Speech therapy in treatment of Vocal cord Nodules
Definition

- Small benign swellings/ Edema of the subepithelial tissue
  - Along margins of the vocal cords
    - At the junction of the anterior and middle thirds.
- Usually bilateral
- Pale to pink in color
  - Usually matching the color of the vocal cords.

(Von Leden, 1985)
Normal vocal cords
Normal vocal cord

Vocal cord Nodules  Polyp  vocal fold paralysis
Symptoms

Key features:

- Hoarseness
- Laryngeal hyperfunction
- Reduced pitch
- Breathy vocal quality
- Dysphonia

Symptoms vary in accordance with:

- Extent of lesion
- Length of time since onset
- Laryngeal inflammation

Some children may be asymptomatic

(Pannbacker, 1999; Stemple et al., 2000)
Causes

- Vocal Trauma
  - Loud talking/screaming
  - Singing
  - Cheerleading
  - Coughing/Sneezing
  - Crying
  - Laughing/Cheering
  - Sound Effects/Animal Noises
  - Dehydration

(Bowen, 1997)
Causes

- Medically-related factors:
  - Excessive cough/throat clearing
  - Allergies/upper respiratory conditions
  - Dehydration
  - Gastric reflux

- Psychological, Physiological factors
- Personality
- Affective Disorders: ADD, ADHD.
731 children exhibiting laryngeal pathologies

Incidence of vocal nodules:
• N = 128
• 17.5%

Demographics:
• Male to female ratio = 2:1
• Age ranges most affected:
  Ages 4-5; N = 29
  Ages 6-11; N = 607

(Dobres, Lee, Stemple, Kummer, & Kretschmer, 1990; Pannbacker, 1999)
Prevalence data may be inflated due to misdiagnosis

Chronic hoarseness is often mistakenly attributed to vocal fold nodules

- Reflux Laryngitis
- Polyps
- Intracordial cysts
- Contact ulcers
- Papillomas
- Squamous cell carcinomas
Management Options Include:

- Voice treatment (Speech therapy)
- Surgical Removal
- Voice treatment (Speech therapy) and surgical removal
- No Treatment

(Allen et al., 1991)
Other Things to Consider

- Age of child
- Duration of the nodule
- Presence/absence of symptoms
- Response to previous Tx attempts
- Choice of treatment
  - SLP, ENT, and child/caregiver preference

(Pannbacker, 1999)
Voice Hygiene:

- Educate the client about:
  - Normal voice production
  - Vocal nodules
    - Potential etiologies
    - Effects on voice

- Identify vocally abusive behaviors and environment.

- Decrease vocal abuse
Voice Therapy:

- Develop Voluntary Vocal Management Skills:
  - Reduce amount of talking
  - Reduce vocal loudness

- Tension reduction in musculature of the larynx:
  - Increase the flow of breath during phonation
  - Easy onset of vocal fold adduction
  - Progressive relaxation exercises (e.g., neck rolls, shoulder lifts, soft humming)

(Deal, McClain, & Sudderth, 1976; Hillman, Hammarberg, Sodersten, Doyle, & Holmberg, 2001; Wohl, 2005)
Surgical Intervention:

Advantages:
- Immediate removal of vocal nodules
- High rate of initial success

Disadvantages:
- Nodules are likely to:
  - Recur if strategies are not learned and maintained
  - Resolve at puberty
Disadvantages:

• Post-operatively patients must observe:
  - One week of voice rest
  - Four to six weeks of using a soft voice only
  - Strict adherence to antireflux medications and dietary restrictions

• Additional risks:
  - Scarring
  - Anesthetic complications

(Mori, 1999; Pannbacker, 1999; Wohl, 2005)
Reasons NOT to Recommend Surgical Removal

- Tendency to Recur
  - Difficult to modify a child’s vocal behavior
    - Often remain abusive in the postoperative period
- Vocal Nodules often Spontaneously Resolve near Puberty
  - Cheerleaders may be the exception
- Even when Vocal Nodules Persist, It is possible to improve voice quality with voice therapy

(Koufman, n.d.)
No Treatment

- Tendency to resolve spontaneously without treatment
- Therefore, Treatment is unnecessary
- Some Children may not be compliant
- The child might not be aware of the dysphonia
- The child might be asymptomatic

(Pannbacker, 1999)
Choice of Treatment

- 81% also felt voice therapy can “always” or “frequently” be helpful.
- 97% of SLPs chose initial voice therapy treatments for both children and adults.
- 87% felt voice therapy can “frequently” be effective.
- 94% “always” or “frequently” refer children with suspected vocal nodules to an ENT (72% of adults).

(Allen et al., 1991)
There is limited data on the outcome of voice treatment for children with vocal nodules. The majority of studies about vocal nodules have been of adults. Only 4 studies included children. Both the number and quality of research studies need to increase in order to accurately state that voice treatment is efficacious. However, voice treatment is currently the most favored method for treating children. If chosen, surgery is often the last option. (Pannbacker, 1999)
References


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