Palatal Myoclonus: Algorithm for management with botulinum toxin based on clinical disease characteristics

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INTRODUCTION

Palatal myoclonus (PM) is a movement disorder of the soft palate whereby involuntary rhythmic contractions occur from 40 to 240 times per minute.1,2,3,4

Synchronous audible clicking tinnitus often accompanies myoclonic movements and is frequently the most troublesome symptom.

Management options include oral medications, surgical procedures and adjunctive measures such as psychotherapy however symptoms are often refractory to these measures.

Botulin toxin is an effective treatment for PM

The senior author of the current series has injected >20 EPM patients with botulin toxin over the past 20 years

We present six of these patients, each of whom presented with variable clinical symptoms and examination

Anatomical principles guiding palatal injection are discussed and the first management algorithm for use of botulinum toxin in PM presented

METHODS AND MATERIALS

Outcome measures

Patient and disease characteristics
Botulin toxin injection specifics
Algorithm for management of PM with botulin toxin based on
Clinical symptomatology
Examination findings
Involved muscle groups.

Injection technique

Injections of lyophilized botulinum toxin A (onabotulinum toxin A (BOTOX); Allergan Pharmaceuticals, Irvine, CA) were performed using electromyographic (EMG) guidance

Visual determination of palatal areas with maximal myoclonic contraction was used to guide placement of the 27-gauge monopolar electromyography (EMG) recording needle.

• Medial palate injections were performed on either side of the uvula into levator veli palatini (LVP) muscle

• Lateral palate injections were performed lateral to the hamulus of the medial pterygoid plate to target tensor veli palatini (TVP) muscle

Patients were reviewed two weeks post injection to assess need for further botulinum toxin injection and subsequently as required for symptom control.

RESULTS

Table 1. Patient, disease and management characteristics

<table>
<thead>
<tr>
<th>N (%)</th>
<th>Male/Female</th>
<th>Upper respiratory infection preceding symptoms</th>
<th>MRIaudiology prior to injection</th>
<th>Prior failure oral medications</th>
<th>Preceding symptoms</th>
<th>Clicking tinnitus</th>
<th>Awareness of palate movements</th>
<th>Rhinolalia</th>
</tr>
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<tbody>
<tr>
<td>4 (2)</td>
<td>3 (50.0)</td>
<td>6 (100.0)</td>
<td>5 (83.3)</td>
<td>3 (50.0)</td>
<td>4 (66.7)</td>
<td>4 (66.7)</td>
<td>2 (33.3)</td>
<td>1 (16.7)</td>
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</tbody>
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Age at symptom onset (years): Mean (±SD) 30.6 (±16.3)

Age at presentation (years): Mean (±SD) 38.3 (±13.7)

Injection characteristics based on symptoms

• Initial
  • 2.5 Units to LVP in medial palate for all patients
  • Good symptom control for patients with perceived palate motion as presenting symptom

• Subsequent
  • All patients with tinnitus as predominant symptom required 2nd injection into TVP muscle lateral to hamulus
  • Good subsequent symptom control in all patients
  • 2 patients with coincident pharyngeal myoclonus had injections to palatopharyngeus muscle at posterosuperior tonsillar pillar
  • No complications

CONCLUSIONS

Management of palatal myoclonus with botulinum toxin can be tailored to address the muscles contributing to predominant presenting symptoms

REFERENCES