



A retrospective analysis of total operating room time in rhinoplasties and septorhinoplasties in the MOVER database

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Introduction

- Rhinoplasties and septorhinoplasties can be associated with a varied number of indications and a variable amount of time in the operating room.
- In other surgical specialties, factors such as age, sex, functional status, and Body Mass Index (BMI) were associated with differences in operative time.^{1,2}
 - American Society of Anesthesiologists (ASA) physical status class has been associated with complications, readmissions, and mortality as well as differences in operative time.^{1,3}
 - This relationship has been variable, however, with some studies showing no or a different association between ASA and BMI to operating time in other specialties.^{2,4,5}

Objectives

- In rhinoplasties and septorhinoplasties, I investigated time in the operating room (OR) relative to:
 - Patient age
 - BMI
 - ASA class, and
 - Number of diagnoses associated with the procedure.

Methods

- A single-center retrospective analysis was conducted.
- Data was obtained from the Medical Informatics Operating Room Vitals and Events Repository (MOVER) database, from the "EPIC_EMR" dataset, consisting of records spanning 2017-2022. (This contains de-identified patient data.)⁶
- 36 patients who underwent rhinoplasty, rhinoplasty with augmentation, or septorhinoplasty at the University of California Irvine Medical Center between March 2018 and December 2022 were included. (Patients lacking a substantial amount of data were excluded.)
- As some diagnostic codes overlapped, the number of diagnoses was determined by fitting diagnosis codes into distinct categories.
- The relationship between time in the OR respective to patient age as well as body mass index (BMI) was analyzed using coefficients of determination.
- Time in the OR respective to the ASA class as well as number of diagnoses was analyzed using one-way ANOVAs followed by Tukey-Kramer HSD.

Results

- Patient age and BMI were not associated with time in the OR ($R^2 = 0.011$ and 0.386 respectively).
- ASA class was associated with a statistically significant difference to time in the OR: means of 354.6 [95% CI 316.0 - 393.3] vs. 418.9 [95% CI 374.0 - 463.7] vs. 458 minutes [95% CI 386.9 - 529.1], ($p < 0.05$).
- Number of diagnoses associated with the procedure (1-5 diagnoses) was not correlated with time in the OR ($p = 0.10$).
- However, when number of diagnoses was categorized into 1-2 diagnoses or 4-5 diagnoses (excluding the one patient with 3 diagnoses), there was a statistically significant increased time in the OR with higher number of diagnoses (363.5 [95% CI 330.4 - 396.6] vs. 424.3 [95% CI 368.1 - 480.4] minutes, $p < 0.05$).

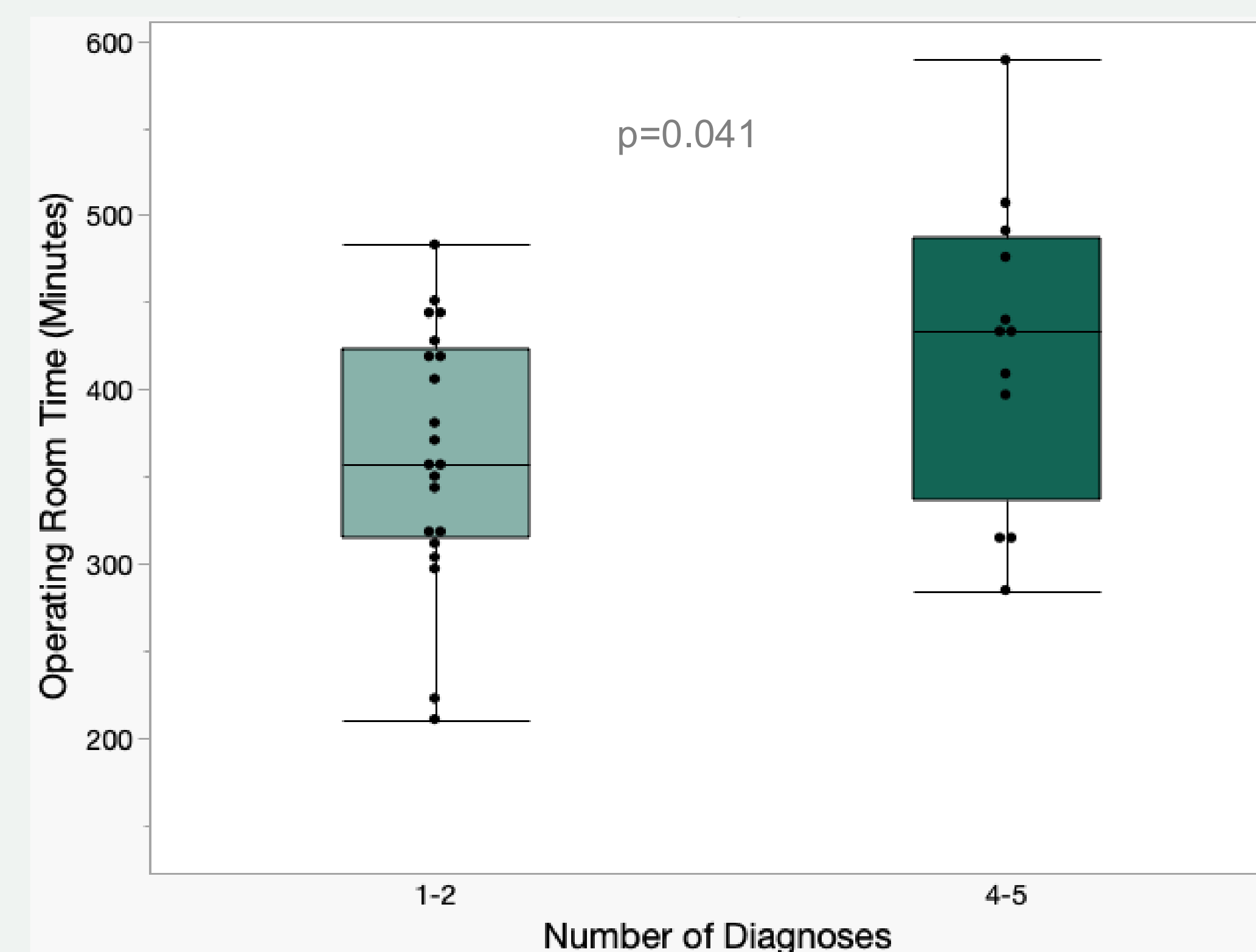


Figure 1. Number of Diagnoses (1-2 vs 4-5) and Operating Room Time in Rhinoplasties and Septorhinoplasties

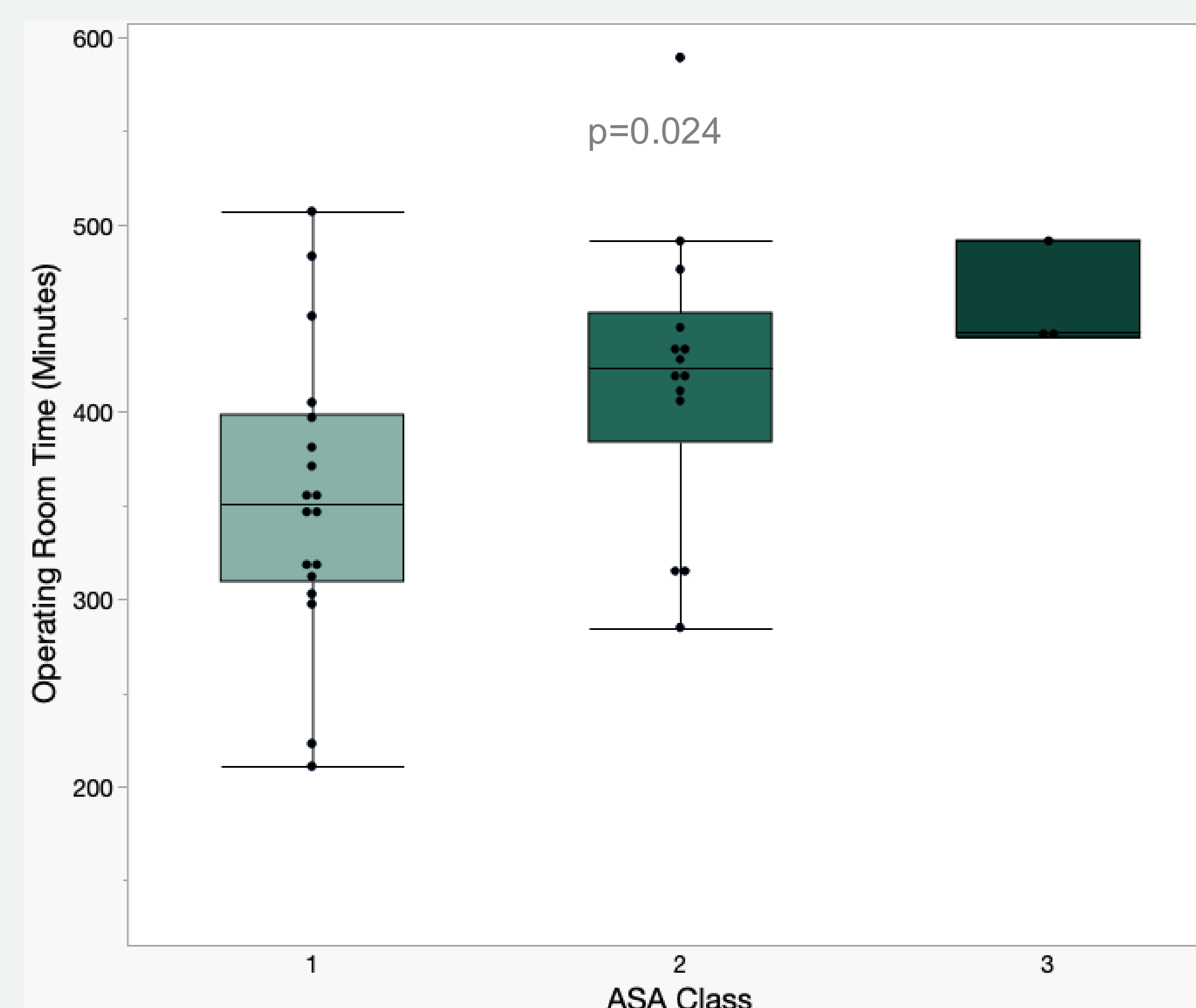


Figure 2. ASA class and Operating Room Time in Rhinoplasties and Septorhinoplasties

Discussion

- While this study was small, it suggests that within rhinoplasties and septorhinoplasties, there are potential associations between time in the OR and ASA class as well as between time in the OR and number of diagnoses.
- In this study, no association was found between time in the OR and age or BMI. This could be due to the small number of patients or a genuine lack of association in this population.
- Future work with a larger number of rhinoplasty and septorhinoplasty patients should further investigate the associations between OR time and ASA class or diagnoses. A larger number of patients would also clarify whether age or BMI had too small of an effect to be found within this small study.
- Knowledge regarding which factors influence time in the OR could guide patient expectations as well as planning for these procedures.

Conclusion

- This study observed associations between time in the OR and ASA class as well as time in the OR and number of diagnoses in patients undergoing rhinoplasties and septorhinoplasties.

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