Surgical experience of first year Otorhinolaryngology residents in Portugal

Original Article

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Abstract

Surgical practice is essential in the training of new specialists in Otorhinolaryngology (ORL). With this study, we characterized the surgical experience of ORL residents who completed their first year of residency in 2021. The 18 responses were obtained through the completion of a questionnaire and represent 82% of the ORL residents.
The average annual number of surgical procedures performed was 58, with a minimum value of 4 and a maximum of 135. These procedures included an average of 16 tonsillectomies, 22 adenoidectomies, 18 transtympanic ventilation tube placements and 5 tracheotomies. The number of surgical procedures performed showed great variability among the different ORL residents. The future development of national surgical objectives, adapted to each year of internship, may be useful for standardizing the surgical training of ORL residents in Portugal.

Keywords: Otorhinolaryngologic Surgical Procedures; Internship and Residency

Introduction

Surgical practice is an essential component of the training of new specialists in otorhinolaryngology (ORL).
In modern surgical training, the surgical experience of residents has been reportedly decreasing. This decrease is related to factors such as a growing emphasis on patient safety, the need for adequate supervision of residents, and compliance with working hours[1]. This situation has become worse as a result of the constraints imposed by the SARS-CoV-2 pandemic[2]. Recent studies have sounded the alarm about the lack of confidence in surgical skills; a survey of general surgeons showed that up to 25% of newly qualified specialists are not confident in performing a wide variety of open

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surgical procedures[3]. The European and UK curricula in ORL do not mention the minimum number of surgeries required to complete the residency[11,12] .

Because ORL is a medical-surgical specialty, surgical training is essential for the proper development of these skills. Exposure to an adequate volume of cases, with repetition of procedures in different contexts, ensures more robust training. The surgical experience acquired during residency appears to be a determining factor for the way in which each physician subsequently approaches different medical conditions[4]. To this end, we sought to characterize the state of surgical training of first-year ORL residents in Portugal.

Materials and Methods

This was a retrospective study of the surgical cases of residents who were in the first year of residency in ORL in 2021. The data were collected using Google Forms® and the participants were asked to share the number of surgical procedures that they most frequently performed during this stage of their training. The considered procedures were adenoidectomy, tonsillectomy, placement of tympanostomy tubes (TT), and tracheotomy. The study included 18 participants and their answers were analyzed using the Microsoft Excel® software, version 16.72. The results are expressed as the mean, minimum, and maximum number of surgical procedures.

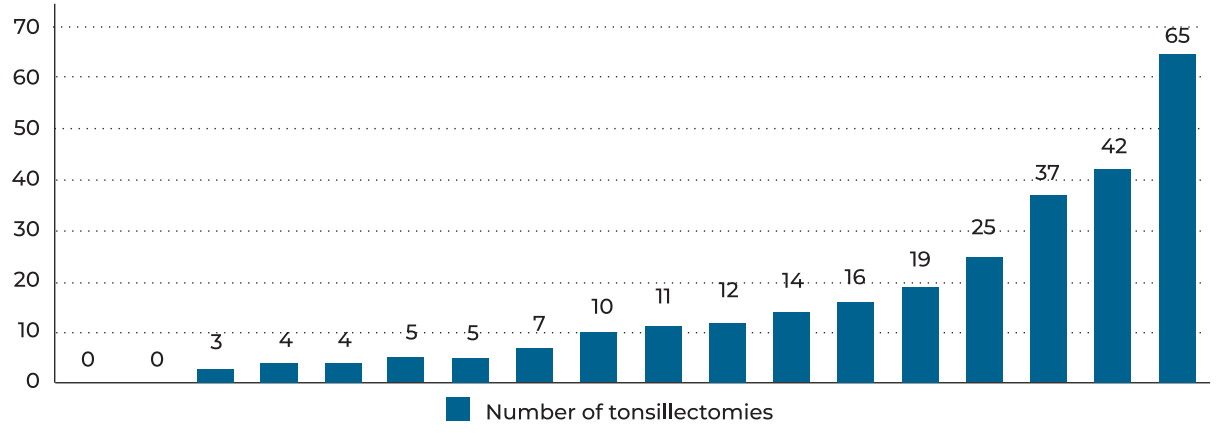
The difference in the number of procedures performed among different geographic areas was determined using the Student's *t*-test and the IBM SPSS Statistics® software, version 25, and the level of significance was set at 0.05.

Results

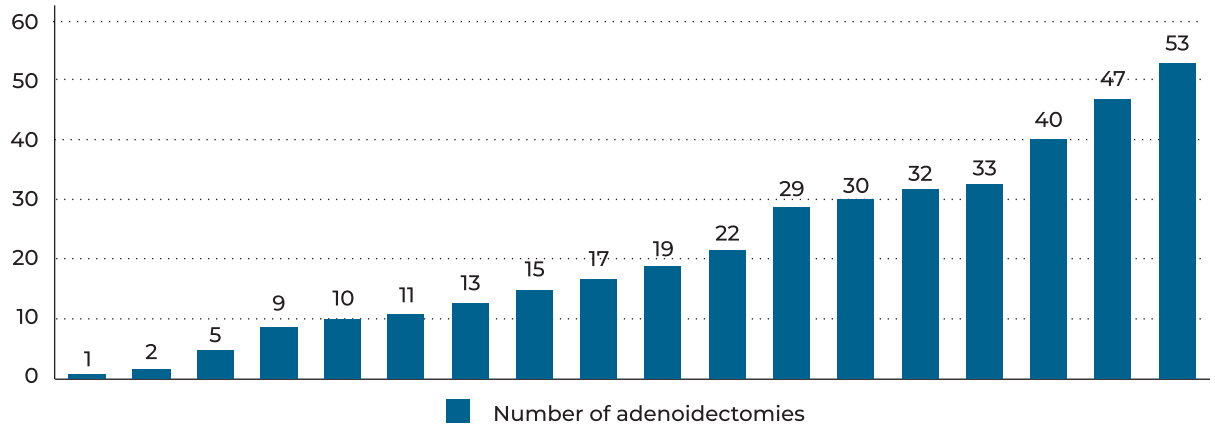
Answers were obtained from 18 participants, who accounted for 82% of the ORL residents who completed their first year of residency in 2021. The mean, maximum, and minimum number of performed tonsillectomies was 16, 65, and 0 (Graph 1), and 40% of the residents performed five or less tonsillectomies during their first year of residency. The mean annual number of tonsillectomies performed by the three residents who performed the lowest number of procedures and the three residents who performed the highest number was 1 and 48, respectively. With regard to adenoidectomy, the mean annual number of procedures was 22; the minimum number was one and the maximum number was 53 (Graph 2). The percentage of residents who performed 10 or less procedures was 22%.

The mean annual number of TT procedures was 18 (minimum of one and maximum of 38 (Graph 3). The mean number of tracheotomy procedures was five (minimum of 0 and maximum of 17) (Graph 4). Moreover, 22% of the residents did not perform any tracheotomy. The four residents who practiced this procedure the most performed between 11 and 17 tracheotomies in 2021.

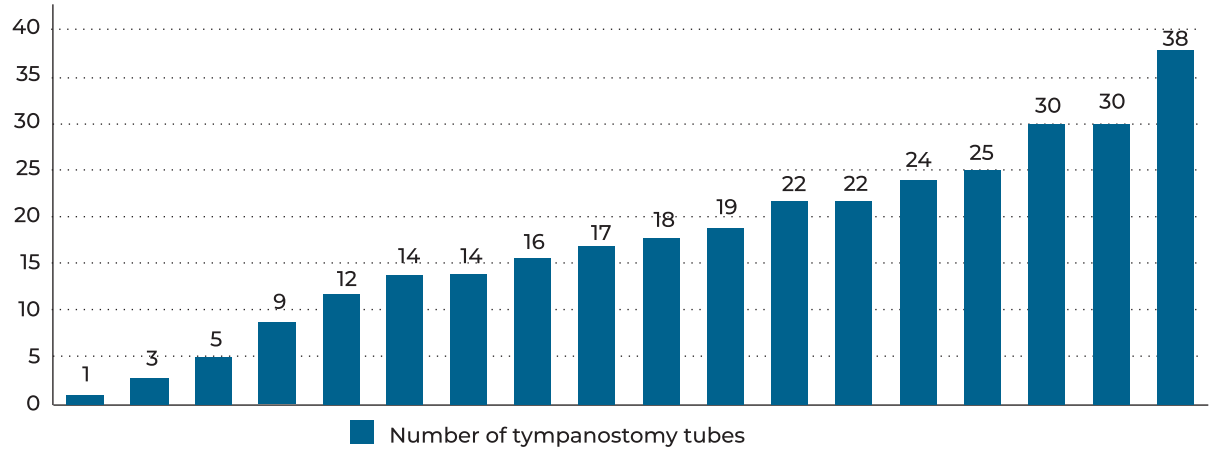
Graph 1
Number of tonsillectomies performed by each resident



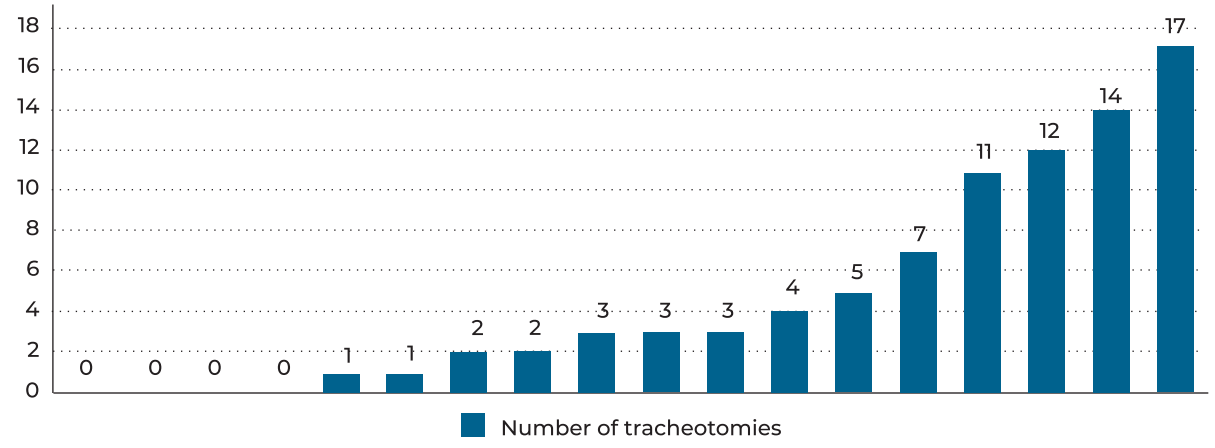
Graph 2
Number of adenoidectomies performed by each resident



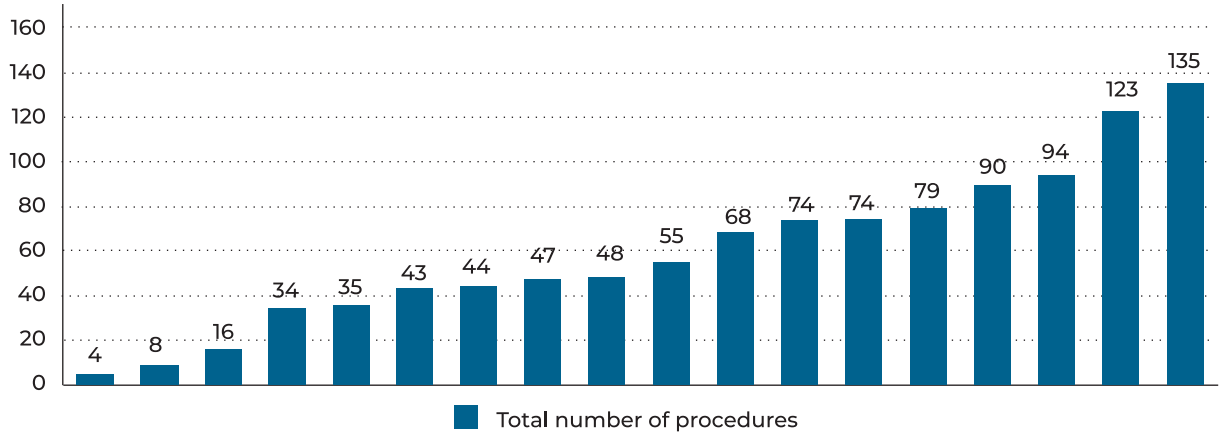
Graph 3
Number of TTs placed by each resident



Graph 4
Number of tracheotomies performed by each resident



Graph 5
Total number of procedures performed by each resident



Considering all the evaluated procedures, a mean of 58 interventions were performed during the first year of residency (minimum of four and maximum of 135) and 17% of the residents performed less than 20 procedures (Graph 5).

The mean number of procedures performed per geographical area was 64 in the North region (six residents assessed) and 59 in the South region (10 residents assessed). There was no statistically significant difference in the number of procedures between the regions (p= 0.20).

Discussion

The acquisition of surgical skills throughout the medical residency is based on training and repetition of the most relevant surgical procedures in the specialty. The surgical training that residents receive during residency influences their practice later as specialists[4]. In recent years, there has been a reduction in the availability of operating slots that has had an obvious negative impact on the training of residents and consolidation of surgical skills[5,6]. This is the first study conducted in Portugal with the aim of evaluating the number of surgical procedures performed in the first year of residency in ORL.

The results showed a significant variability in surgical opportunities among the residents. With regard to tonsillectomy, the three residents who practiced this procedure the least performed a mean of one tonsillectomy in the first year of residency, whereas the three residents who practiced it the most performed a mean of 48 tonsillectomies. A similar pattern was observed for the other evaluated procedures. Moreover, four residents did not perform any tracheotomy, whereas the four residents who practiced it the most performed between 11 and 17 tracheotomies. The current high variability in surgical training is also demonstrated by the difference between the minimum number (four) and maximum number (135) of procedures performed overall during 2021. These findings are in line with the variability reported by other authors[7].

The results of the present study indicate a lack of standardization of the surgery curriculum of ORL residents. Moreover, they suggest that some residents have limited surgical training, which may compromise the development of their technical skills during residency.

The absence of studies that assess the surgical experience of ORL residents throughout their training, both in Europe and the US, makes it impossible to compare the Portuguese reality with that of other countries.

We believe that it would be useful to establish national objectives for surgery, adapted to every year of residency, with the aim of standardizing the surgical training of ORL residents in Portugal. The development of surgery curricula based on predefined national objectives for every year of residency, with subsequent verification of the acquisition of the skills required for the listed procedures,

has been advocated by other authors[3] and has been used successfully in other countries[8]. The ability to objectively measure the acquisition of technical skills is deemed essential in modern surgical training[9,10].

Given the reduced availability of operating slots, surgical training in settings other than the operating room should be emphasized[5,6]. The usefulness of dissection in an experimental surgery laboratory is indisputable. In addition, experimental models can be used to mimic everyday surgical situations[6].

Although the study sample was small (18 participants), the results reflect the country's reality because they represent 82% of the physicians who underwent their first year of residency in ORL in 2021.

Conclusion

The number of surgical procedures performed by ORL residents during the first year of residency varied significantly in Portugal.

Performing nine surgical procedures (mean number performed by the three residents who operated the least) in the first year of residency is clearly insufficient to acquire surgical skills and confidence in the assessed procedures. The development of national goals for surgery that are adapted to each year of residency may be useful for the standardization of surgical training of ORL residents in Portugal.

Conflicts of Interest

The authors declare that there is no conflict of interests regarding the publication of this paper.

Data Confidentiality

The authors declare having followed the protocols in use at their working center regarding patients' data publication.

Protection of humans and animals

The authors declare that the procedures were followed according to the regulations established by the Clinical Research and Ethics Committee and to the 2013 Helsinki Declaration of the World Medical Association.

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Availability of scientific data

There are no datasets available, publicly related to this work.

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