
بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Effect Of Voice Therapy In Unilateral Vocal Fold Paralysis

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What is the aim of treatment of UVFP

Improve glottal competence essential for:

- Voice production
- Protective swallowing functions

What is expected from voice therapy

- Improve voice quality (softer confidential speaking voice).
- Breathing control.
- Eliminate undesirable compensatory hyperfunctional behaviors (rough strained voice).
- Learn pt compensatory strategies (head turning and digital pressure).
- Prevention of aspiration & swallowing rehabilitation.

Techniques of Voice therapy in UVFP

- **Hard glottal attack and pushing:** to narrow the glottis by building air pressure without letting air out then release the vowel.

Avoided dt supraglottic hyperfunctional

Used only for 1 week at initial treatment

Modified pushing: isometric pushing with vowel stretching and gliding lower pitch (encourage contraction of thyroarytenoid ms)

- Vocal pitch controlled mainly by length, mass and tension of VF which depend mainly on thyroarytenoid ms
- Vocal intensity controlled mainly by glottal resistance and airflow.

Yamaguchi 1993

Techniques of Voice therapy in UVFP

Smith accent method

- Abdomino-diaphragmatic breathing.
- Accentuated rhythmic vowel play and later articulation.
- Body and arm movements.

Softer breathy voice is much better than louder, strained and effortful voice

Kotby 1996

Khidr 2003

Techniques of Voice therapy in UVFP

How accent method improve glottal competence:

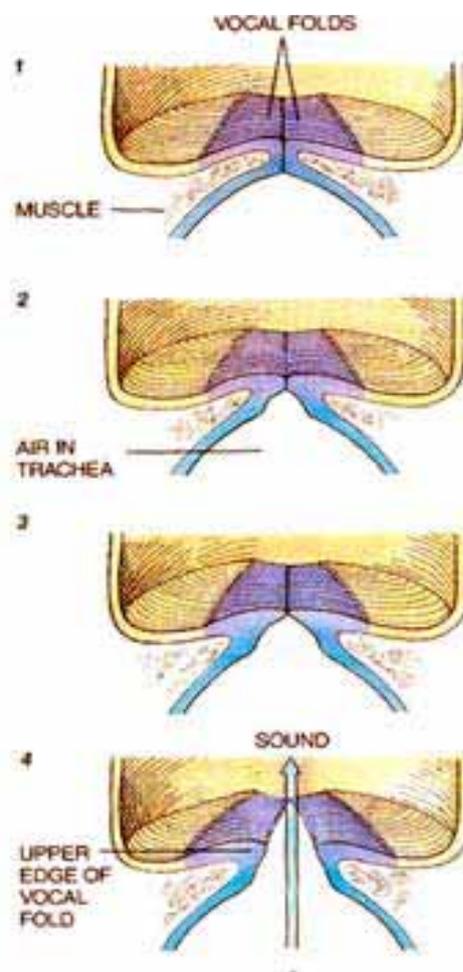
Enhance Bernoulli effect

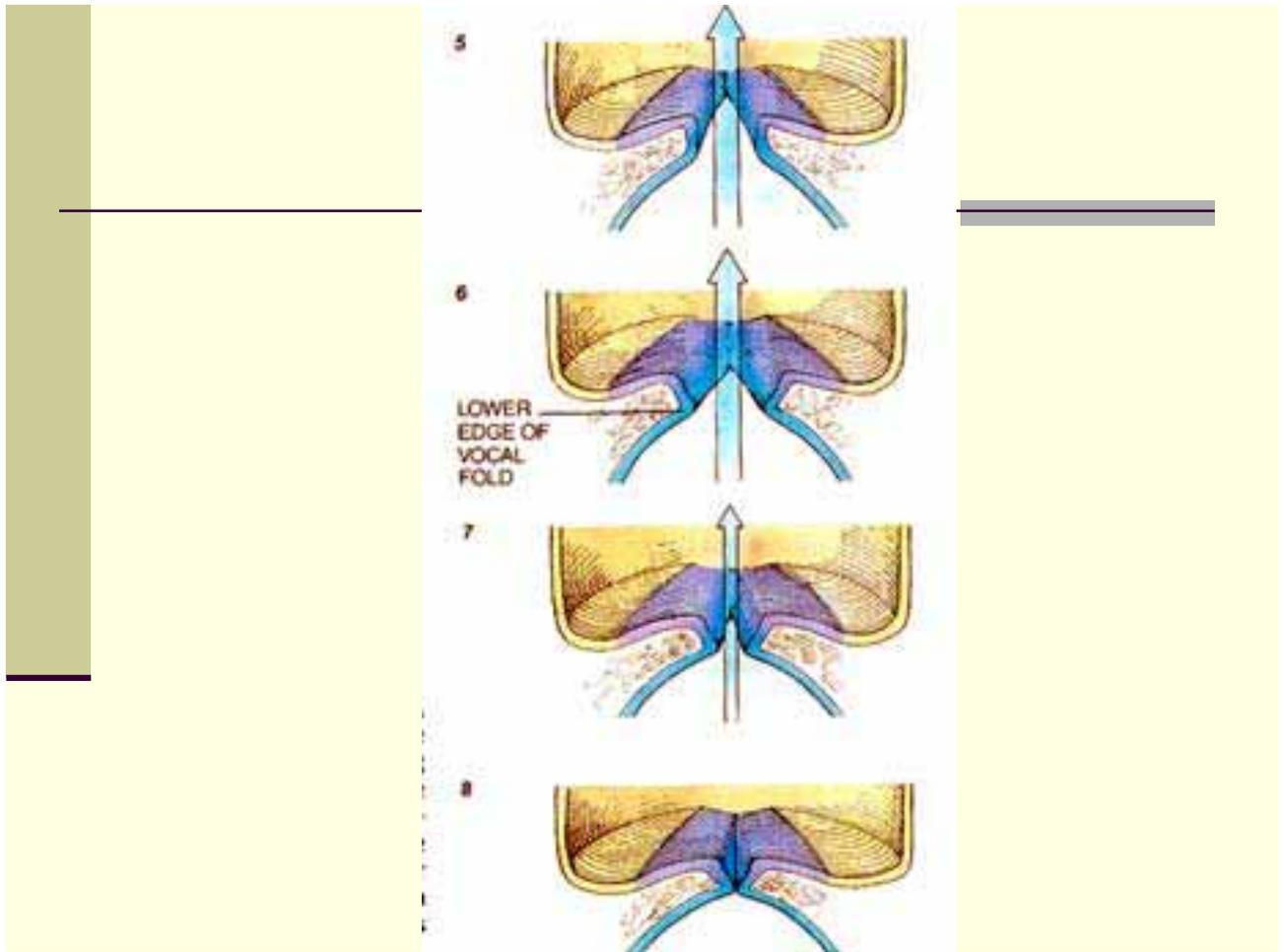
Sustained phonation produced by holding the VF in the air stream which cause VF vibration

Aerodynamic-myoelectric theory

depend on the principle of **Bernoulli's effect**:

Increase flow at constriction leads to decrease pressure perpendicular to the flow





Video View Endoscope/Camera Tags Tools Window Help

Video Play Mode Tag Image Previous Tag Next Tag

Freq: 173 Hz
Amp: 75 dB
Phase: ---
Light: Xenon
Mode: Fast

Amplitude

Time (12ms)

Exam Notes:
Patient presents with mild dysphonia.

25.826 Time Repeat In 17.718 Repeat Out 24.791

Image Compression - 7x

000 01:33.693

Slow Motion Speed: 10

Repeat Mode BP On In Out

Audio

mp, press F1 PLAY MODE PAUSE 1 EXAM SAVED

Techniques of Voice therapy in UVFP

- Compensatory strategies
- Half swallow boom Mc Farlen 1998
- Resonant voice therapy Roy 2003
- Twang method Lombard 2006
- Confidential voice therapy
- Vocal function exercises Stample 2000
- Appropriate tone focus
- Lip and tongue trills
- Eliminate undesirable compensatory hyperfunctional behaviors

Techniques of Voice therapy in UVFP (swallowing rehabilitation)

- Postural change
- Diet modification
- Avoid talking while eating
- Supraglottic swallowing
- Super-Supraglottic swallowing

Treatment plan

- **Initial voice therapy**
- **EMG** at 6 months to detect denervation with either observation and voice therapy or
- **Surgery if:**
 1. Persistent significant symptoms after medical voice therapy
 2. Urgent need for voice improvement
 3. Significant aspiration

Benninger 2007

Factors affecting treatment decision in UVFP

- Patient concern and voice requirement.
- Overall voice quality.
- Objective voice and laryngeal assessment
- Patient general condition.
- Ease and cost of treatment.
- Predictability of outcome.

Efficacy studies

	Therapy female	Surgery female	Therapy male	Surgery male
No of pt	12	8	14	8
% has incompt	61%	100%	40%	62%
% improved	92% (11/12)	88% (7/8)	71% (10/14)	88% (7/8)

Heur et al 1997

Efficacy studies

- 12 pt medialization

18 pt with voice therapy

Both show improvement in voice quality and change in MFR & leak flow [Colton and Casper 1996](#)

- In both studies: higher pre treatment flow rate in surgery case; so excessive MFR from incomplete glottic closure are good predictor of the need for surgery.

Conclusions

- Voice therapy is the first line of therapy in UVFP.
- Voice therapy is alternative and equal to surgery in 80% of cases.
- Proper initial pre-treatment assessment including diagnostic voice therapy is essential to select the best line of treatment.

Thank you

