Cricothyroid approximation: How I do it

Dr Jeeve Kanagalingam
MA (Cambridge), BM BCh (Oxford), DLO, DOHNS, FRCS (ORL-HNS), FAMS

Consultant ENT / Head and Neck Surgeon
Tan Tock Seng Hospital

Adj Asst Professor in Otolaryngology
Lee Kong Chian School of Medicine
Transsexuals are distinct from crossdressers and transvestites

- Strong and persistent cross-gender identification
- Persistent discomfort with their assigned natal sex and its associated gender role
- 1 in 12,000 incidence
- Distress with a high suicide rate

*The TRANSSEXUAL PHENOMENON*
Harry Benjamin, M.D.
THE JULIAN PRESS, INC.
New York
Sex Reassignment is effective in addressing gender dysphoria

**Hormonal treatment**
- Oestradiol Valerate
- Ethinyloestradiol
- Medroxyprogesterone Acetate
- Dydrogesterone
- Cyproterone Acetate
- Flutamide
- Nafarelin Acetate
- Goserelin Acetate

**Surgery**
- Bilateral orchidectomy
- Penectomy
- Clitoroplasty
- Penile Inversion
- Vaginoplasty
- Colovaginoplasty
- Augmentation mammoplasty
- Facial feminization surgery
- Voice surgery
Many transsexuals have successfully completed sex reassignment...
A masculine voice is an embarrassment

- Masculinity in voice is determined by pitch, resonance and timbre
- Speech therapy focusing on a falsetto speech and female intonation is of limited success – particularly in involuntary speech
- Oral and parenteral oestrogens have no effect on vocal folds or laryngeal framework in adulthood
- Resonance and timbre is largely determined by length of the upper airway – is difficult to alter
- Fundamental speech frequency ($F_o$) of 155 – 160 Hz is critical for feminine perception – can be achieved
Surgery can alter pitch elevation

\[ F_0 = \left( \frac{1}{2}L \right) \times \sqrt{\frac{T}{P}} \]

- Length
- Mean longitudinal stress
- Tissue density

- Wendler’s Glottoplasty / Anterior web creation
- **Cricothyroid approximation**
- Laser-assisted voice adjustment (LAVA)
- Laser resection of thyroarytenoid (Abitbol)
- Anterior cord reduction and advancement (Kunachak)
CTA is the most popular approach

- Procedure first described by Isshiki in 1974
- It is physiological and reversible
- Cricothyroid approximation increases vocal fold tension. Pickuth estimated an 18 Hz rise for every 1 mm of approximation
- Isshiki’s series of 11 in 1983 only included 1 male-to-female transsexual. Most were women with androphonia
- Initial studies show variable results with success rates of between 38% (Neumann, 2002) and 85% (Wagner, 2003)
- The procedure allows for laryngeal chondroplasty to reduce the prominence of the thyroid (Adam’s apple)
Objective results

- 21 Male-to-female transsexuals undergoing CTA
- Mean age = 39 (range, 25 – 55 years)
- 4/21 smokers
- 20/21 had simultaneous thyroid chondroplasty
- Median post-operative stay of 1 day (range, 1-3)
- No immediate post-op complications
CTA improves pitch...
In summary

Cricothyroid Approximation and Subluxation in 21 Male-to-Female Transsexuals

Joong Kung Dong, MA, MBBS, DLO; Chertoe Georgiadi, MBBS, DLO; Gary R. Wood, FRCSLT; Saki Akevada, MBBS, DOHNS; Ouri Sandfrin, FRCS (OBEL-HNS); Anthony D. Chisnall, FRCS, MRCVS

Objectives: To evaluate the medium-term outcome of cricothyroid approximation and subluxation (CTAS) with postoperative speech therapy for pitch elevations in male-to-female transsexuals.

Methods: Retrospective study of male-to-female transsexuals who underwent pitch-raising surgery between November 1998 and August 2001. Methods: Twenty-one male-to-female transsexuals opted for surgical manipulation of their voice after inadequates improvements with speech therapy alone. Electroglottographic measurements were obtained by a single speech therapist of modal fundamental frequency and the percentage of irregularity before, at 2 weeks, and 6 months after surgery. All 21 patients underwent CTAS, and 21 underwent simultaneous cosmetic thyroid chondroplasty by a single surgeon. Results: Electroglottographic results 2 weeks after surgery showed an average postoperative gain in modal frequency of free speech of 7.45 Hz (95% confidence interval: 2.5–9.1 Hz, P < .001). There was a consistent average gain of irregularity of 5.8% (95% CI 0.7–15.6%, P = .67). At a mean follow-up of 6 months after six sessions of speech therapy (n = 15), there was a decrease in irregularities to preoperative levels. The overall gain at 6 months in modal frequency of free speech was 6.9 Hz (95% CI 0.6–13.3%, P < .001). Smoking and age did not predict a worse outcome.

Conclusions: Cricothyroid approximation effectively raises pitch in male-to-female transsexuals. There is a consistent increase in voice irregularities that is effectively addressed by speech therapy.

Key Words: Pitch-raising surgery; male-to-female transsexual; cricothyroid approximation.

INTRODUCTION

Transsexualism is a recognized disorder of gender identity in which people believe themselves to be born into the “wrong” gender body. The prevalence is estimated at 1 in 87,000 with three quarters being male-to-female transsexuals. Transsexuals are distinct from transvestites and transsexualism and are not homosexuals. They have a strong sense of their male identity and may have a history of self-harm and suicide attempts. The acceptance of this disorder has led to a variety of medical and surgical approaches for physical alteration to help male-to-female transsexuals conform to their conceptual sex.

The use of hormone blockers in pre- and postoperative forms is widely used by male-to-female transsexuals. These lead to smooth face skin and longer breasts. Surgical procedures are often used after the patient has successfully led a life as a woman for some time. These include gender conversion surgery, nonsurgical voice contouring, breast augmentation, chondroplasty, and liposuction.

Although these theories give patients a female appearance, their unsexed voice and prominence of the Adam’s apple often remain and are a frequent cause of embarrassment in public. Europe has no effect on the vocal cords or laryngeal framework in childhood, and consequently these patients retain a phonologically male larynx. Even if pitch is raised functionally, in uncontrolled situations like yawning, coughing, laughing, and sneezing, the male voice appears in some cases, the habitually raised voice may lead to functional and organic voice pathology.

Although such can be done with speech training to achieve perceived femininity in voice without raising pitch, surgical pitch elevation is often necessary. Of the many strategies that have evolved, cricothyroid approximation or cricothyroidotomy is the most popular. This was first described by Leskda et al.[1] (larynx type IV dissection) and was used in a series of 21 patients, all but 1 a male, suffering from andropause. The rationale of this technique is that by increasing vocal fold tension, one can increase fundamental pitch frequency. Despite its paper...
Just to check you were listening

Female
Shemale
Female
Shemale
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Shemale
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Shemale
Shemale
Thank you