Characterization of Functional Dysphonia: Pre-Treatment and Post-Treatment Findings
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Introduction
• Chronic dysphonia has a 4.3% lifetime incidence in the USA1.
• Functional Dysphonia (FD) is one of the most difficult chronic dysphonias to diagnose and treat2-3.
• Defined as a change in voice quality without structural or neurologic abnormalities of the larynx.
• High variable presentation4-5,6,7,8,9
• Conventional speech therapy ineffective.
• Specialist FD therapy has been shown to be effective10-11.
• Poorly understood physiologic basis5,6.
• Pretreatment Vocal Handicap Index (VHI) 71.0 ± 19.3
• Median time to diagnosis 166 days (Q1: 74d, Q3: 519d).
• 41.9% treated previously failed voice therapy elsewhere.
• 2% improved after 2 sessions, 2% improved after 3 sessions.
• 98% successful treatment demonstrates high efficacy of specialized laryngeal manipulation/repositioning therapy.

Methods
• 114 patient records reviewed from the Cleveland Clinic Voice Center.
• Electronic records surveyed for demographic, morphometric, and medical data.
• Comorbidities previously associated with FD specifically addressed.
• Video recordings of patient speech used to assess quality of voice.
• Videostroboscopic examination used to characterize laryngeal posture and movement.
• Pre-treatment and post-treatment time-points assessed.
• Video review conducted by two independent reviewers.
• Disagreement resolved via collaborative discussion.
• Statistical analysis completed using JMP 10.1 and SAS 9.4.

Results
• Baseline Characteristics of Sample

<table>
<thead>
<tr>
<th>Disease Trigger (% of Patients Reporting this Trigger)</th>
<th>Number of Patients</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Respiratory Infection</td>
<td>3 (2.6%)</td>
<td></td>
</tr>
<tr>
<td>URI</td>
<td>54 (47.4%)</td>
<td></td>
</tr>
<tr>
<td>Intubation / Surgery</td>
<td>14 (12.7%)</td>
<td></td>
</tr>
<tr>
<td>Depression / Anxiety</td>
<td>26 (22.8%)</td>
<td></td>
</tr>
<tr>
<td>Chronic Fatigue Syndrome</td>
<td>1 (0.9%)</td>
<td></td>
</tr>
<tr>
<td>BMI 31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental Trigger (scent / allergen)</td>
<td>19 (16.7%)</td>
<td></td>
</tr>
<tr>
<td>Disease Trigger (% of Subjects with Comorbidity)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arthritis</td>
<td>6 (5.3%)</td>
<td></td>
</tr>
<tr>
<td>Allergies / Sinus Problems</td>
<td>30 (26.3%)</td>
<td></td>
</tr>
<tr>
<td>Comorbidities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age in Years</td>
<td>48.5</td>
<td></td>
</tr>
<tr>
<td>Demographics</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 1: Videostroboscopic classification algorithm and data

Conclusions
• Large descriptive sample of FD patients with characterization of dysphonia, laryngeal posture, and comorbidities.
• Method for categorizing laryngeal posture in FD.
• Time to diagnosis and previously failed treatment reinforce the need for good diagnosis and treatment of FD.
• 98% successful treatment demonstrates high efficacy of specialized laryngeal manipulation/repositioning therapy.

Discussion
• Follow up limited to repeat visits - 6% had relapse of FD.
• Relapse without follow up would bias this result.
• Prospective survey planned to address this issue.
• Debate continues over psychogenic vs. muscle tension etiology – our data do not support psychogenic causality.
• Average emotional VHI subscore significantly less than physical or functional values (p<0.001).
• Concurrent diagnosis of depression/anxiety (22.8%) comparable to national incidence (19.7%)11.

References

Figure 2: supraglottic anteroposterior compression

Figure 3: supraglottic lateral compression

Figure 4: Supraglottic compression with both anteroposterior and lateral components

Table 1: Baseline Characteristics of Sample

Table 2: perceptual auditory assessment of voice