Patients with JCOG Grade ≥ 2 complications had significantly shorter single-leg stance time, longer Timed Up and Go time, and shorter 4-minute walking distance. In multivariable analysis, decreased single-leg stance time remained independently associated with JCOG Grade ≥ 2 complications after adjustment for age, sex, BMI, operative time, intraoperative blood loss, and preoperative chemotherapy. This association was also observed for JCOG Grade ≥ 3 complications. The complication rates according to the risk score were 20.6%, 54.2%, and 63.8% in the 0-, 1-, and 2-point groups, respectively.

Conclusions

Decreased preoperative single-leg stance time was independently associated with clinically relevant non-SSI postoperative complications after oral cancer reconstruction. A simple risk score combining single-leg stance time and Timed Up and Go may help identify patients at increased risk and support individualized perioperative management.

Background

In 2022, oral cancer was estimated to account for approximately 400,000 new cases and 190,000 deaths worldwide, representing approximately 2.0% of all cancer cases and cancer-related deaths [1]. Oral cancer is characterized by locally aggressive invasion and a propensity for cervical lymph node metastasis [2, 3]. Although oral cancers arise at relatively accessible and visible sites, including the tongue, gingiva, and buccal mucosa, many patients still present with locally advanced disease. In such cases, extensive tumor resection followed by reconstructive surgery is often required to restore oral form and function [4].

Reconstructive surgery for oral cancer is now commonly performed using free or pedicled flaps. These techniques have markedly improved the restoration of oral function and facial form after extensive tumor resection [4, 5]. However, reconstructive procedures are highly invasive, often require prolonged operative time, and are frequently followed by postoperative pain, intensive monitoring, and temporary restriction of physical activity [6, 7].

Postoperative complications after oral cancer reconstruction include systemic complications, such as pneumonia and delirium, as well as surgical site infection (SSI) [8, 9]. In addition, flap-related complications, including venous congestion, vascular compromise requiring reoperation, flap necrosis, and flap failure, are distinctive and clinically important complications of reconstructive surgery [10, 11]. These adverse events may delay postoperative oral intake and wound healing and can contribute to prolonged hospitalization [12]. Therefore, identifying patients at high risk for postoperative complications other than isolated SSI may be important for optimizing perioperative management after oral cancer reconstruction.

Previous studies have reported that sarcopenia and frailty are associated with postoperative complications and adverse outcomes in patients with oral cancer [13, 14]. Nakamura et al. reported that sarcopenia, defined by reduced skeletal muscle mass index at the L3 level, was associated with the occurrence of SSI after oral cancer reconstruction [15]. However, most previous studies have focused on radiologically defined sarcopenia, frailty indices, or SSI-related outcomes, whereas evidence remains limited regarding whether simple preoperative physical performance tests can predict postoperative complications other than isolated SSI after oral cancer reconstruction. Therefore, this study aimed to investigate the association between preoperative physical function and non-SSI postoperative complications after oral cancer reconstruction and to develop a simple preoperative risk stratification model.

Materials and Methods

Study cohorts

We conducted a single-center retrospective cohort study of consecutive patients who underwent reconstructive surgery for oral cancer at the Departments of Oral Surgery and Plastic Surgery, Saitama

Cancer Center, between September 2018 and March 2026. During the study period, 147 patients underwent reconstructive surgery for oral cancer. Patients with missing preoperative physical function data were excluded. Finally, 129 patients met the eligibility criteria and were included in the final analysis (Fig. 1).

Perioperative management after reconstruction surgery

In our department, patients were routinely managed in the high care unit for 3–4 days after reconstructive surgery. Prophylactic antibiotics were administered perioperatively and generally continued for up to 48 hours after surgery. Flap viability was monitored for the first postoperative week using pin-prick testing and transcutaneous Doppler assessment of blood flow. When vascular compromise was suspected, urgent evaluation and reoperation were considered.

Perioperative thromboprophylaxis consisted of intraoperative intermittent pneumatic compression, postoperative unfractionated heparin initiated 48 hours after surgery, and mobilization as clinically feasible. Lower-extremity ultrasonography was routinely performed within 7 days after surgery to screen for deep vein thrombosis.

Blood tests and chest X-rays were routinely performed during hospitalization to monitor for postoperative pneumonia and systemic infection. Postoperative pneumonia was diagnosed based on clinical symptoms, inflammatory findings, and radiographic findings on chest X-ray or computed tomography. When postoperative delirium was suspected based on clinical symptoms, patients were evaluated by psychiatrists, and environmental adjustment and pharmacological treatment were provided as needed.

Postoperative complications were evaluated according to the Japan Clinical Oncology Group postoperative complication criteria. The evaluation period was defined as within 30 days after surgery or throughout the hospital stay, whichever was longer.

Data collection

Baseline patient characteristics were retrospectively collected from electronic medical records, including age, sex, body mass index (BMI), antithrombotic agent use, history of preoperative chemotherapy, and comorbidities such as hypertension and diabetes mellitus. Operative variables included operative time, intraoperative blood loss, blood transfusion, time to postoperative ambulation, and the type of reconstructive procedure. Reconstructive procedures were categorized according to the type of flap used.

Preoperative physical function assessment

Preoperative physical function was assessed 1 or 2 days before surgery in the final analytic cohort. The assessment included grip strength, single-leg stance time, the five-times sit-to-stand test, Timed Up and Go, gait speed, and 4-minute walking distance. All assessments were performed by trained staff according to a standardized protocol.

Grip strength and single-leg stance time were measured bilaterally whenever possible. For grip strength, the mean of both sides was used when bilateral measurements were available, whereas the available unilateral value was used when only one side was measured. For single-leg stance time, the mean of both sides was used for analysis. Single-leg stance time was capped at 30 seconds. The five-times sit-to-stand test was defined as the time required to stand up from and sit down on a chair five consecutive times without using the arms. Timed Up and Go was measured as the time required to stand up from a chair, walk 3 m, turn around, return, and sit down. Gait speed was measured over a 10-m walking course and expressed in meters per second, and 4-minute walking distance was defined as the total distance walked in 4 minutes.

Study design and statistical analysis

Postoperative complications were evaluated according to the Japan Clinical Oncology Group postoperative complication criteria [16]. In this study, the primary outcome was defined as non-SSI postoperative complications of JCOG Grade 2 or higher. Isolated surgical site infection was excluded from the primary outcome because SSI after oral cancer reconstruction is strongly influenced by local wound conditions, contamination from the oral cavity, and surgical factors. In contrast, postoperative complications other than isolated SSI, including systemic and flap-related complications, may more broadly reflect host vulnerability, physiological reserve, and postoperative recovery capacity. Systemic complications and flap-related complications were therefore included as non-SSI postoperative complications. For descriptive presentation of complication components, each patient was assigned to a single representative complication category. In patients with multiple non-SSI postoperative complications, the complication with the highest JCOG grade was selected as the representative event. If two or more complications had the same highest JCOG grade, the complication that occurred first after surgery was counted as the representative event.

All variables were first compared between patients with JCOG Grade < 2 and those with JCOG Grade ≥ 2 in the overall cohort. Categorical variables were compared using the chi-square test or Fisher's exact test, as appropriate, and continuous variables were compared using the Mann–Whitney U test. Continuous variables are presented as medians with interquartile ranges, and categorical variables are presented as numbers and percentages.

Univariable logistic regression analyses were performed to estimate odds ratios (ORs) and 95% confidence intervals (CIs) for clinical factors and preoperative physical function measures associated with non-SSI postoperative complications. For preoperative physical function measures, ORs were calculated per 1-standard deviation change in the direction of impaired function.

Multivariable logistic regression analyses were then performed to identify independent associations between preoperative physical function and non-SSI postoperative complications. Model 1 was adjusted for age, sex, BMI, operative time, and intraoperative blood loss. Model 2 was additionally adjusted for preoperative chemotherapy.

Receiver operating characteristic curve (ROC) analyses were performed for preoperative physical function measures that were associated with postoperative complications, and clinically applicable thresholds were determined based on ROC results and clinical interpretability. Based on these thresholds, a simple risk score was developed, and the incidence of non-SSI postoperative complications was compared according to the risk score.

As a sensitivity analysis, the same analyses were performed for severe non-SSI postoperative complications, defined as JCOG Grade 3 or higher.

All statistical analyses were performed using EZR software version 1.70 (Jichi Medical University, Tochigi, Japan) [17] and Graphical visualization, including forest plots and risk stratification figures, was generated using GraphPad Prism Pro version 11 (GraphPad Software, Boston, MA, USA). All tests were two-sided, and P values < 0.05 were considered statistically significant.

Ethics

This study was approved by the Institutional Review Board of Saitama Cancer Center (approval nos. 1096 and 2238). The requirement for informed consent was managed by an opt-out approach because of the retrospective nature of the study.

Results

A total of 147 consecutive patients who underwent reconstructive surgery for oral cancer during the study period were assessed for eligibility. After excluding 18 patients with missing preoperative physical function data, 129 patients were included in the final analysis (Fig. 1). JCOG Grade ≥ 2 non-SSI postoperative complications were observed in 63 patients (48.8%), and JCOG Grade ≥ 3 non-SSI postoperative complications were observed in 32 patients (24.8%).

Baseline patient characteristics and perioperative variables according to the presence or absence of JCOG Grade ≥ 2 non-SSI postoperative complications are summarized in Table 1A. Patients with JCOG Grade ≥ 2 non-SSI postoperative complications had significantly greater intraoperative blood loss than those without these complications (466 [299–674] mL vs. 346 [230–520] mL, p = 0.036). In addition, patients with JCOG Grade ≥ 2 complications tended to be older (p = 0.061), were more frequently male (p = 0.054), and tended to have longer operative time (p = 0.078). No significant differences were observed in other baseline or perioperative variables between the groups. The patient-level distribution of non-SSI postoperative complications is shown in Table 1B. Among patients with JCOG Grade ≥ 2 non-SSI postoperative complications, the major representative components were pneumonia, postoperative

delirium, seroma, reoperation for vascular compromise, and flap necrosis or flap failure (Table 1B). For patients with multiple complications, the complication with the highest JCOG grade was selected as the representative event; therefore, each patient was counted only once.

Next, we compared preoperative physical function between patients with and without JCOG Grade ≥ 2 non-SSI postoperative complications (Table 2). Patients with JCOG Grade ≥ 2 non-SSI postoperative complications had significantly shorter single-leg stance time (10.0 [8.5–20.0] s vs. 20.0 [10.0–20.0] s, p = 0.004), longer Timed Up and Go time (7.59 [6.51–9.16] s vs. 6.79 [6.06–7.83] s, p = 0.008), and shorter 4-minute walking distance (308 [266–331] m vs. 322 [292–347] m, p = 0.042) than those without complications. Gait speed tended to be lower in patients with complications, although the difference did not reach statistical significance (1.47 [1.35–1.50] m/s vs. 1.50 [1.40–1.60] m/s, p = 0.083). No significant differences were observed in grip strength or five-times sit-to-stand test results between the groups.

In the univariable logistic regression analysis, older age was significantly associated with JCOG Grade ≥ 2 non-SSI postoperative complications (OR, 1.03; 95% CI, 1.00–1.07; p = 0.037). Among preoperative physical function measures, shorter single-leg stance time (OR per 1-SD decrease, 1.69; 95% CI, 1.16–2.46; p = 0.006), prolonged Timed Up and Go time (OR per 1-SD increase, 1.50; 95% CI, 1.03–2.19; p = 0.033), and slower gait speed (OR per 1-SD decrease, 1.52; 95% CI, 1.01–2.29; p = 0.042) were significantly associated with JCOG Grade ≥ 2 non-SSI postoperative complications (Table 3, Fig. 2).

Based on these findings, multivariable logistic regression analyses were performed to evaluate whether preoperative physical function measures were independently associated with postoperative complications after adjustment for clinical and operative factors.

In the multivariable logistic regression analysis, two adjustment models were used to evaluate the independent association between preoperative physical function and JCOG Grade ≥ 2 non-SSI postoperative complications. Model 1 was adjusted for age, sex, BMI, operative time, and intraoperative blood loss, whereas Model 2 was additionally adjusted for preoperative chemotherapy (Table 4A).

Among the preoperative physical function measures, only shorter single-leg stance time remained independently associated with JCOG Grade ≥ 2 non-SSI postoperative complications in both models. The odds ratios per 1-SD decrease in single-leg stance time were 1.61 (95% CI, 1.07–2.44; p = 0.023) in Model 1 and 1.56 (95% CI, 1.03–2.37; p = 0.036) in Model 2. Other physical function measures, including Timed Up and Go, were not significantly associated with complications after adjustment (Table 4B).

Finally, because single-leg stance time and Timed Up and Go are simple and clinically feasible measures of static balance and mobility, ROC curve analyses were performed for these measures to determine clinically applicable cutoff values (Supplementary Fig. 1). Using these cutoff values, a simple risk score based on preoperative physical function was developed, and its association with JCOG Grade ≥ 2 non-SSI postoperative complications was evaluated (Table 5A).

The complication rates according to the risk score were 20.6% in the 0-point group, 54.2% in the 1-point group, and 63.8% in the 2-point group. Compared with the 0-point group, the risk of complications was significantly higher in the 1-point group (adjusted OR, 5.13; 95% CI, 1.75–15.03; p = 0.003) and the 2-point group (adjusted OR, 4.84; 95% CI, 1.53–15.33; p = 0.007). In addition, each 1-point increase in the risk score was associated with a 2.07-fold increase in the odds of JCOG Grade ≥ 2 non-SSI postoperative complications (95% CI, 1.20–3.59; p = 0.009). These findings suggest that a simple risk score based on single-leg stance time and Timed Up and Go may help stratify the risk of non-SSI postoperative complications after oral cancer reconstruction (Table 5B, Fig. 3).

As a sensitivity analysis, we further evaluated JCOG Grade ≥ 3 non-SSI postoperative complications. JCOG Grade ≥ 3 complications were observed in 32 patients (24.8%). Patients with JCOG Grade ≥ 3 complications had significantly shorter single-leg stance time than those without Grade ≥ 3 complications (10.0 [8.0–15.9] s vs. 15.5 [10.0–20.0] s, p = 0.009), whereas other physical function measures did not differ significantly between the groups. In multivariable logistic regression analysis, decreased single-leg stance time remained independently associated with JCOG Grade ≥ 3 complications after adjustment for age, sex, BMI, operative time, blood loss, and preoperative chemotherapy (OR 1.84, 95% CI 1.12–3.02, p = 0.016). In the risk score analysis, the incidence of JCOG Grade ≥ 3 complications was 11.8% in score 0, 29.2% in score 1, and 29.8% in score 2. Patients with any impairment had a significantly higher risk of JCOG Grade ≥ 3 complications than those with neither impairment (adjusted OR 3.58, 95% CI 1.04–12.33, p = 0.044) (Supplementary Tables 1–4, Supplementary Figs. 2 and 3).

Discussion

Assessment of postoperative complications is essential for evaluating surgical outcomes and optimizing perioperative management in cancer surgery. The Japan Clinical Oncology Group postoperative complication criteria, which are based on the Clavien–Dindo classification, provide standardized definitions and severity grading for a broad range of surgical complications and have been used in cancer surgery trials [16]. In the present study, we applied these criteria to patients undergoing reconstructive surgery for oral cancer and demonstrated that JCOG Grade ≥ 2 non-SSI postoperative complications occurred in nearly half of the patients. This finding indicates that clinically relevant complications requiring therapeutic intervention are common after oral cancer reconstruction, even when isolated SSI is excluded from the outcome [18–20]. Previous studies have also reported that pneumonia and postoperative delirium are frequent complications after oral cancer surgery and reconstruction [9, 21]. Although this study was not designed to evaluate predictors of each individual complication type, the patient-level distribution of non-SSI postoperative complications showed that pneumonia, postoperative delirium, and flap-related complications were frequent components of the outcome. These findings are consistent with previous reports showing that pulmonary complications and delirium are common after oral cancer surgery and reconstruction.

The most important and novel finding of this study is that a simple preoperative physical function test was associated with clinically relevant non-SSI postoperative complications after reconstructive surgery for oral cancer. Among the physical function measures evaluated, decreased single-leg stance time was independently associated with JCOG Grade ≥ 2 non-SSI postoperative complications after adjustment for clinical and operative factors. This association remained consistent in the sensitivity analysis for JCOG Grade ≥ 3 complications, suggesting that single-leg stance time may serve as a practical marker of host vulnerability and reduced functional reserve in patients undergoing oral cancer reconstruction.

Single-leg stance time is one of the simplest physical performance tests and requires no special equipment. It reflects static balance, postural control, lower-limb muscle function, and neuromuscular coordination [22, 23]. In the present study, decreased single-leg stance time was independently associated with JCOG Grade ≥ 2 non-SSI postoperative complications, and this association remained consistent in the analysis of JCOG Grade ≥ 3 complications. These findings suggest that single-leg stance time may capture preoperative functional reserve and host vulnerability in patients undergoing oral cancer reconstruction. This association may be particularly relevant in the setting of reconstructive surgery for oral cancer, which is highly invasive and is frequently followed by postoperative pain, intensive monitoring, and temporary restriction of physical activity. Patients with impaired balance and reduced functional reserve before surgery may be more susceptible to postoperative inactivity, delayed mobilization, and delayed recovery. These conditions may increase the risk of clinically relevant complications, including pneumonia, delirium, and deterioration of general condition. Thus, single-leg stance time may be useful not because it directly causes or prevents individual complications, but because it provides a simple and practical measure of patient-level vulnerability before surgery.

Recent studies have increasingly focused on the relationship between sarcopenia and outcomes after cancer treatment. Sarcopenia has been associated with postoperative complications, prolonged hospital stays, and poor prognosis across various surgical populations [24]. In head and neck cancer surgery, several studies have also shown that sarcopenia is associated with postoperative complications, including surgical site infection, after tumor resection and reconstructive surgery [13–15, 25]. However, most of these studies have evaluated sarcopenia based on radiologically assessed skeletal muscle mass, such as CT-based skeletal muscle index. Evidence remains limited regarding whether simple preoperative physical performance tests are associated with postoperative complications after oral cancer reconstruction. In this context, the present study provides clinically relevant evidence that decreased preoperative physical function, particularly shorter single-leg stance time, is associated with JCOG Grade ≥ 2 and Grade ≥ 3 non-SSI postoperative complications after reconstructive surgery for oral cancer. Previous studies in patients undergoing gastrointestinal cancer surgery have reported that impaired preoperative physical function is associated with postoperative complications, which supports the findings of the present study [26, 27]. Therefore, our results extend the concept of sarcopenia- or frailty-related surgical vulnerability to simple, bedside-assessable physical performance measures in oral cancer reconstruction.

Although Timed Up and Go was significantly associated with JCOG Grade ≥ 2 non-SSI postoperative complications in the univariable analysis, it was not an independent factor in the multivariable models. Nevertheless, Timed Up and Go remains a clinically useful measure because it reflects dynamic mobility, including standing up, walking, turning, and sitting down. In contrast, single-leg stance time mainly reflects static balance, postural control, and lower-limb functional reserve. Therefore, the combination of these two simple tests may capture complementary aspects of preoperative physical function. In the present study, a risk score based on single-leg stance time and Timed Up and Go successfully stratified the risk of JCOG Grade ≥ 2 non-SSI postoperative complications. The complication rate increased from 20.6% in patients with neither impairment to 54.2% in those with one impairment and 63.8% in those with both impairments. This finding suggests that even the presence of a single impairment in balance or mobility may identify patients at increased risk for clinically relevant postoperative complications after oral cancer reconstruction. Because both tests require no special equipment, are easy to perform, and can be completed shortly before surgery, this risk score may be readily incorporated into routine preoperative assessment.

Clinically, this simple risk stratification approach may help identify patients who require more careful perioperative management, including respiratory care, delirium prevention, early rehabilitation planning, nutritional optimization, and closer postoperative monitoring. Although the present study does not prove that improving preoperative physical function reduces postoperative complications, our findings provide a rationale for future prospective studies evaluating whether prehabilitation or risk-tailored perioperative management can improve postoperative outcomes in patients undergoing oral cancer reconstruction.

Limitations

This study has several limitations. First, this was a single-center retrospective study with a limited sample size, and external validation was not performed. Second, patients with missing preoperative physical function data were excluded, which may have introduced selection bias. Third, the proposed risk score was developed and evaluated within the same cohort; therefore, its performance may be overestimated. Accordingly, this score should be regarded as an exploratory risk stratification tool rather than a definitive prediction model. To address this limitation, a prospective validation study of the proposed score has been approved and is currently ongoing at our institution. Fourth, although isolated SSI was excluded from the primary outcome, non-SSI postoperative complications included heterogeneous events, such as systemic and flap-related complications. Flap-related complications are influenced by surgical, vascular, and local wound factors; therefore, the present study does not demonstrate a direct causal relationship between preoperative physical function and individual flap-related complications. Finally, this study did not evaluate whether interventions to improve preoperative physical function can reduce postoperative complications. Further prospective studies with external validation are needed to confirm the clinical utility of this risk score and to determine whether prehabilitation or risk-tailored perioperative management can improve postoperative outcomes.

Conclusions

In conclusion, preoperative physical function, particularly single-leg stance time, was associated with clinically relevant non-SSI postoperative complications after reconstructive surgery for oral cancer. The combination of single-leg stance time and Timed Up and Go provided a simple and feasible risk stratification tool that may help identify patients at increased risk before surgery. Incorporating these physical performance tests into routine preoperative assessment may contribute to individualized perioperative management and provide a basis for future prehabilitation strategies in oral cancer reconstruction.

Abbreviations

SSI
surgical site infection
JCOG
Japan Clinical Oncology Group
BMI
body mass index
ROC
receiver operating characteristic
OR
odds ratio
CI
confidence interval.

Declarations

Ethical approval and consent to participate

This study was conducted in accordance with the Declaration of Helsinki and was approved by the Institutional Review Board of Saitama Cancer Center (approval nos. 1096 and 2238). The requirement for individual written informed consent was waived by the Institutional Review Board of Saitama Cancer Center because of the retrospective observational nature of the study. Information regarding the study was disclosed to eligible patients, and participants were given the opportunity to opt out.

Consent for publications

Not applicable. This manuscript does not contain any identifiable individual patient data, images, or videos.

Availability for data and materials

The data supporting the findings of this research are available from the corresponding author upon reasonable request.

Competing Interests

All authors declare that there are no conflicts of interest regarding the publication of this paper.

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Authors' contributions

Y.S.: Conceptualization, data curation, methodology, investigation, funding acquisition, and writing–original draft. **J.S., M.K., K.Yo., and H.M.:** Conceptualization. **T.K., A.H. and H.K.:** Conceptualization and resources. **A.T. and H.F.:** Conceptualization. **S.T.:** Conceptualization, project administration, and writing–review and editing. **K.Ya.:** Conceptualization, supervision, project administration, validation, and writing–review and editing. All authors read and approved the final manuscript.

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Tables

Tables 1 to 5 are available in the Supplementary Files section.

Figures

Figure 1

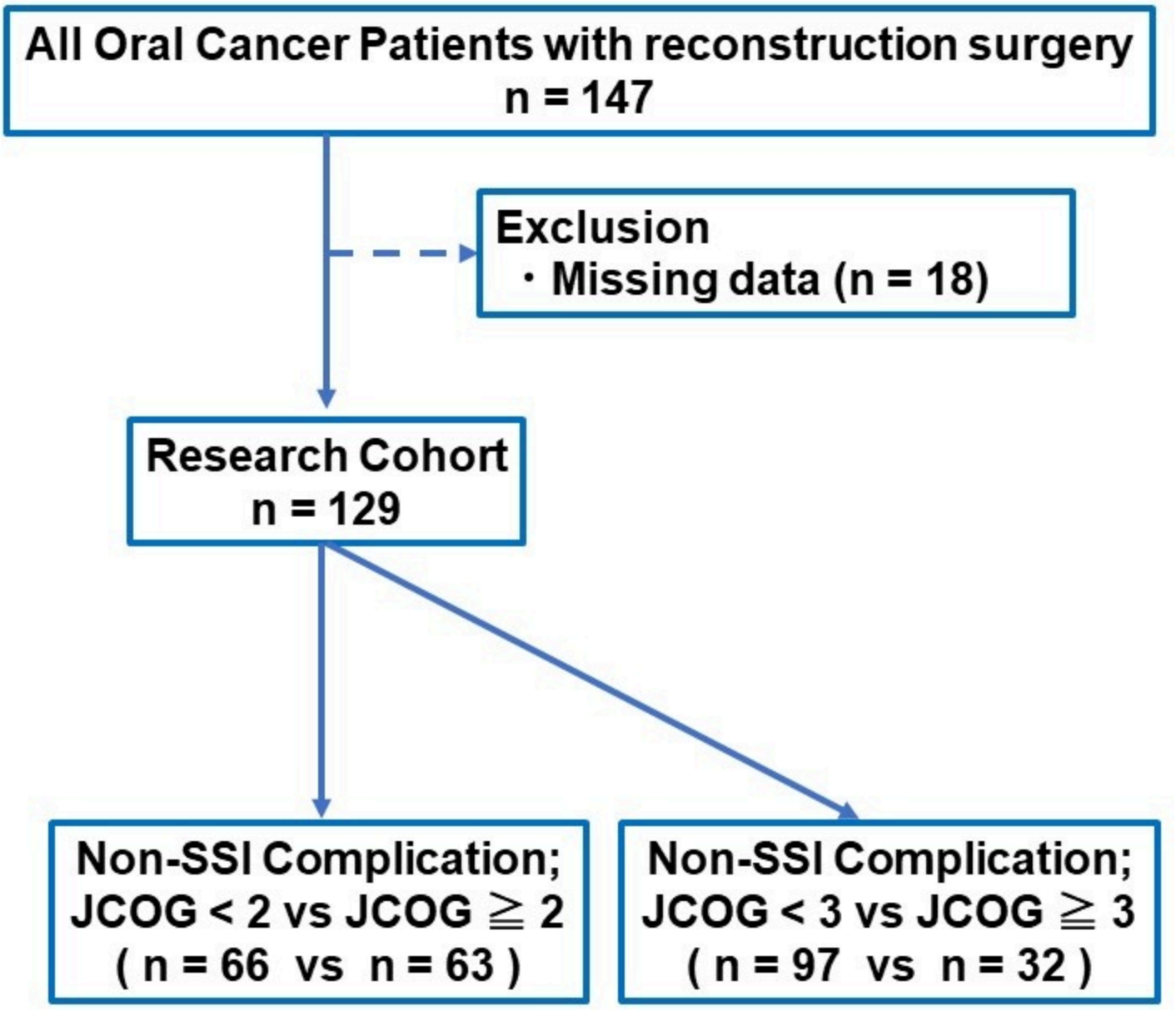


Figure 1

Patient flow diagram

A total of 147 consecutive patients who underwent reconstructive surgery for oral cancer were assessed for eligibility. After excluding 18 patients with missing preoperative physical function data, 129 patients were included in the final analysis. Among them, 63 patients had JCOG Grade ≥2 non-SSI postoperative complications and 32 patients had JCOG Grade ≥3 non-SSI postoperative complications.
Abbreviations: JCOG, Japan Clinical Oncology Group; SSI, surgical site infection.

Figure 2

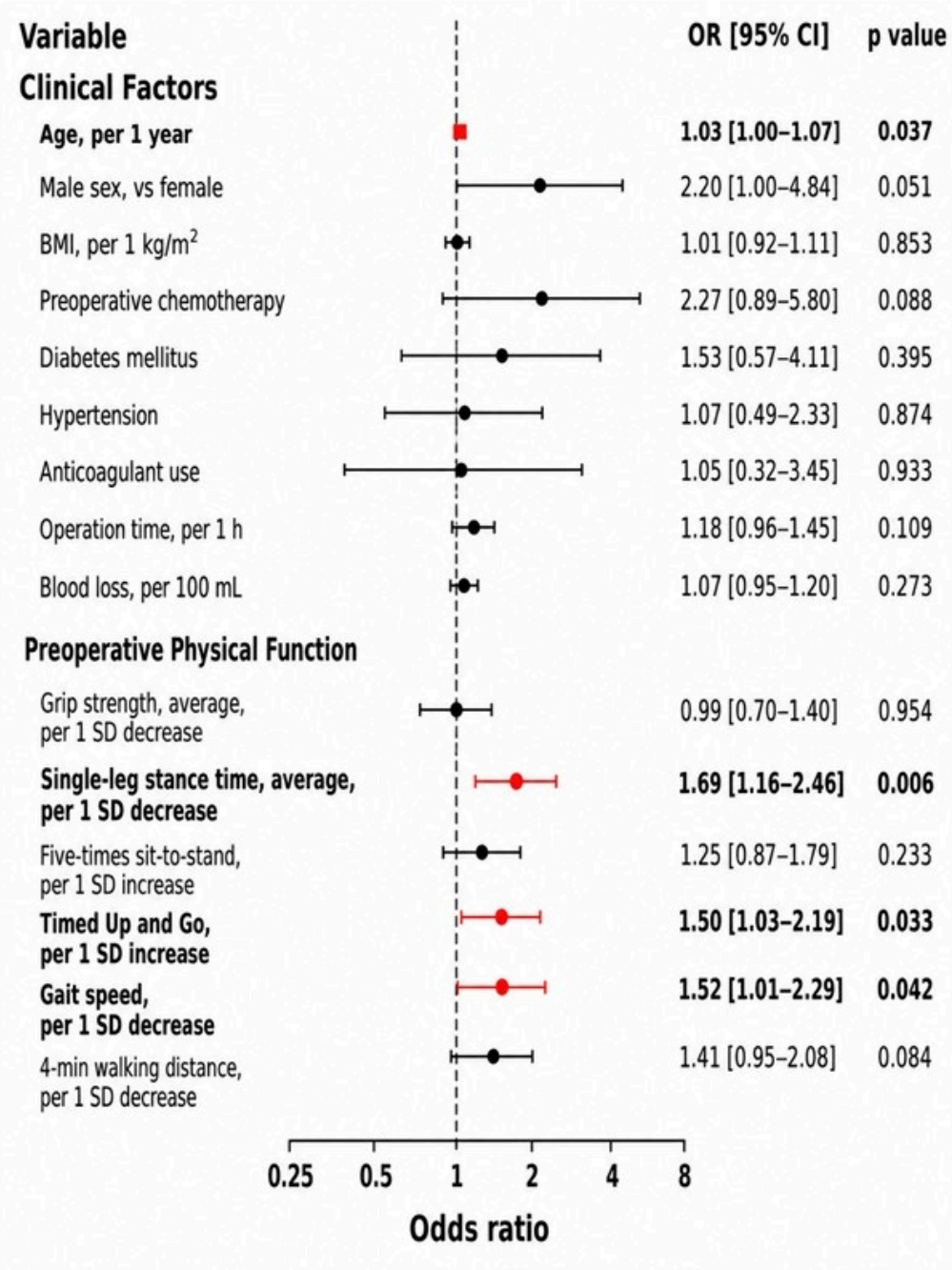


Figure 2

Forest plot of univariable logistic regression analyses for JCOG Grade ≥2 non-SSI postoperative complications

The forest plot shows odds ratios and 95% confidence intervals for clinical factors and preoperative physical function measures associated with JCOG Grade ≥2 non-SSI postoperative complications. For

physical function measures, odds ratios were calculated per 1-standard deviation change in the direction of impaired function.
Abbreviations: JCOG, Japan Clinical Oncology Group; OR, odds ratio; CI, confidence interval; BMI, body mass index; TUG, Timed Up and Go; SD, standard deviation.

Figure 3

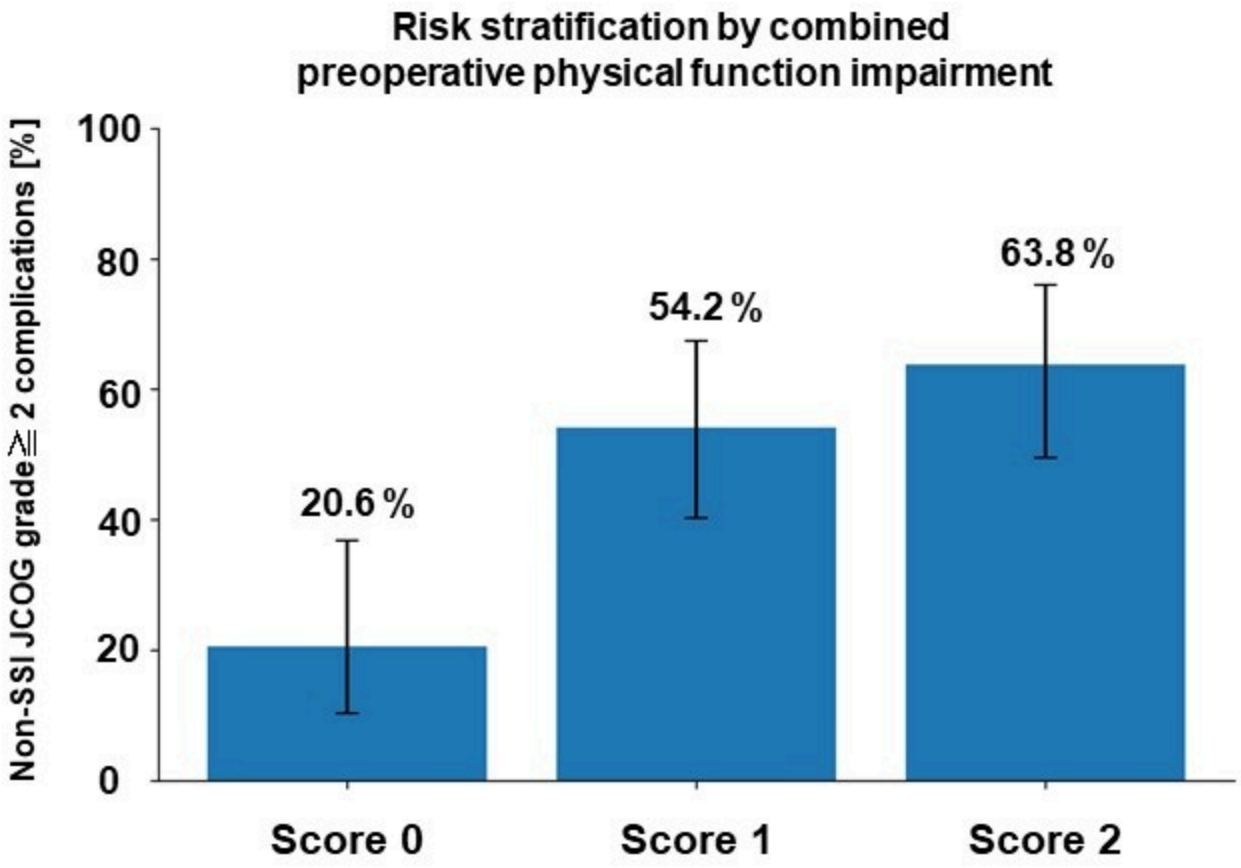


Figure 3

Risk stratification of JCOG Grade ≥2 non-SSI postoperative complications

Complication rates are shown according to the risk score based on single-leg stance time and Timed Up and Go. The risk score was defined as follows: 0 points, neither impairment; 1 point, impairment in either single-leg stance time or Timed Up and Go; and 2 points, impairment in both single-leg stance time and Timed Up and Go. Error bars indicate 95% confidence intervals.

Abbreviations: JCOG, Japan Clinical Oncology Group; TUG, Timed Up and Go.

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- SupplementaryFigure1.jpg
- SupplementaryFigure3.jpg
- SupplementaryFigure2.jpg
- SupplementaryTable1.docx
- Table.docx