ABSTRACT
Vocal fold medialization has become the gold standard for rehabilitating individuals with unilateral vocal fold paresis (UVFP). This can be accomplished via two basic techniques; thyroplasty type I and injection laryngoplasty. Our study sought to retrospectively assess whether there are any differences between early (<6 months) and late (>6 months) injection laryngoplasty for unilateral vocal fold paralysis. Retrospective chart review was performed on all patients who underwent injection medialization for unilateral vocal fold paresis and had ≥6 months follow-up data available. Variables studied included: age, gender, ethnicity (idiopathic, laryngotracheal, other), injection-relation, sex of glottal closure pre- and post-injection, and quality of life (Voice Handicap Index). 153 patients were identified for study but 83 met full criteria for inclusion; 39 early and 44 late. Preliminary analysis using SPSS for paired t-tests revealed an overall reinjection rate of 48% regardless of timing of injection; i.e., early vs. late. Quality of life measures will be compared to determine any differences between the two groups.

METHODS AND MATERIALS
- Retrospective chart review was performed on all patients who underwent injection medialization for unilateral vocal fold paresis and had ≥6 months follow-up data available.
- Variables studied included: age, gender, ethnicity (idiopathic, laryngotracheal, other), injection-relation, sex of glottal closure pre- and post-injection, and quality of life (Voice Handicap Index).
- 153 patients were identified for study but 83 met full criteria for inclusion; 39 early and 44 late.

RESULTS
- Number of injections was not significantly different between the groups: Early= within 6 months of onset Late= more than 6 months
- Severe final gap was significantly associated with late injections
- Voice Handicap Index as a measure of patient-perceived quality of life was not significantly different for patients injected early vs. late
- Significantly more left sided UVFP were idiopathic (Chi-sq<0.00)
- Symptoms of dysphagia were not significantly different between the 2 groups
- Newer materials have been developed and utilized that are considered semi-permanent lasting an average of 6 months. However, long-term studies demonstrating efficacy are not available.

DISCUSSION
- Total number of injections was not related to whether patients were injected early or late. This was not expected as it was thought that earlier injection would lead to better vocal fold and prevent disuse atrophy requiring less injections.
- Voice Handicap Index as a measure of patient-perceived quality of life was not significantly different for patients injected early vs. late. This was an unexpected finding as we had hypothesized that patients that suffered longer periods of time with aphonia would have lower quality of life.
- Significantly more left sided UVFP were injected late ended up with a more severe gap. This may have been related to atrophy of the muscle over time and warrants further investigation.
- Newer materials have been developed and utilized that are considered semi-permanent lasting an average of 6 months. However, long-term studies demonstrating efficacy are not available.
- Results neither support waiting until chance of regeneration is less than 3 injections. This is an unexpected finding but interesting in view of the fact that the left RLN is longer and has a higher likelihood of injury and incidence.
- Results neither support waiting until chance of regeneration is less than 3 injections. This is an unexpected finding but interesting in view of the fact that the left RLN is longer and has a higher likelihood of injury and incidence.

REFERENCES

Graph 1. 1 = minimal gap 2 = moderate gap 3 = severe gap

Graph 2. Voice Handicap Index vs. Early/Late injection

Table 1. Number of injections vs. Early/Late

<table>
<thead>
<tr>
<th>Gender</th>
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<td>Female</td>
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Table 2. Outcome measures

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<th>Outcome Measures</th>
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<th>Late</th>
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<tbody>
<tr>
<td>VHI scores at last visit</td>
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<td>2 injections</td>
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<td>20</td>
</tr>
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<td>21</td>
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</table>

Graph 1. Outcome measures

Table 3. Number of injections

<table>
<thead>
<tr>
<th>Number of injections</th>
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<th>Late</th>
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<td>11</td>
</tr>
<tr>
<td>3 injections</td>
<td>6</td>
<td>6</td>
</tr>
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</table>

Graph 2. Voice Handicap Index vs. Early/Late injection

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RESULTS OF EARLY VS. LATE VOCAL FOLD INJECTIONS

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