Injection Laryngoplasty in Oncology Patients

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ABSTRACT

Objective: To examine outcomes in the office-based management of laryngeal dysfunction in oncology patients.

Study Design: Retrospective review

Setting: A tertiary cancer hospital

Subjects and Methods: A retrospective chart review was performed, including all patients referred to the Head and Neck Surgery clinics for lingual swelling. Patients that underwent office-based, fiberoptic trans-cervical injection laryngoplasty were selected. Subjective outcome measures, objective voice analysis parameters, and swallowing studies were annotated.

RESULTS: Of patients undergoing injection laryngoplasty, with 31 having at least one follow-up visit. Twenty six patients (85.7%) had a satisfactory result with a single injection. In patients with pre- and post-operative voice analysis (n=4), mean phonation time (MPT) increased from 4.94 seconds to 14.5 seconds, an increase of 243%. 85.7% of patients reported subjective improvement after injection. Of patients with pre-injection aspiration symptoms, 71.4% no longer required a modified diet. There were no major complications.

Conclusions: We report significant improvements in voice and swallowing outcomes with injection laryngoplasty. This technique is ideal for oncology patients.

METHODS AND MATERIALS

A retrospective chart review on patients having injection laryngoplasty for vocal cord paralysis

Single surgery performed in office trans-thyroid approach

Cyma stick was the preferred injectant material.

Patients were required to have at least one follow up visit for inclusion on the study.

After these patients were identified, the charts were reviewed.

Objective voice analysis data was retrieved from the speech pathology department.

Parameters studied were fundamental frequency, noise to harmonics, and maximal phonation time.

RESULTS

•Forty-three evaluable patients
•31 patients studied
•26 – single injection
•5 – repeat injection
•Two underwent subsequent thyroplasty.
•85.7% of patients reported subjective improvement after injection.
•Mean phonation time (MPT) increased from 5.94 seconds to 14.5 seconds, an increase of 243% (Figure 2).
•Fifteen were deceased at the end of the series.

DISCUSSION

In the office-based management of laryngeal dysfunction in oncology patients, injection laryngoplasty offers a safe and efficacious technique for augmenting glottic function. No break in chemotherapy or radiotherapy is required. No major complications were reported. In some patients with aspiration, improvement in pulmonary toilet and resumption of regular diet were observed.

REFERENCES


CONCLUSIONS

Injection laryngoplasty is a safe and efficacious technique for augmenting glottic function.

No break in chemotherapy or radiotherapy is required.

No major complications.

Role in aspiration unclear and requires further study.

CONTACT

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DISCLOSURES

Jason Acevedo, Kate Hutchinson, Jan Lewin: None
Michael Kupferman: Honoraria and travel grant from Bioform Medical, Inc.

TABLE 1: Patient demographics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pre-Injection</th>
<th>Post-Injection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients</td>
<td>31</td>
<td>31</td>
</tr>
<tr>
<td>Lethally</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>Age in years</td>
<td>42.7</td>
<td></td>
</tr>
<tr>
<td>Length of symptoms</td>
<td>4.89</td>
<td></td>
</tr>
<tr>
<td>Surgical complication</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Head and neck radiation</td>
<td>13</td>
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</tr>
<tr>
<td>Disease Free</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Glosis gap in mm (n=10/2)</td>
<td>2.52</td>
<td>0.33</td>
</tr>
<tr>
<td>Paralytic</td>
<td>24</td>
<td></td>
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<tr>
<td>Average volume injected (cc)</td>
<td>1.04</td>
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<tr>
<td>Major complications</td>
<td>0</td>
<td></td>
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<tr>
<td>Fundamental frequency</td>
<td>124 ± 166.09</td>
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<tr>
<td>Sentence frequency</td>
<td>112 ± 160.47</td>
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<tr>
<td>Signal to noise ratio</td>
<td>0.41 ± 0.2</td>
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</tr>
<tr>
<td>Maximal phonation time (MPT)</td>
<td>4.81 ± 14.12</td>
<td></td>
</tr>
</tbody>
</table>

Figure 1: Otolaryngological diagnosis

Figure 2: Change in mean phonation time

Mean Phonation Time (MPT)