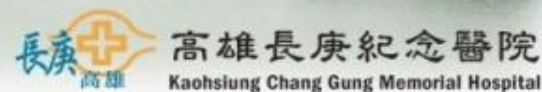


Reconstruction of circumferential hypopharyngeal defect after tumor ablation with lateral thigh flaps: the Omega design



Ching-Hsiang Yang, Johnson Chia-Shen Yang

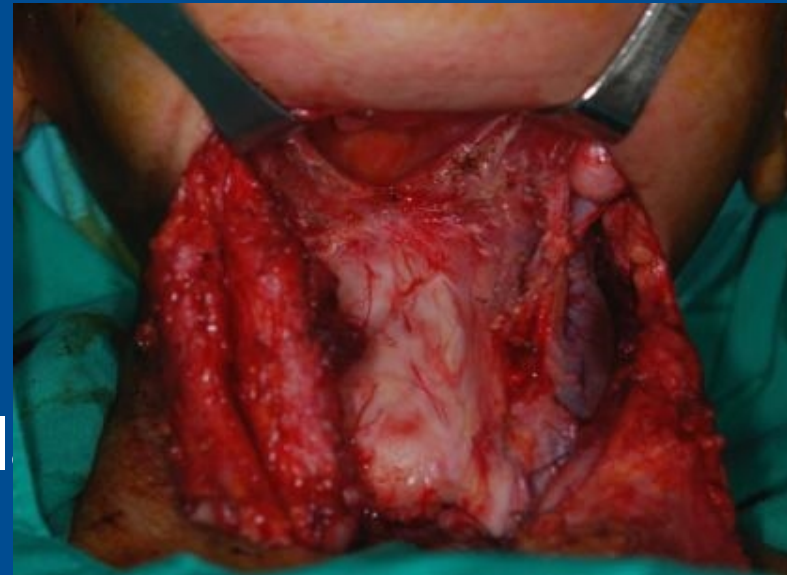
Division of Plastic and Reconstructive
Surgery, Department of Surgery,
Kaohsiung Chang Gung Memorial
Hospital

Nothing to disclose

Introduction

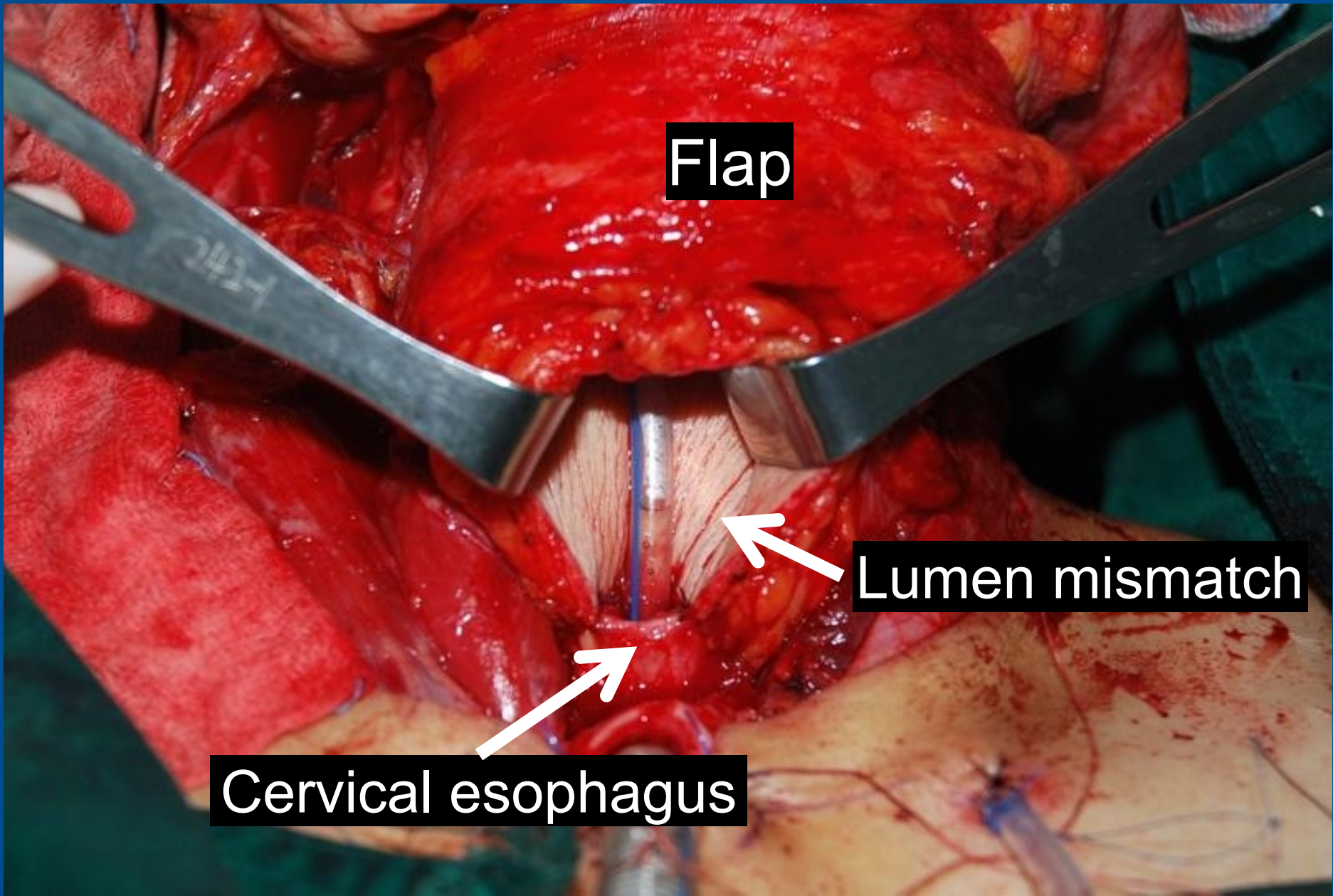
Tubular hypopharyngeal defect reconstruction choices

- Pectoralis major flap
- Gastric pull-up
- Free jejunal flap
- Free radial forearm flap
- Free anterolateral thigh flap



The disadvantages for these above-mentioned flaps:

- Fixed lumen on both ends (mis-matched lumen)
- No spare tissue for use



Flap

Lumen mismatch

Cervical esophagus

Object of this study

To investigate the feasibility of **Omega flap** design to improve luminal mismatch for tubular **hypopharyngeal defect** reconstruction.



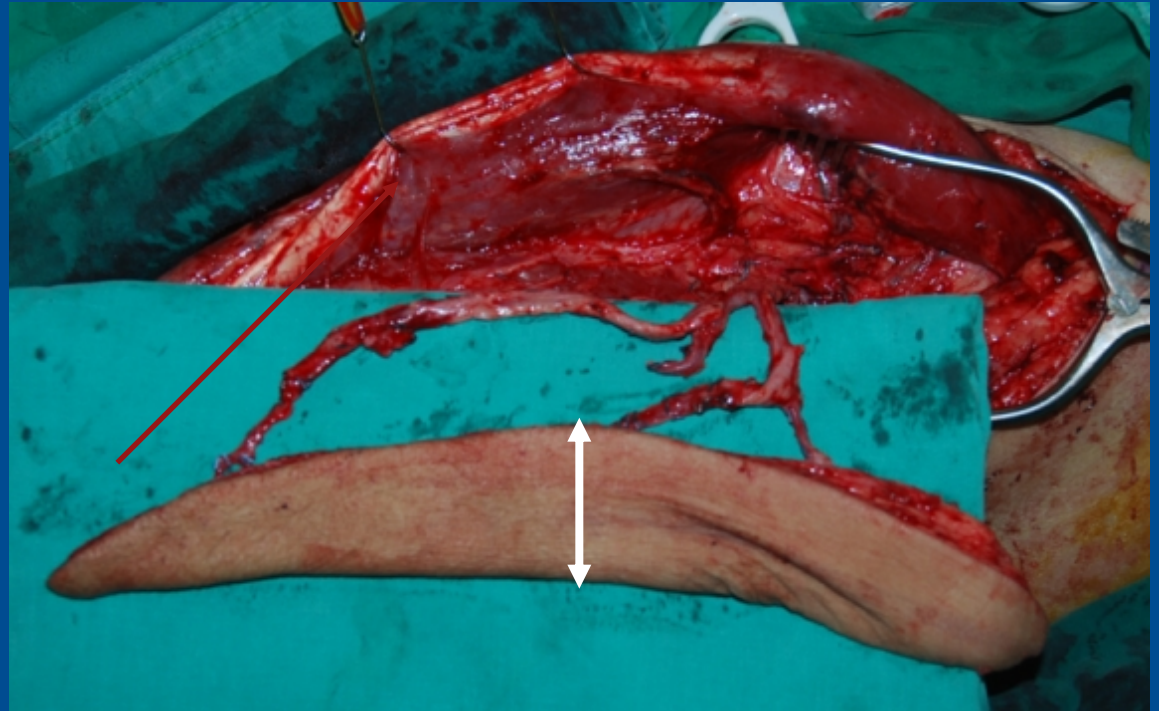
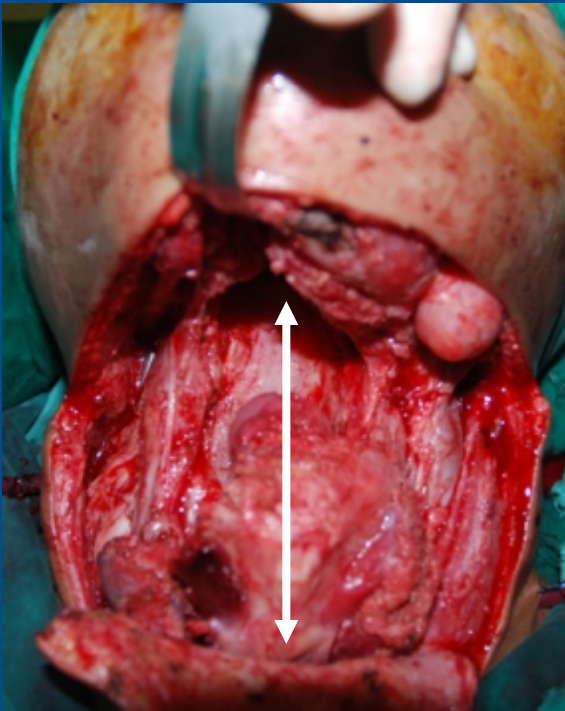
Patients and Method

Sep 2009~ April 2014

- 63 free flaps for hypopharyngeal reconstruction
- Patch 40; Tubing 10
- Omega flap tubing 13 (12 M, 1 F)

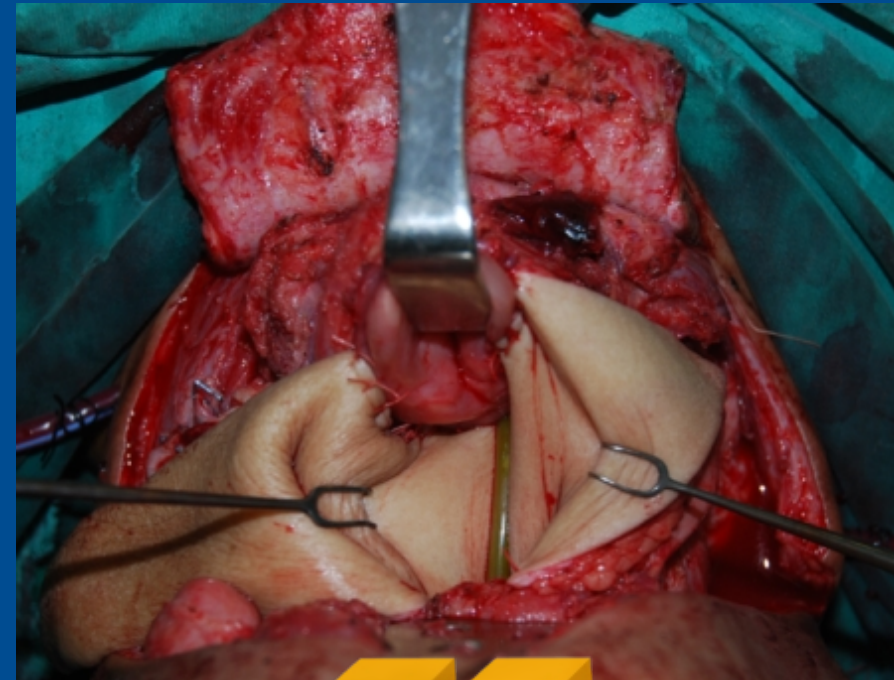
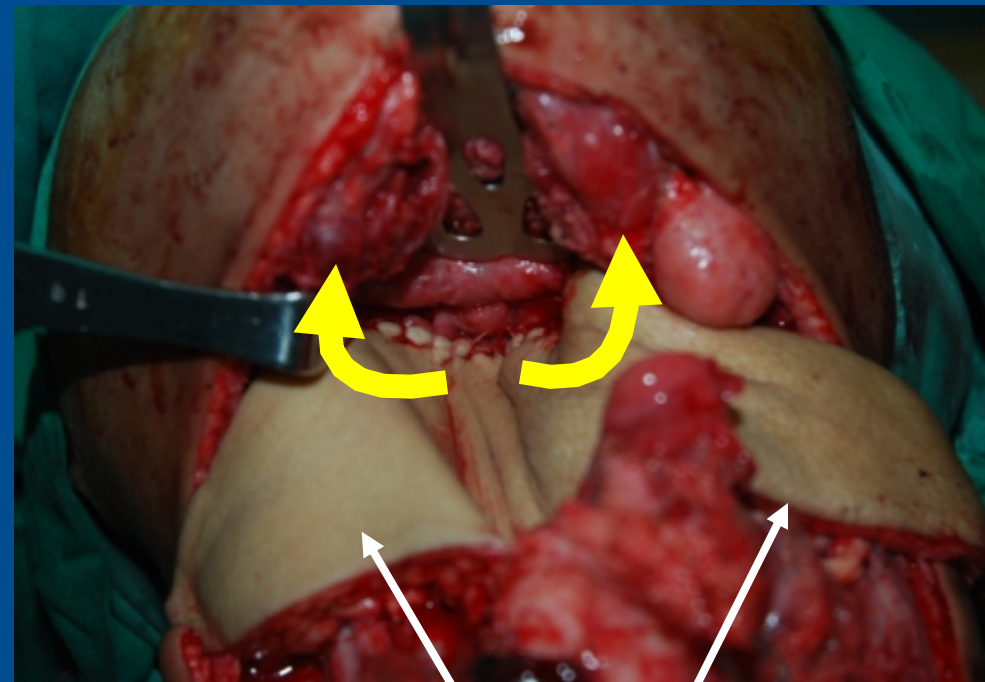


Omega Design (1)



hypopharyngeal defect length = flap width

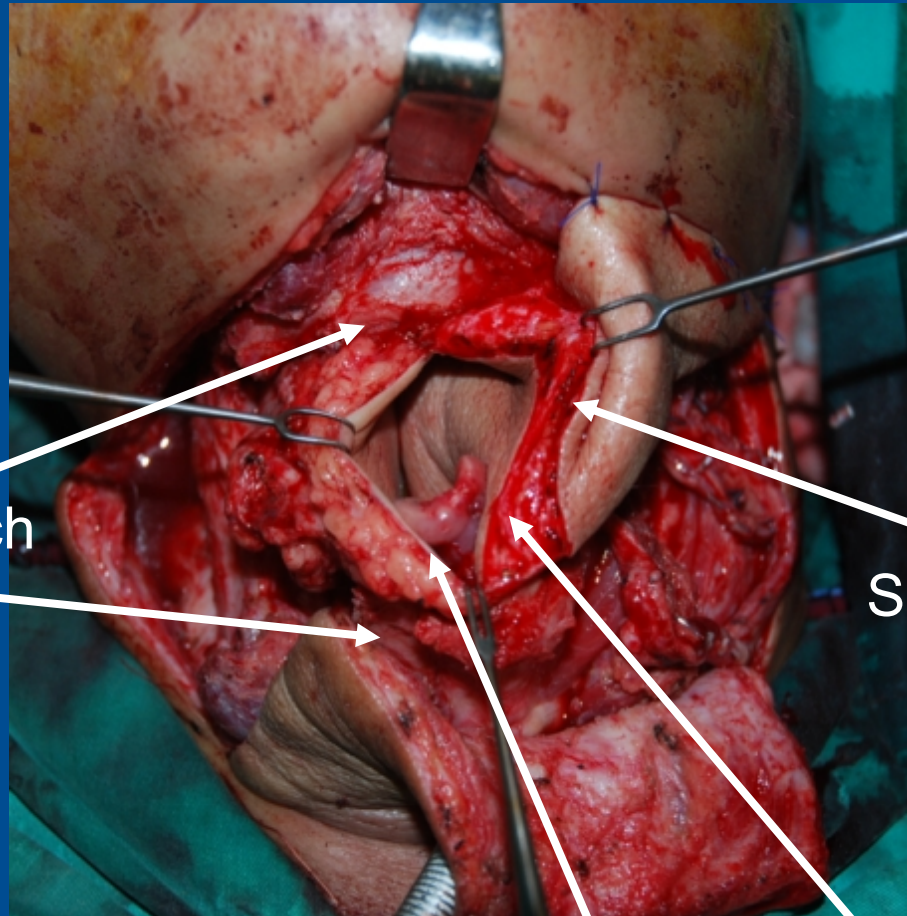
Omega Design (2)



Excessive flap tissue



Omega flap Design (3)



Perfect Lumen match

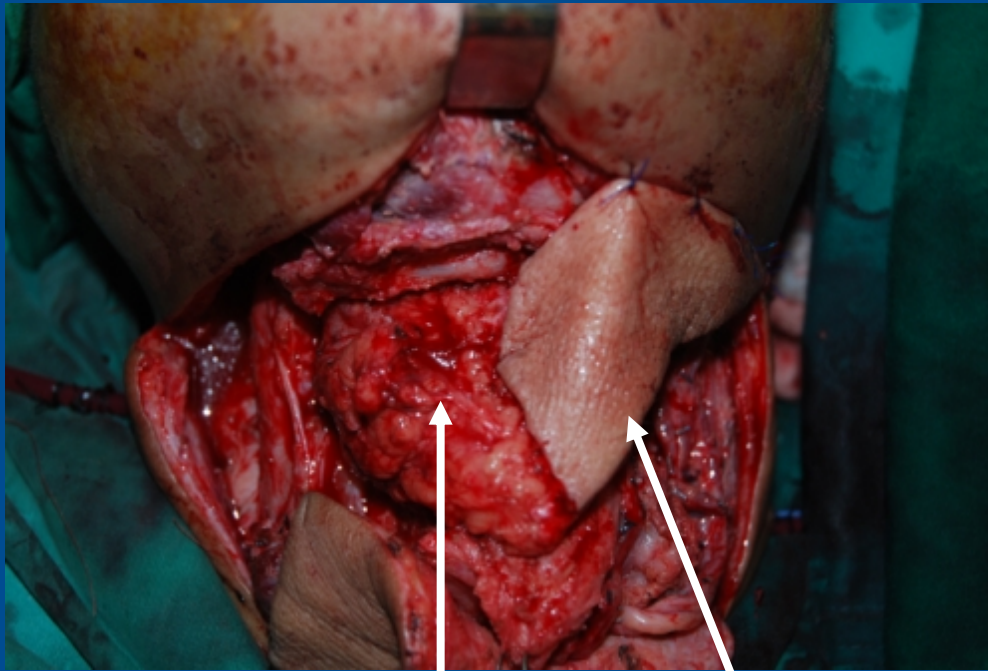
Spare flap tissue

inner stitch

outer stitch

De-epithelialized for double-breasted stitching

Omega flap Design (4)



Double-breasted stitching

Excessive flap tissue for Neck skin defect



Spare flap tissue for neck skin defect reconstruction prn

Results

- All flaps survived
- Donor site STSG: 6/13
- Wound infection rate: 30.8%
- Fistula rate: 38.5%
- Surgical debridement: 5/12 (41.7%)
- Secondary reconstruction: Internal mammary artery flap (1)



Discussion (1)

Advantages: Omega Design

- Allows exact luminal match on both ends for smooth passage
- Easier inset
- Excessive flap tissue for:
 - Dead space
 - Double-breasted stitching
 - Neck skin defect reconstruction



Discussion (2)

Disadvantages: Omega design

- Slightly longer ischemic time
- ALT donor site STSG (50%)
- Double-breasted stitch is directly under neck skin incision line (10/12)



Discussion (3)

- Fistula rate(38.5%); Wound infection rate (30.8%)

Fistula: 9-33%. Wound complications: 25%

Yu et al. Cancer. 2010 Apr 1;116(7):1718-24

Clark et al. Laryngoscope. 2006 Feb;116(2):

- Possible causes:
 - Pre-op CCRT: 12/13 (92.3%)
 - Poor nutritional status (4 pre-op gastrostomy)
 - Huge wound
 - Suturing technique ?

Discussion (4)

Flap comparison	Laryngo- esophagus	cervico- esophagu s	Double- Breasted stitch	Spare tissue
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Jejunal flap	too small	matched	no	no
Radial forearm flap	matched	too big	no	no
ALT flap (Spiral)	matched	too big	no	no
ALT flap (Omega)	matched	matched	yes	yes

Conclusion

- The quest for a perfect flap to reconstruct tubular hypopharyngeal defect continues.
- This Omega flap design offers an alternative choice to enhance patient outcome.
- More case number and long term f/u is needed.