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Brief Communication

## Otorhinolaryngology trainees and the alternatives to surgical tracheostomy: A survey study



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### Abstract

**Objectives:** Alternatives to surgical tracheostomy (AST) including submental (SMENI), submandibular (SMAN) and retromolar intubation (RMI) are fairly new and innovative airway procedures intended to avoid the complications of traditional surgical tracheostomy (ST). The study aimed to document the responses of junior Otorhinolaryngologists, regarding the awareness and training of AST as well as dealing with its complications when performed by other specialty. According to our knowledge there is no similar survey in the English literature.

**Methods:** Otorhinolaryngology residents/registrar in Riyadh, Jeddah and Taif were surveyed between March 2013 and June 2014, enrolled and non-enrolled in Otorhinolaryngology-Head and Neck Surgery (ORL-HNS) training programs doctors were included, Consultants and Senior Consultants were excluded. It is a qualitative and cross-sectional study. Senior consultants were excluded from this qualitative and cross-sectional survey.

**Results:** A total of 59 participants responded to the questionnaire. Fifty-six (94.9%) were not familiar with AST, 52 (88.13%) supported the concept of AST, and 57 (96.6%) agreed the inclusion of AST in the ORL training programs. Thirty (50.8%) thought that AST will have a negative effects on ORL training, 47 (79.7%) would participate in any AST procedure, while 27 (45.8%) agreed to deal with AST complication if the procedure done by other specialty.

**Conclusion:** The majority of the surveyed ORL residents and registrars were not familiar with AST, nevertheless, agreed to undergo further training and to included it in the training programs. However, reserved dealing with related complications once done by other specialty we recommend that the supervising training body training body consider including AST in the curriculum.

**Keywords:** Alternatives to surgical tracheostomy; Otolaryngologist; Surgical airway; Survey

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### Introduction

Surgical tracheostomy (ST) is probably the oldest surgical procedure on record<sup>1</sup> and a required skill for any given ORL-

HNS and surgical training program. STs are typically performed by otolaryngologists and are occasionally performed by general, thoracic and neurosurgeons. In contrast, ASTs, which include submental (SMENI), submandibular (SMANI) and retromolar intubations (RMI), were introduced 30 years ago.<sup>2</sup> These procedures are performed by oral, maxillofacial, skull-base and plastic surgeons in select cases to prevent ST complications.<sup>3</sup>

We believe that the introduction of any innovative airway-related procedure deserves the awareness and training of otolaryngologists because such procedures are integral aspects of this specialty.

This paper discusses the responses of the surveyed participants and highlights the importance upper airways procedures in ORL training. To the extent of our knowledge, there are no similar papers in the English literature.

## Materials and Methods

Otorhinolaryngology residents/registrars in Riyadh, Jeddah and Taif were surveyed between March 2013 and June 2014. Enrolled and non-enrolled head/neck (ORL-HNS) training program doctors were included, and senior consultants were excluded. This study was qualitative and cross-sectional.

A one-page survey composed of six yes-no questions was distributed and collected manually.

The questionnaire consisted of questions related to the following topics: familiarity with AST (Q1), support of the concept of AST (Q2), willingness to include AST in the training program (Q3), belief that AST negatively influences ORL training (Q4), willingness to participate in any AST procedures (Q5), and willingness to deal with the complication of ASTs performed by specialists in other areas.

## Results

A total of 59 participants responded to the survey with the following answers: Q1: 56 (94.9%) responded yes, three (5.08%) did not answer, and 34 (89.8%) answered no; Q2: 52 (88.13%) answered yes and seven (11.86%) answered no; Q3: 57 (96.6%) responded yes and two (3.3%) answered no; Q4:

30 (50.8%) answered yes and 29 (49.1%) answered no; Q5: 47 (79.7%) answered yes and 12 (20.3%) answered no; Q6: 22 (37.3%) answered yes and 37 (62.7%) answered no (Table 1).

## Discussion

Surgical airway procedures, including cricothyrotomies, are established lifesaving procedures that are performed by emergency medical service (EMS) personnel and advanced trauma life support (ATLS) and prehospital trauma life support (PHTLS) providers. However, otolaryngologists consider surgical tracheostomy to be the procedure of choice for airway access, especially in difficult cases (e.g., patients with goiters and morbid and neonates), but tracheostomies are rarely performed in emergency situations.<sup>4</sup> In contrast, manual ASTs are performed in select cases for which orotracheal and nasotracheal intubations are not feasible. Manual AST involves the passing of an endotracheal tube (ET) through a surgical opening in the submental, submandibular, or retromolar region via a special technique<sup>5</sup> (Figure 1A, B).

These procedures are not performed in emergency settings in which the airway is compromised, e.g., situations involving bleeding, sublingual salivary gland injury, skin scarring, mouth abscesses, inclusion cysts, extubation and the accidental dislodgement of ET, due to the potential complications. Additionally, there may be a delay in the removal of the ET in cases with anticipated risks of airway edema and hematoma.<sup>6</sup> The latter situation may require ORL consultation and/or intervention.

Although the otolaryngologists were more than willing to be trained on AST and include AST in their training programs, it is worth noting that the required number of ST procedures performed by any ORL trainee with confidence may have been compromised due to the sharing of cases with the other specialties mentioned above.

Training with mannequins,<sup>7</sup> animals and human cadavers may represent a solution,<sup>8</sup> but it remains unclear whether such training could replace real-life situations.

The willingness to deal with the complications related to ASTs performed by specialists in other areas was not expressed by the majority of the respondents. This finding may be attributable to their exclusion and lack of willingness to equally share the responsibility.

Cost-effectiveness and financial interests may also be relevant but are not discussed here.

The validity of the first question is doubtful because it inquired about the participants' knowledge of AST, and only few answered positively; however, the responses to the subsequent questions were as expected.

This study has some limitations. For example, senior ORL consultants were not included; thus, their experiences and methods for introducing AST into the system require additional study to enable comparisons of ST with alternatives to ST.

Indeed, we do not argue that a single procedure should monopolize the practices of young otorhinolaryngologists; rather, they should be familiar with various innovative airway surgical skills, including the selection, indication and complications of those skills, to achieve improved patient

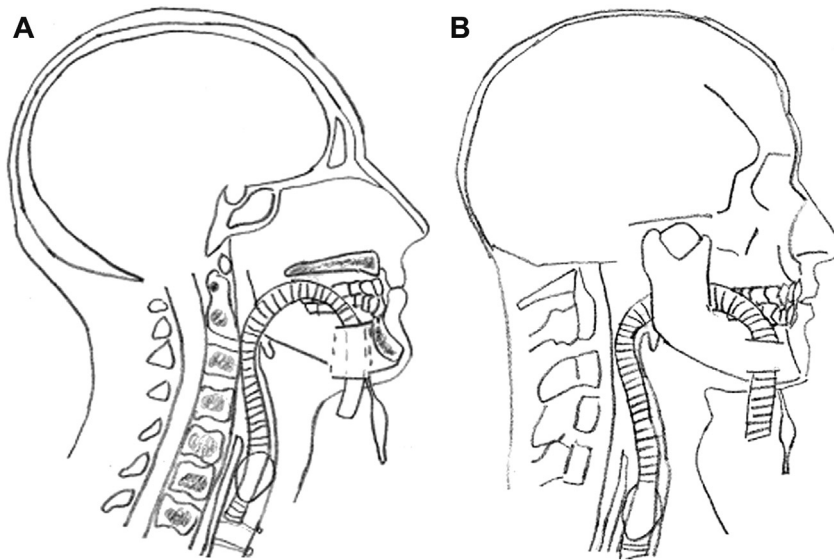
**Table 1: Summary of the survey.**

| Questions/responses                    | Yes        | No         | Don't know |
|--|------------|------------|------------|
| Familiar with AST*                     | 3 (5.08%)  | 56 (94.9%) | 0          |
| Support the concept of AST             | 52 (88.1%) | 7 (11.86%) | 0          |
| Agree to include AST in ORL**TP***     | 57 (96.6%) | 2 (3.38%)  | 0          |
| AST has negative impact on ORL TP      | 30 (50.8%) | 29 (49.1%) | 0          |
| Agreed to be part of AST procedure     | 47 (79.7%) | 12 (20.3%) | 0          |
| Willing to deal with AST complications | 22 (37.3%) | 37 (62.7%) | 0          |

AST\* alternative to surgical tracheostomy.

ORL\*\* otorhinolaryngology.

TP\*\*\* training program.



**Figure 1:** A) Submandibular intubation, B) Submental intubation.

outcomes. Laryngology and airway-related training are integral aspects of ORL-HNS training programs and require further training for subspecialty qualifications.

From the perspective of patient interest, the authors believe that we need to learn from other specialties as required and to select the most appropriate approach.

### Conclusion

The majority of the surveyed registrars/residents were not familiar with AST but agreed to include it in their training programs and expressed reservations regarding its performance by specialists in other areas. We recommend that supervising training bodies should consider the inclusion of AST in their curricula.

### Conflict of interest

The authors have no conflict of interest to declare.

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