Alternate Management of Puberphonia
Direct Laryngoscopy and Vocal Cord Stretching

Author: Dr. Jayant Watve M.S. (E.N.T.)
Assoc. Prof. Dr. D.Y.Patil Medical College, Kolhapur, India

Abstract: The management of puberphonia (the persistence of a high-pitched voice in males past puberty) has in the past been speech therapy. The author presents his results using an alternate surgery which involves performance of a direct laryngoscopy and stretching of the patient's vocal cords. Ten patients are reported and nine patients had good improvement in their voice with one or two treatments.

Introduction: By definition, puberphonia is a continuation of high-pitched voice in males which otherwise disappears at the time of puberty. Children reach puberty around the age of 12 years when their hormone levels begin to become elevated. In males, this is also the age when their larynx has a rapid increase in size. The vocal cords become longer and begin to vibrate at a lower pitch (or frequency).

This explains why most males go through a period where their voice 'breaks'. The vocal cords are trying to adjust to their new dimensions. The Adam's Apple begins to become prominent on the male neck. No such laryngeal changes take place in females who continue using a higher-pitched voice.

Most children adapt to the new changes. For some reason, a few of them do not make the transition into using the deeper voice which their larger vocal dimensions would normally produce. These reasons are usually psychological and fairly easy to modify. Males who retain their pre-pubertal (or high-pitched) voice have nothing physically 'wrong' with their vocal cords or larynxes.

Because there is no organic change in the larynx, the disorder is grouped under psychogenic voice disorders. The incidence is 1 in 900,000 population. Even though the incidence is low, for the individual it causes a social and psychological embarrassment.

Functional voice disorders are usually managed by the speech therapist and surgeons usually have a lack of interest because there is not a procedure designed to improve the patient’s symptoms. In this manuscript, an alternative to speech therapy, “Direct Laryngoscopic Manipulation” is presented.

Methods: The procedure is a simple one which is frequently performed by the otolaryngologist. In essence we stretch the true vocal cords larynx with a Macintosh laryngoscope and ask the person to pronounce a
long “eeee”. The tip of the laryngoscope is placed in the valleculae and pressure is placed over the cricoid cartilage in a posterior-cephalic direction. This procedure will stretch the true vocal cords. Stretching the vocal cords will make them less taught when the pressure is released and the patient will produce a lower pitched voice. Then, pressing on the thyroid cartilage will further reduce the vocal cord tension. During surgery this process is repeated three to four times. During the procedure, the patient also learns how to produce a lower-pitched sound. Once learned, the patient must maintain and continue to produce the same quality of voice. If the patient relapses a second procedure will be required.

**Results:** A total of ten cases were treated over a five-month period. Seven required one treatment for good improvement in their voice, two required two treatments for satisfactory improvement, and one had no improvement after two treatments – See table below.

<table>
<thead>
<tr>
<th>Number of Patients</th>
<th>Treatments Required</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Single</td>
<td>Immediate good improvement in voice quality</td>
</tr>
<tr>
<td>2</td>
<td>Two</td>
<td>Satisfactory improvement in voice quality</td>
</tr>
<tr>
<td>1</td>
<td>Two</td>
<td>No improvement in voice quality</td>
</tr>
</tbody>
</table>

Preoperative voice, surgery and postoperative voice of patient #1  View YouTube Video  [https://youtu.be/_KKjSoa9vW0](https://youtu.be/_KKjSoa9vW0)

Pre & Postoperative voice of patient #2.  View YouTube Video  [https://youtu.be/oYns8TdDBoo](https://youtu.be/oYns8TdDBoo)

**Discussion:** In the past individuals with Puberphonia were always referred for speech therapy and psychological counseling. Speech therapists always welcomed these patients since it was an easy condition to treat. At times it can be time consuming and require many treatment sessions since the patient has to continue using his “new” voice and learn to use the lower pitch. In many places in our country, speech therapists are not available.

The first report of a surgical treatment of puberphonia was in 2001.¹ The report described an open technique and after the elevation of a superior neck flap, two absorbable figure eight sutures were placed around the hyoid bone and cricoid cartilage to reduce the cricothyroid distance. In this study, an endoscopy technique similar to the one described by Dr. Sudhakar Vaidya and Dr. G. Vyas² was used to treat puberphonia. An external incision was avoided and good results were obtained in the majority of patients.

Unlike speech therapy, the stretching of the vocal cords can be performed by the otolaryngologist and requires a shorter length of treatment – usually one or two settings. Although this study is small, it demonstrates the good results which mechanical stretching of the vocal cords under local anesthesia can achieve.
References:

   View Abstract

   From http://medind.nic.in/ibd/t06/i1/ibdt06i1p20.pdf

*This article was presented at the MENTCOM-06 Conference in 2006 and received the "Consultant Award"