



OMM  
for  
Vocal  
Performance

Lawrence L. Prokop, DC  
Professor

Department of Physical Medicine & Rehabilitation  
College of Osteopathic Medicine  
Michigan State University

# Introduction

- ▶ OMM
- ▶ Benefits to SLP
- ▶ Objectives

# OMM

- ▶ Osteopathic Manipulative Medicine uses manual techniques to evaluate and treat various medical problems, primarily musculoskeletal.
- ▶ With palpation, abnormal muscle tone and joint mobility can be identified and improved or corrected.

# Purpose in SLP

- ▶ With knowledge of a few techniques, the speech and language pathologist can identify restrictions in muscle tone and mobility around the face, neck and upper torso.
- ▶ The therapist may also then improve these restrictions to decrease the physical impairments to speech and, possibly, feeding.

# Class Objectives

- ▶ Develop an understanding of military techniques.
- ▶ Gain experience in palpating restrictions in muscles involved in vocal performance.
- ▶ Understand precautions for safety.

# Suggested treatment for voice and swallowing

- ▶ Research project
- ▶ 50 subjects randomly chosen
- ▶ Tested cervical ROM then speech recorded - “aaa” & “eee”
- ▶ Speech analysis program used to study perturbation.
- ▶ Treated w/ OMM to neck & upper trunk
- ▶ Speech recorded again and then cervical ROM tested again

# Results

- ▶ Cervical ROM improved with OMM, as was expected.
- ▶ Speech analysis program used to study perturbation.
- ▶ 80+% of subjects improved in vocal parameters, by analysis of the recordings.
- ▶ The techniques used were primarily Myofascial Release Techniques (soft tissue stretching) of the various muscles around the upper airway.
- ▶ Recommendation: Use these techniques in therapy to improve vocal performance.



# Basics of palpation

- ▶ With these techniques have patient seated.
- ▶ Sit in front or stand behind patient.
- ▶ **Always explain to patient what you are about to do and why.**
- ▶ Use gentle pressure, not large force.
- ▶ Move muscles in cephalad-caudad, anterior-posterior, and anterior-posterior rotation, or parallel or perpendicular to the fiber directions, from easily moved to tightened “barrier” position.
- ▶ Never push to the point of pain, only stretching.
- ▶ Hold as patient takes 3 - 5 slow breaths to allow the muscles to relax.
- ▶ Repeat the process 3 - 4 time to get maximum relaxation in the muscles.

# Barrier concept

- ▶ All tissues have a certain amount of distensibility or stretch.
  - ▶ Even bone has a compressibility, although very small.
- ▶ The barrier is the end of the stretch when the tissues become tight and do not easily move further.
- ▶ When soft tissues are moved to the barrier, the tissues can be relaxed and the barrier pushed back, as the tissues are stretched and relaxed.
- ▶ This allows for greater ROM and less force to produce sound.

# Precautions

- ▶ Never treat over open wounds, healing surgeries or fractures, or unstable spines.
- ▶ When treating anterior scalene & sternocleidomastoid muscles, only treat 1 side at a time to decrease chance of carotid compression.

# Major muscles easily treated

- ▶ Temporalis
- ▶ Masseters & Pterygoids
- ▶ Platysma
- ▶ Sternocleidomastoid
- ▶ Anterior scalene
- ▶ Cervical paraspinals
- ▶ Trapezius
- ▶ Pectoralis

# Palpation practice

- ▶ Sit with non-dominant forearm supported.
- ▶ Closing eyes will improve tactile perception.
- ▶ Pass of fingers over skin to feel changes in temperature without touching skin.
- ▶ Move fingertips over skin feel hair.
- ▶ Gently slide fingers along skin to feel moisture, contour, temperature, texture, tension.
- ▶ Gently press skin a few millimeters inward and move skin in proximal-distal, medial-lateral, and right and left rotation directions. Feel for resistance in all these directions.
- ▶ Gently compress further to subcutaneous fat and repeat movements.
- ▶ Gently compress further to muscle layer and repeat movements.
- ▶ Press further to bone and repeat movements.

# Palpation Findings

- ▶ Note that with soft tissues there will be greater movement or distensibility in one direction of each of the paired movements.
- ▶ Proximal or distal
- ▶ Medial or lateral
- ▶ Right or left rotation

# Treatment Technique

- ▶ Gently compress the tissues to contact the muscles.
- ▶ Move the tissues to the barrier in each of the three directions, to get the sum of all three barriers.
- ▶ Hold while the patient breathes.
- ▶ As the patient exhales, there will be a relaxation with the barrier releasing.
- ▶ Move to a new barrier and repeat.
- ▶ Usually, three or four breaths and following to the new barriers will take the tissues as far as possible at that time.

The background features abstract, overlapping geometric shapes in various shades of blue, ranging from light sky blue to deep navy blue. These shapes are primarily located on the right side of the slide, creating a modern, dynamic feel.

- ▶ **Clinical Treatment Practice**



# Temporalis & Masseter Release

- ▶ Patient seated.
- ▶ Stand behind patient, placing fingers on each side of temples or jaw.
- ▶ Compress temporalis or masseter muscles and add pressure in anterior-posterior, cephalad-caudad and anterior-posterior rotation directions to feel the muscles tighten to barrier.
- ▶ Hold for several breaths to allow the muscles to relax.
- ▶ Shift fingers to tighten again and repeat.
- ▶ Repeat 3 - 4 times to fully relax muscles.

# Pterygoid stretch - In neutral

- ▶ Patient seated.
- ▶ Stand behind patient, placing fingers on forehead and chin.
- ▶ Patient opens mouth slightly and then attempts to close against resistance.
- ▶ Hold for several seconds.
- ▶ Open jaw further & repeat.
- ▶ Repeat 3 - 4 times to fully relax muscles.

# Pterygoid stretch - Rt & Lft lateral

- ▶ Patient seated.
- ▶ Stand behind patient, placing fingers on forehead and lateral aspect of jaw.
- ▶ Patient attempts to push jaw into hand against resistance
- ▶ Hold for several seconds.
- ▶ Shift jaw further to side & repeat.
- ▶ Repeat 3 - 4 times to fully relax muscles.
- ▶ Repeat procedure on opposite side.

# Platysma Stretching

- ▶ Patient seated.
- ▶ Stand behind, placing fingers of both hands medial to the jaw from beneath.
- ▶ Compress Platysma and add pressure in a cephalad direction and add anterior-posterior and rotation directions to feel the muscles tighten to barrier.
- ▶ Hold for several breaths to allow the muscles to relax.
- ▶ Shift fingers to tighten again and repeat.
- ▶ Repeat 3 - 4 times to fully relax muscles.
- ▶ Do not compress under the angle of the jaw to avoid carotid artery pressure, or midline to avoid the trachea and larynx.

# Cervical Paraspinal Muscles

- ▶ Patient seated.
- ▶ Stand or sit behind patient, placing fingers on each side of cervical paraspinal muscles.
- ▶ Compress muscles and add pressure in anterior-posterior, cephalad-caudad and right-left rotation directions to feel the muscles tighten to barrier.
- ▶ Hold for several breaths to allow the muscles to relax.
- ▶ Shift fingers to tighten again and repeat.
- ▶ Repeat 3 - 4 times to fully relax muscles.

# Anterior Scalene

- ▶ Patient seated.
- ▶ Stand or sit in front or behind patient, placing one hand supporting the head and the other with fingers behind the anterior scalene.
- ▶ Compress anterior scalene and add pressure in anterior-posterior, cephalad-caudad and anterior-posterior rotation directions to feel the muscles tighten to barrier.
- ▶ Hold for several breaths to allow the muscles to relax.
- ▶ Shift fingers to tighten again and repeat.
- ▶ Repeat 3 - 4 times to fully relax muscles.
- ▶ Repeat on opposite side, if needed.
- ▶ Do not come from in front of SCM to avoid carotid artery pressure.

# Sternocleidomastoid Stretch

- ▶ Patient seated.
- ▶ Sit or stand in front or behind, placing one hand supporting the head and the other with fingers behind the SCM.
- ▶ Compress SCM and add pressure in anterior-posterior, cephalad-caudad and anterior-posterior rotation directions to feel the muscles tighten to barrier.
- ▶ Hold for several breaths to allow the muscles to relax.
- ▶ Shift fingers to tighten again and repeat.
- ▶ Repeat 3 - 4 times to fully relax muscles.
- ▶ Repeat on opposite side, if needed.
- ▶ Do not come from in front of SCM to avoid carotid artery pressure.

# Upper Trapezius Stretch

- ▶ Patient seated.
- ▶ Sit or stand behind patient, placing one hand supporting the head under the occiput and the other with hand on the shoulder at the lateral end of the trapezius.
- ▶ Slightly flex the neck to tighten the trapezius to barrier.
- ▶ Stretch the trapezius with pressure on the top of the shoulder & with pressure on the head toward the contralateral side. Hold for several breaths to allow the muscles to relax.
- ▶ As the muscle relaxes, continue the pressure aiding the muscle stretching.
- ▶ Repeat 3 - 4 times to fully relax muscles.
- ▶ Repeat on opposite side, if needed.



# Upper Trapezius Stretch - Alternative

- ▶ Use when the cervical spine cannot or should not be moved.
- ▶ Patient seated.
- ▶ Sit or stand behind patient, placing both hands on shoulders at the upper margins of the trapezius muscles.
- ▶ Stretch the trapezius with pressure on the top of the shoulders anterior with 1 hand and posterior with the other.
- ▶ Hold for several breaths to allow the muscles to relax.
- ▶ As the muscle relaxes, continue the pressure aiding the muscle stretching.
- ▶ Repeat 3 - 4 times to fully relax muscles.
- ▶ Repeat with hands moving in opposite directions.

# Lower Trapezius & Thoracic Paraspinal & Rhomboid Stretch

- ▶ Patient seated.
- ▶ Sit or stand behind, placing fingers on each side of upper chest.
- ▶ Compress the muscles using thumbs, fingertips or heel of hand.
- ▶ Add pressure in anterior-posterior, cephalad-caudad and right-left rotation directions to feel the muscles tighten to barrier.
- ▶ Hold for several breaths to allow the muscles to relax.
- ▶ Shift fingers to tighten again and repeat.
- ▶ Repeat 3 - 4 times to fully relax muscles.

# Anterior Pectoralis Stretching

- ▶ Patient seated.
- ▶ Stand behind, placing fingers on each side of upper chest at the upper pectoralis.
- ▶ Compress pecs while abducting & externally rotating the arm to feel the muscles tighten to barrier.
- ▶ Hold for several breaths to allow the muscles to relax.
- ▶ Further abduct and externally rotate arm to tighten again and repeat.
- ▶ Repeat 3 - 4 times to fully relax muscles.
- ▶ Maintain hands at top of chest, superior to breast tissue & nipple line.

# Lateral Pectoralis Stretch

- ▶ Patient seated.
- ▶ Stand behind patient, placing fingers on each side of upper chest at the anterior axillary folds at the lateral part of the pectoralis muscles.
- ▶ Compress pecs with fingers from inferior aspect of anterior axillary folds and add pressure in anterior-posterior, and cephalad-caudad directions to feel the muscles tighten to barrier.
- ▶ Hold for several breaths to allow the muscles to relax.
- ▶ Shift fingers in cephalad direction to tighten again and repeat.
- ▶ Repeat 3 - 4 times to fully relax muscles.
- ▶ Maintain hands at anterior axillary folds lateral to breast tissue.

# Thank you

- ▶ Lawrence L. Prokop, DO
- ▶ Professor
- ▶ Department of Physical Medicine & Rehabilitation
- ▶ College of Osteopathic Medicine
- ▶ Michigan State University
- ▶ (517)975-1450
- ▶ Prokop@msu.edu