Assessment of phonomicrosurgical training in otolaryngology residencies: A resident survey

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ABSTRACT

OBJECTIVE: The primary objective of this study is to assess the adequacy of clinical and laboratory-based phonomicrosurgical training in otolaryngology residency programs using a self-report survey. The study aims to establish whether there is a need and desire for focused surgical training in phonomicrosurgery.


METHODS: An anonymous 10-question survey was sent via email to every otolaryngology residency program in the United States and Canada. For portions of the analysis, the residents were categorized into two groups—junior (R2 & R3) and senior (R4 and R5).

RESULTS: 191 residents responded to the survey (USA – 166; Canada – 25), representing a 34.3% response rate. Approximately one-half of residents stated that their residency program includes a rotation during which the main emphasis is laryngology. Only 18.8% of residents were “very” satisfied with the phonomicrosurgery experience that their program offers and 21.6% of senior residents felt “very” comfortable performing a phonomicrosurgical removal of a vocal fold lesion. Whereas the vast majority of respondents found temporal bone laboratory training to be helpful, 82% had never performed laboratory training in phonomicrosurgery. The majority (87.4%) felt that their comfort level with phonomicrosurgery would increase if they had access to laboratory-based training.

CONCLUSION: Our study demonstrates that there is a lack of emphasis on clinical and laboratory-based training in phonomicrosurgery and that there is a need and desire for focused surgical training in phonomicrosurgery.

BACKGROUND

There exists significant variability in surgical experience between residency programs. Many programs have incorporated surgical simulators or training models as they have been shown to improve residents’ surgical skills. Although other authors have described the need for such surgical education in laryngology, there has been no published formal assessment of the adequacy of clinical and laboratory-based phonomicrosurgical training in residency programs. Similar studies have been, however, published for other surgical skills within otolaryngology. The primary objective of this study is to assess the adequacy of clinical and laboratory-based phonomicrosurgical training in US and Canadian otolaryngology residency programs using a self-report survey.

METHODS

An anonymous 10-question survey was sent via email to every otolaryngology residency program in the US and Canada. The surveys were collected electronically using an internet-based survey web service. No personal or residency program identifying information was requested or collected and the data are reported in aggregate only. The email asked the residents to participate in the study, but emphasized that participation was completely voluntary and anonymous. Standard descriptive statistics were used for the data analysis. First year residents or interns were excluded from the analysis.

PHONOMICROSURGICAL TRAINING IN RESIDENCY QUESTIONNAIRE

For the purpose of this questionnaire, phonomicrosurgery refers to removal of vocal fold lesions using techniques that preserve the epithelium, lamina propria and layered microstructure of the vocal fold.

Q1. What is your clinical year of residency?
   - 1 2 3 4 5

Clinical Experience

Q2. Does your residency program include a rotation during which the main emphasis is laryngology?
   - Yes No

Q3. Have you ever removed a vocal fold lesion using phonomicrosurgical (i.e., microflap preserving) techniques?
   - Yes No

If yes, how many cases per year do you perform as the primary surgeon?
   - 0 1-2 3-5 6-10 11-20 >20

Q4. How comfortable would you feel performing a phonomicrosurgical (microflap preserving) removal of a vocal fold lesion?
   - Not Somewhat Fairly Very

Q5. After performing phonomicrosurgical procedures, how frequently have you had the opportunity to objectively assess your work (videostroboscopy, acoustic or aerodynamic voice analysis)?
   - Not Somewhat Fairly Very

Q6. How satisfied are you with the phonomicrosurgery experience that your program offers?
   - Not Somewhat Fairly Very

Laboratory Training

Q7. Do you find temporal bone laboratory training helpful in preparing you for otologic surgery?
   - Not Somewhat Fairly Very

Q8. Have you ever performed a phonomicrosurgical procedure in a laboratory?
   - Yes No

If yes, did you find this laboratory training useful?
   - Not Somewhat Fairly Very

Q9. Have you ever attended a laryngeal dissection course?
   - Yes No

If yes, was this course a mandatory part of your residency training?
   - Yes No

Q10. Do you think that your comfort level with phonomicrosurgery would increase if you had increased access to laboratory-based training?
    - Yes No

RESULTS

Response rate: 34.3% response rate (191/557)

Residency Experience

Residency program includes a rotation during which the main emphasis was laryngology:
   - US respondents 61.9%
   - Canadian respondents 50%
   - Overall 60.4%

Phonomicrosurgical experience during residency:
   - 18.8% were “Very” satisfied

Table 1. Number of phonomicrosurgical cases performed per year as primary surgeon

<table>
<thead>
<tr>
<th>Level of training</th>
<th>Never</th>
<th>1-2</th>
<th>3-5</th>
<th>6-10</th>
<th>11-20</th>
<th>&gt;20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Junior (R2 &amp; R3)</td>
<td>20%</td>
<td>27.1%</td>
<td>27.1%</td>
<td>15.3%</td>
<td>5.9%</td>
<td>11.8%</td>
</tr>
<tr>
<td>Senior (R4 &amp; R5)</td>
<td>13.7%</td>
<td>16.7%</td>
<td>25.5%</td>
<td>22.5%</td>
<td>15.7%</td>
<td>5.9%</td>
</tr>
</tbody>
</table>

Table 2. Comfort level with phonomicrosurgical cases

<table>
<thead>
<tr>
<th>Level of training</th>
<th>Not</th>
<th>Somewhat</th>
<th>Fairly</th>
<th>Very</th>
</tr>
</thead>
<tbody>
<tr>
<td>Junior (R2 &amp; R3)</td>
<td>48.2%</td>
<td>36.5%</td>
<td>11.8%</td>
<td>3.5%</td>
</tr>
<tr>
<td>Senior (R4 &amp; R5)</td>
<td>11.8%</td>
<td>37.3%</td>
<td>29.4%</td>
<td>21.6%</td>
</tr>
</tbody>
</table>

Laboratory training

Temporal bone training for otologic surgery
   - 92.3% found it to be “fairly” or “very” helpful

Phonomicrosurgical laboratory training
   - 82.0% had no experience
   - Of those respondents who had experience, 75.8% found it to be “fairly” or “very” useful

Laryngeal Dissection course
   - 75.4% had not attended a laryngeal dissection course
   - 87.4% stated that their comfort level with phonomicrosurgery would increase if they had increased access to laboratory-based training

SUMMARY

- Only 18.8% of respondents reported that they were very satisfied with their phonomicrosurgical experience
- The number of cases residents performed per year as primary surgeon was quite low
- This lack of operative experience is the likely cause of the low comfort level with phonomicrosurgery, even among senior residents
- The majority of respondents reported finding temporal bone laboratory training helpful
- Most respondents did not have experience with laboratory-based phonomicrosurgical training, but expressed interest in such training

CONCLUSIONS

There is a lack of emphasis on clinical and laboratory-based training in phonomicrosurgery. This is likely an important factor in explaining why a large proportion of residents do not feel comfortable performing these procedures. Furthermore, there is a need and desire for focused surgical training in phonomicrosurgery.