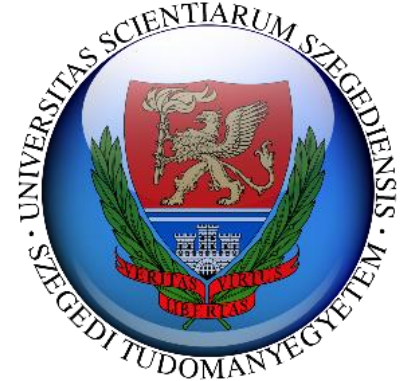


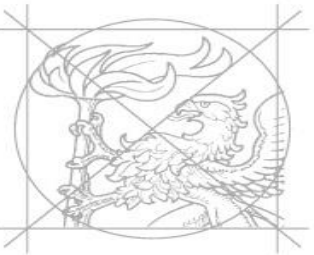
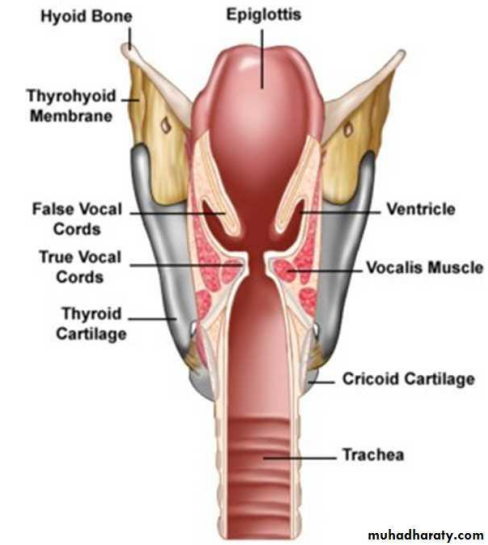
The role of laser surgery in the treatment of subglottic stenosis

László Szakács M.D., Ph.D.

LAMELIS 2019, Szeged, Hungary

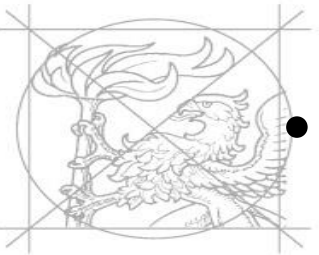
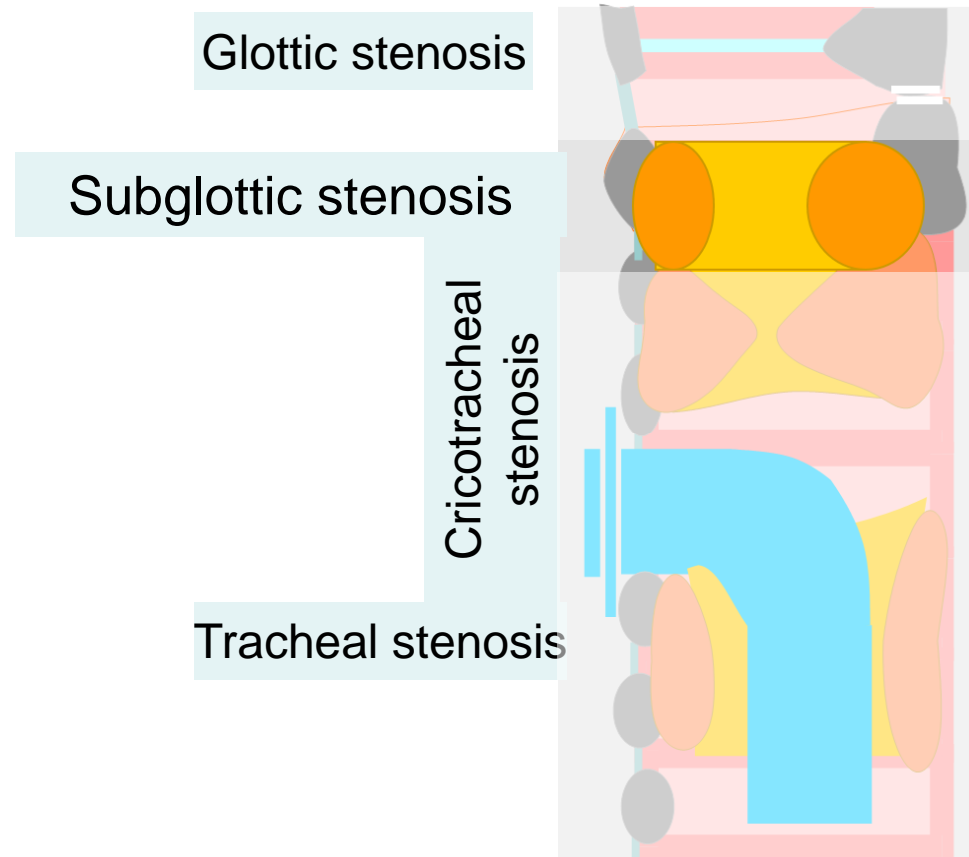


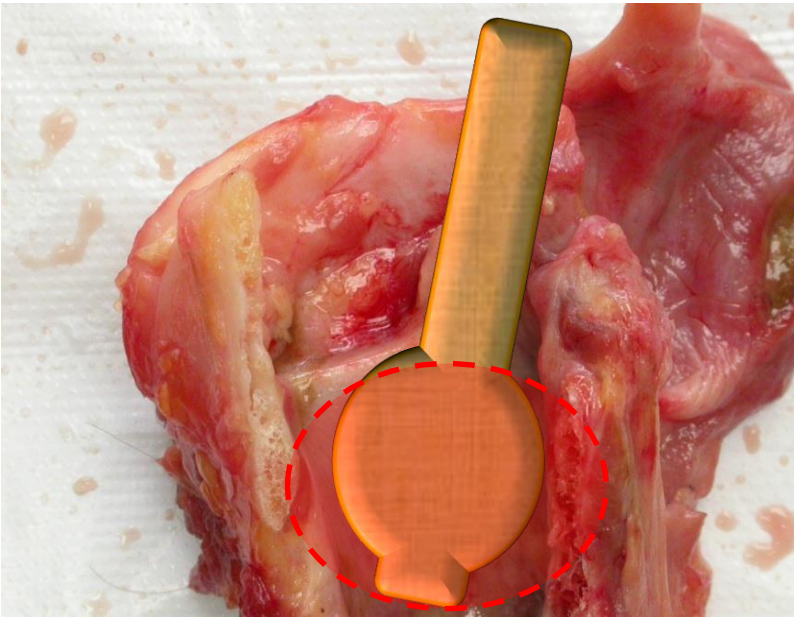
- **Glottis**
 - Vocal cord paralysis
 - Unilateral vocal cord paralysis
 - Bilateral vocal cord paralysis
 - Posterior glottic stenosis
- **Subglottis**
 - **Subglottic stenosis**
- **Trachea**
 - Tracheal stenosis



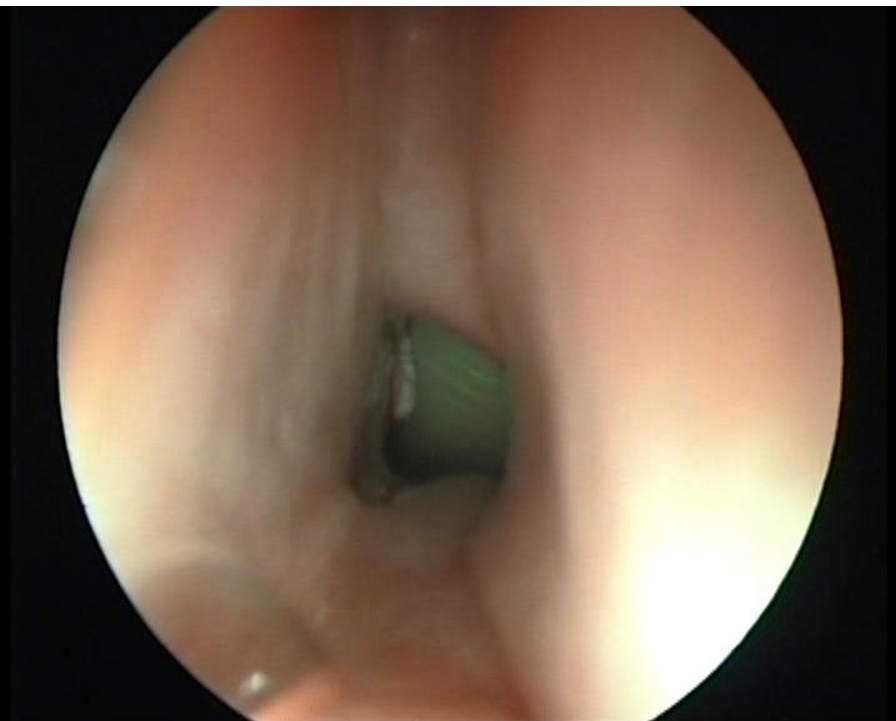
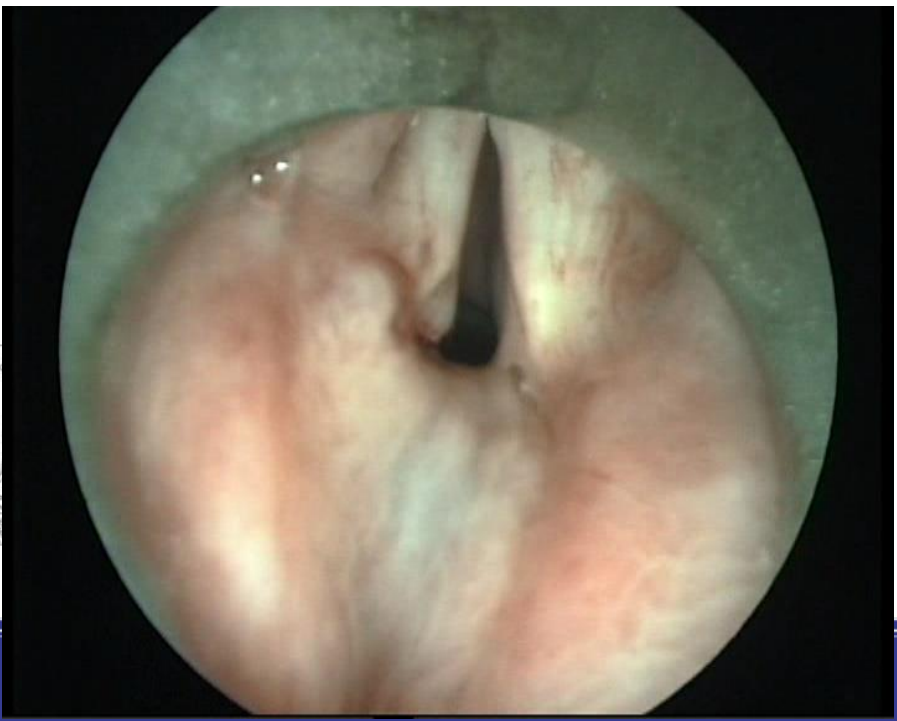
Subglottic stenosis

- Congenital
- Acquired (95%):
 - **Long-term intubation**
 - Collar surgery
 - malignancy
 - Autoimmune disease
 - infection
 - *GERD*
- Idiopathic



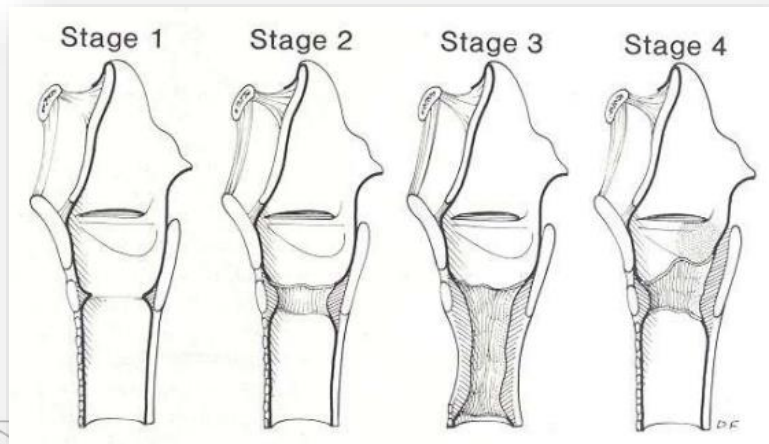


Endotracheal
intubation
↓ 2-3 days
Tracheostomy



Subglottic stenosis classification

McCaffrey



Myers - Cotton classification

Classification	From	To
Grade I	 No Obstruction	 50% Obstruction
Grade II	 51% Obstruction	 70% Obstruction
Grade III	 71% Obstruction	 99% Obstruction
Grade IV	No Detectable Lumen	



Treatment options for subglottic stenosis

- **Observation**



- **Tracheostomy** II.



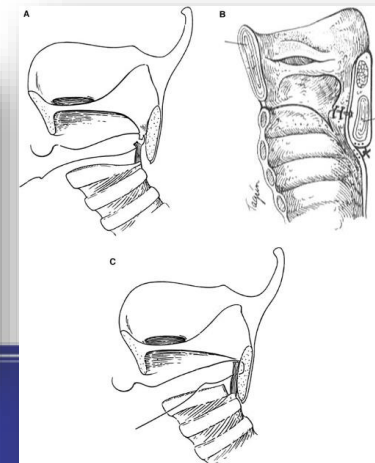
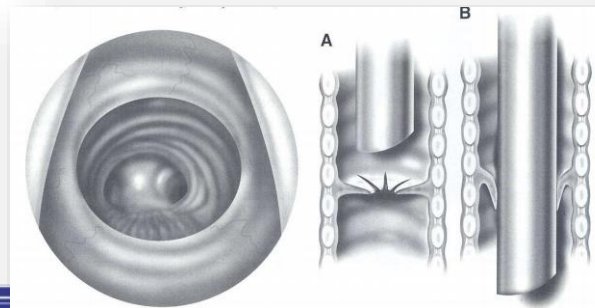
- **Augmentation of the airway**

1. **Endotracheal**

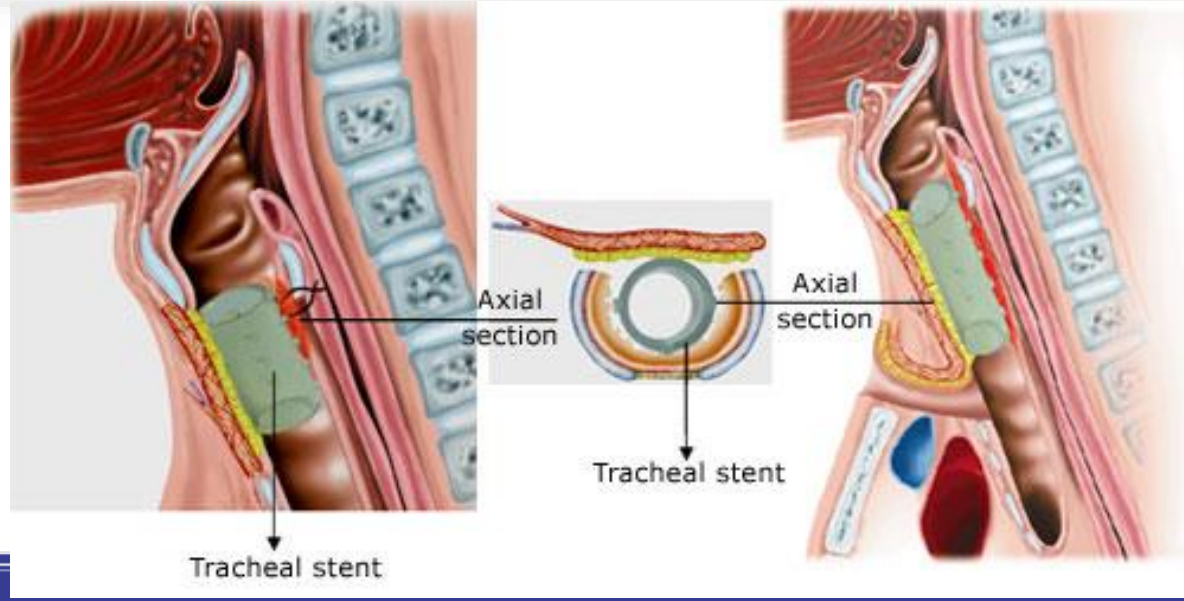
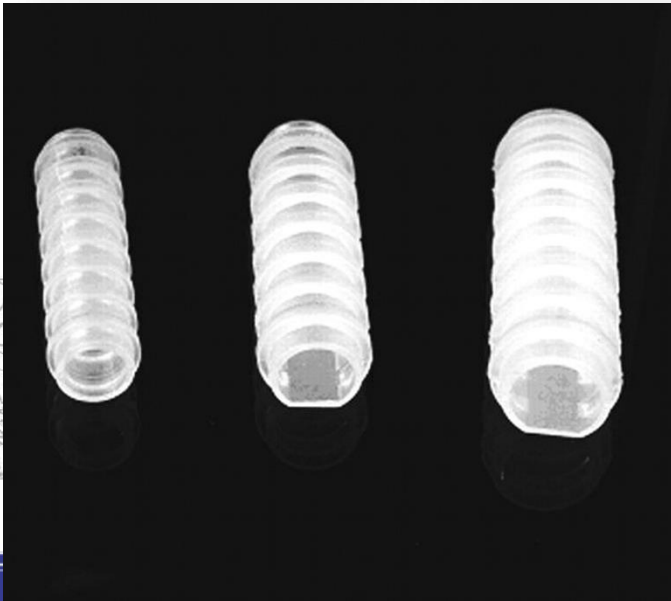
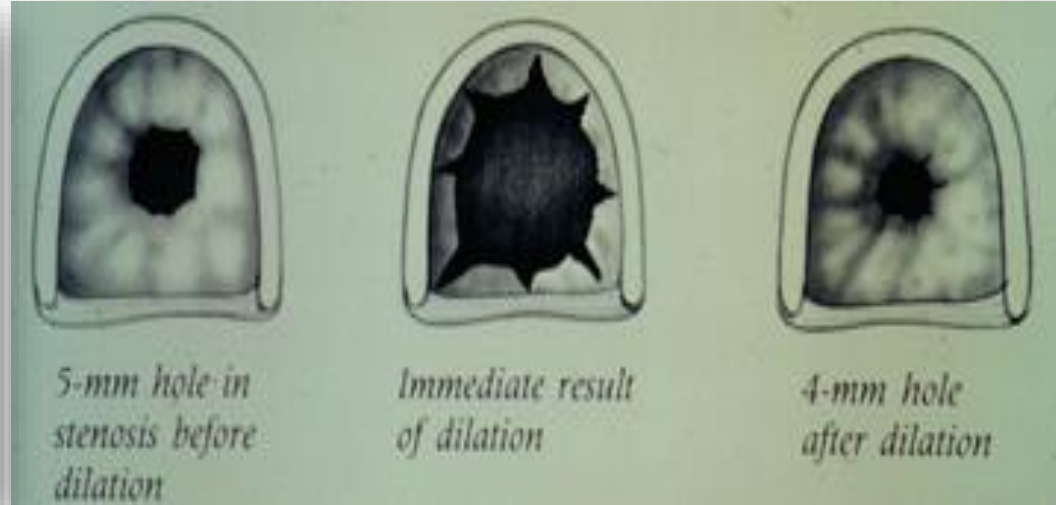
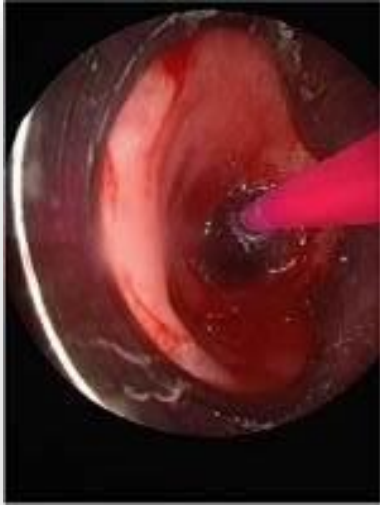
1. Laser
2. Dilatation
3. Stent

2. **Open surgery**

1. Slide laryngotracheoplasty
2. Cricotracheal resection
3. Laryngotracheal reconstruction



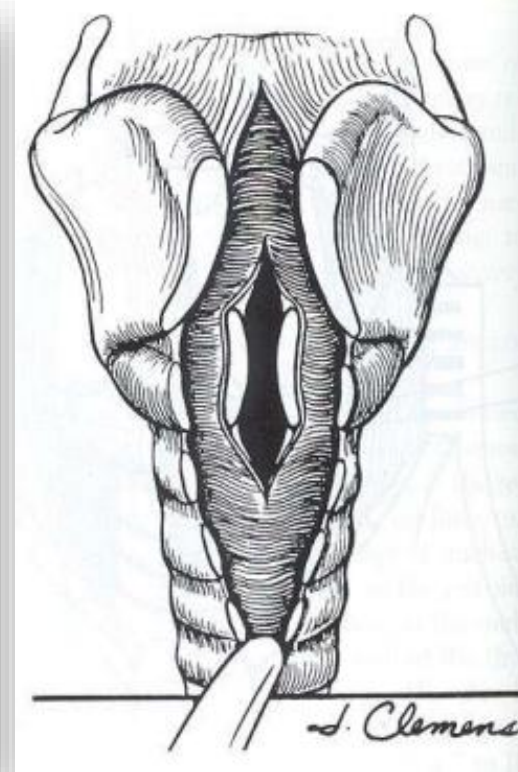
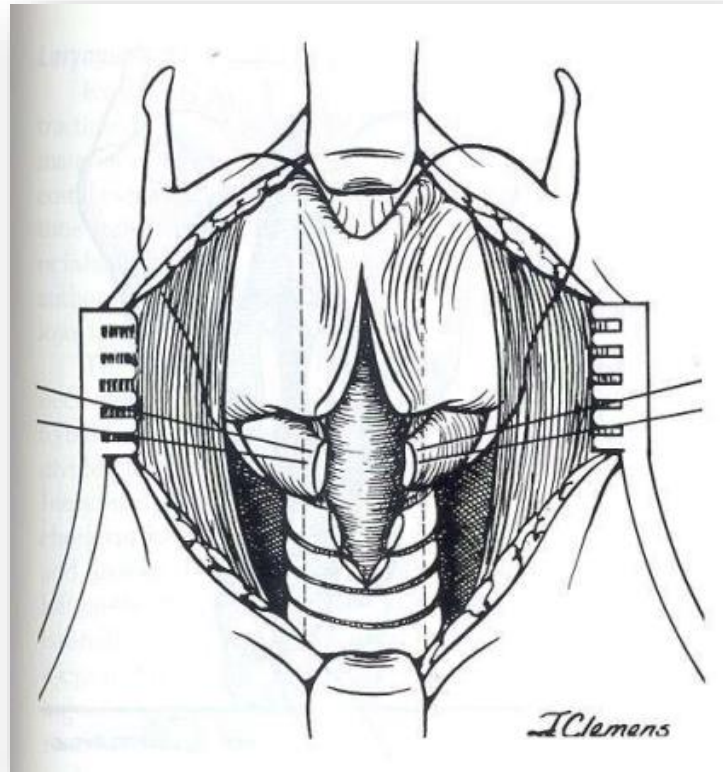
Endotracheal solution – dilatation and stenting



Laryngotracheoplasty (LTP) without graft

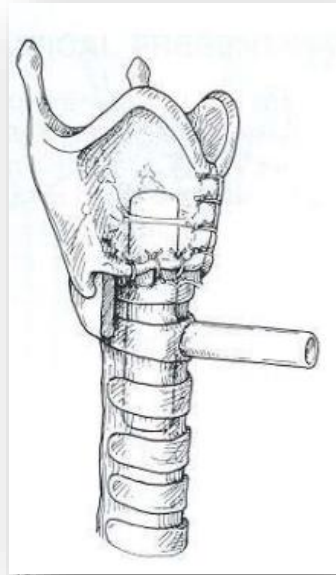
Anterior Cricoid Split (ACS)

Posterior Cricoid Split (PCS)

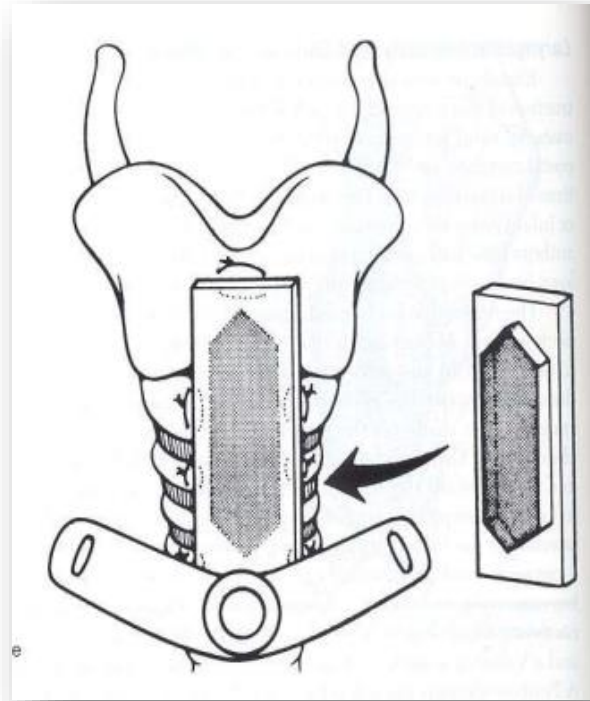


Laryngotracheoplasty (LTP) with graft

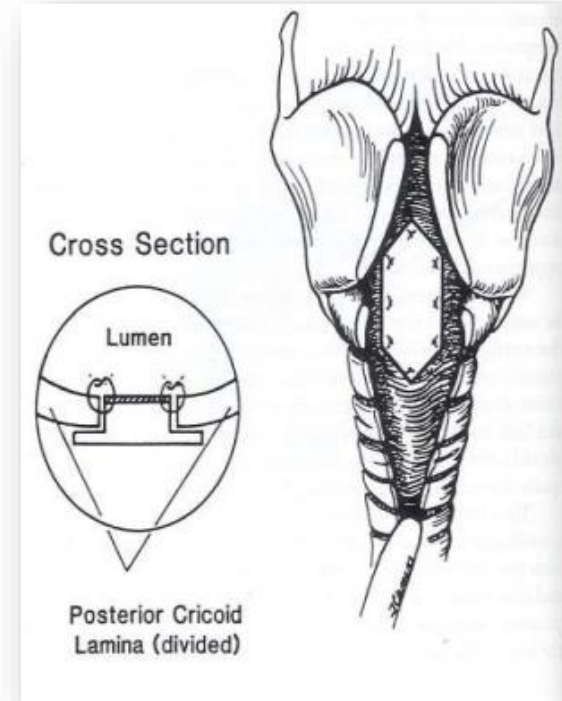
- Graft: cartilage, rib graft
- Tracheostoma, stent



Anterior graft



Posterior graft



SS-LTP

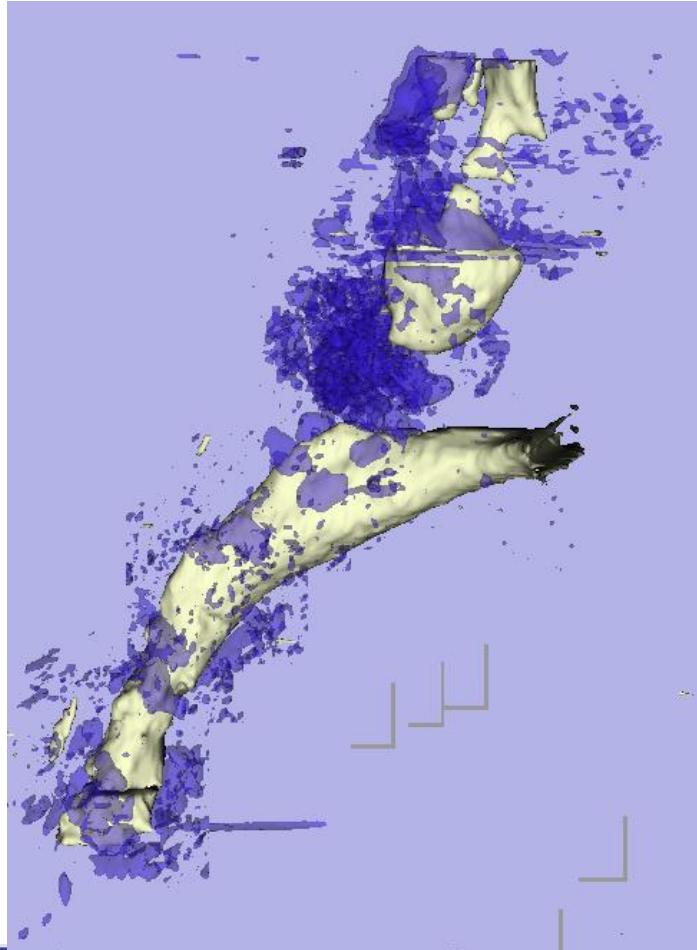
ETT



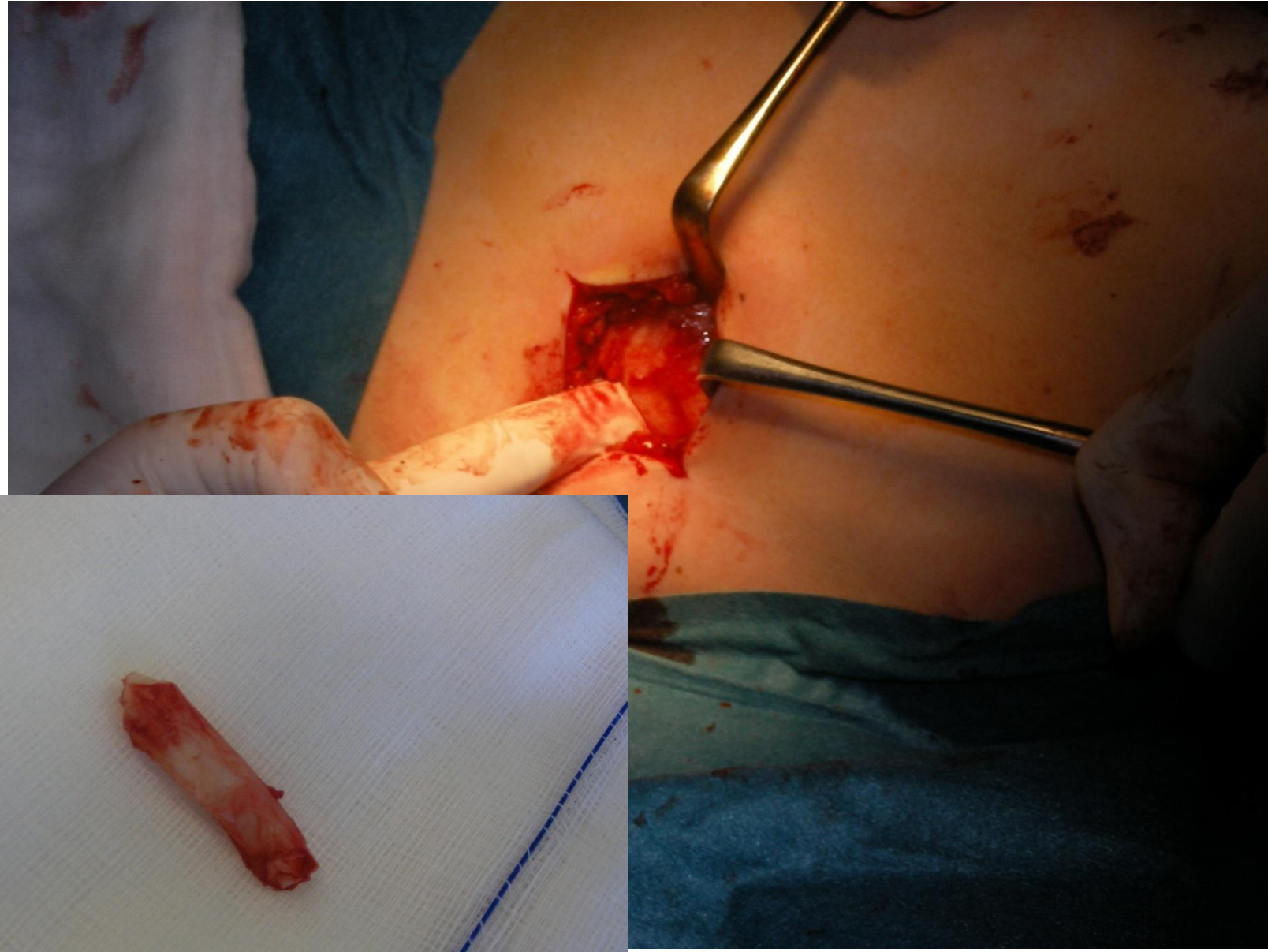
Interact Cardiovasc Thorac Surg. 2011 Oct;13(4):453-5. doi: 10.1510/icvts.2011.271502. Epub 2011 Jul 28.

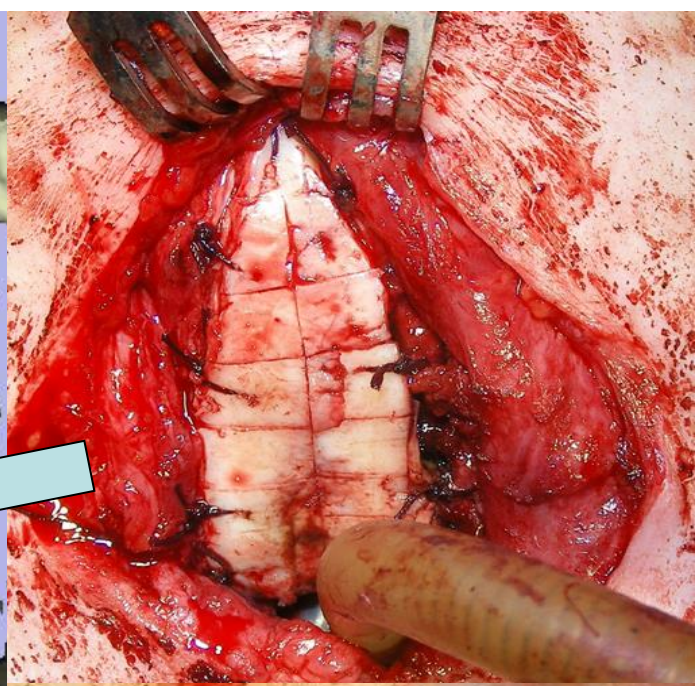
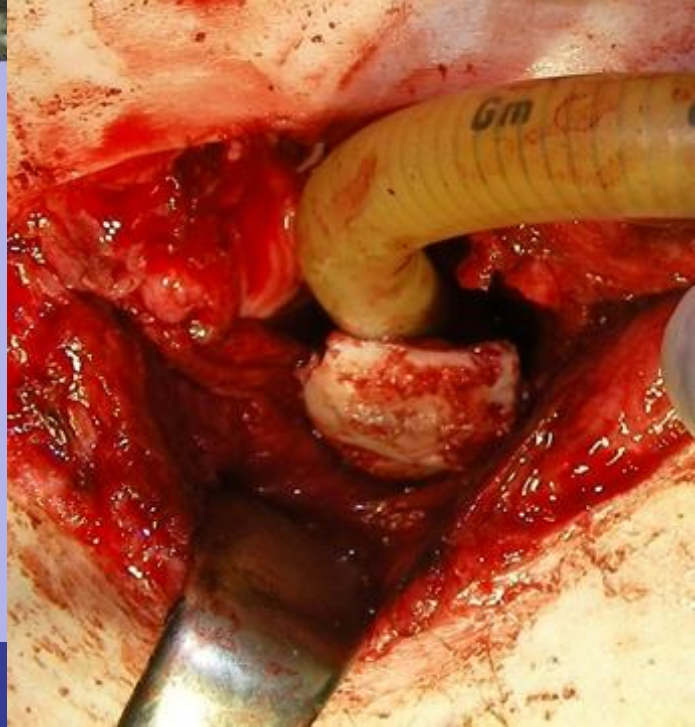
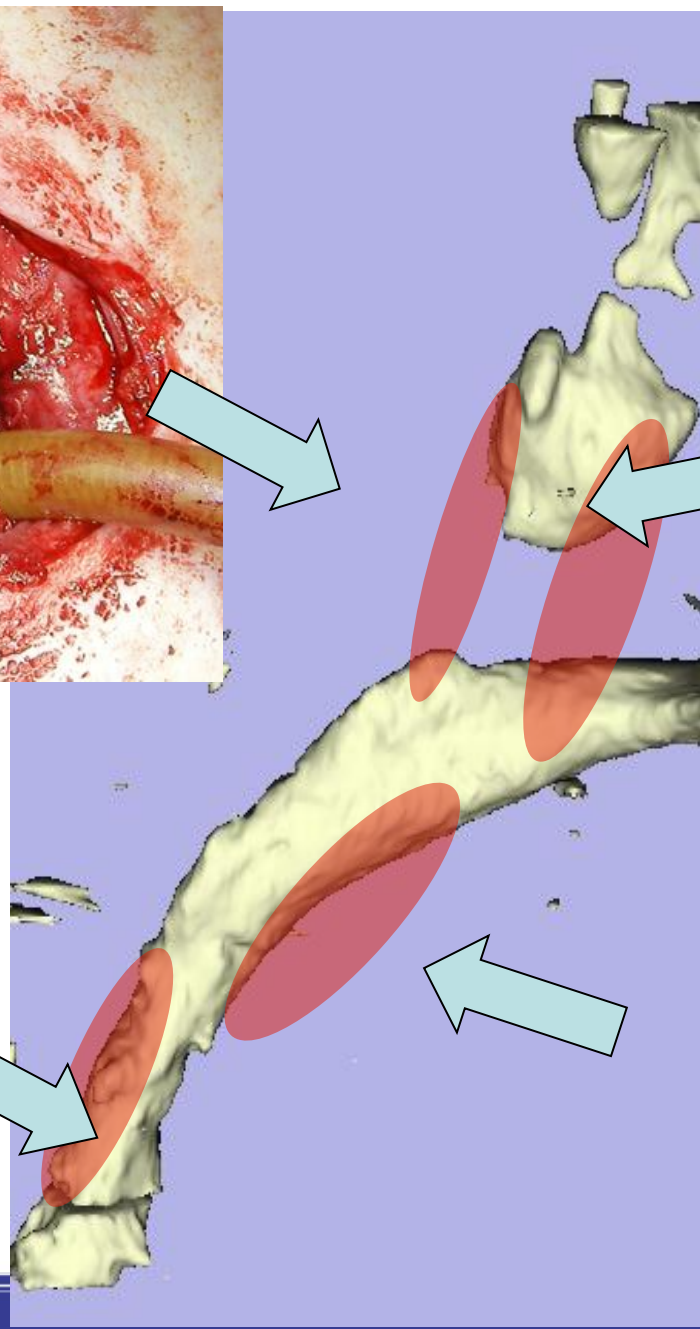
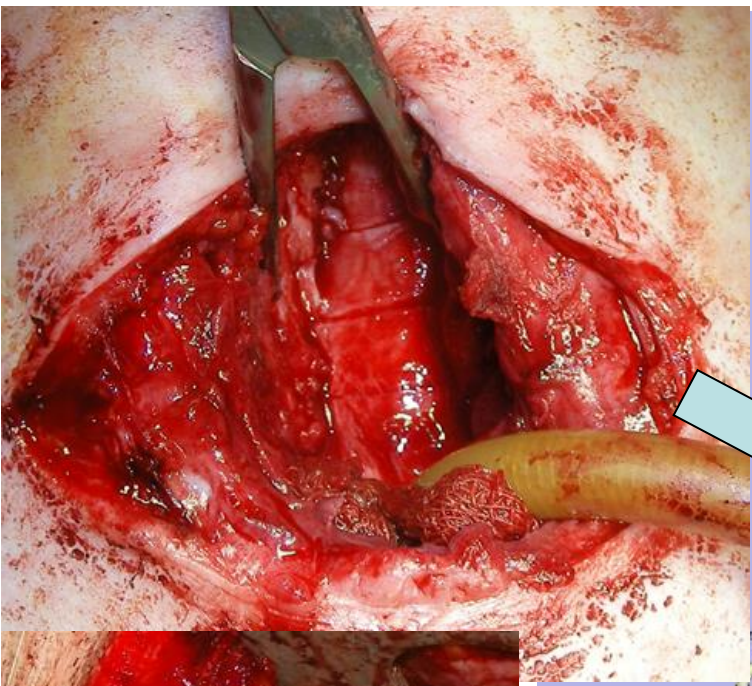
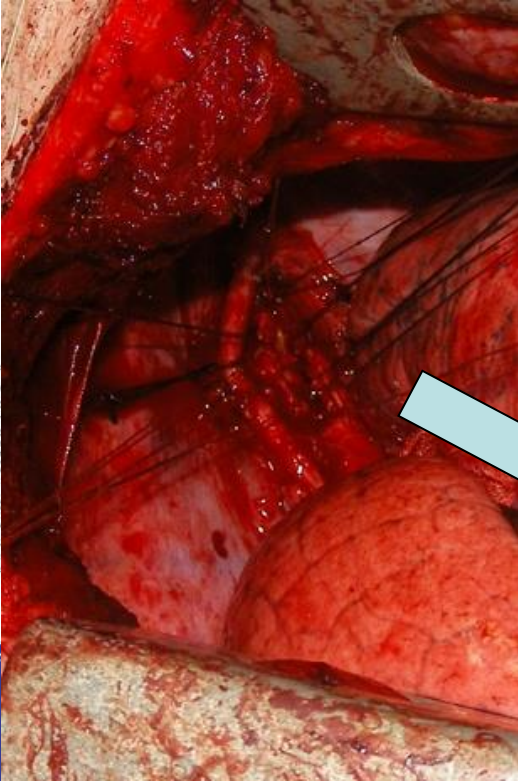
Multiple costal cartilage graft reconstruction for the treatment of a full-length laryngotracheal stenosis after an inhalation burn.

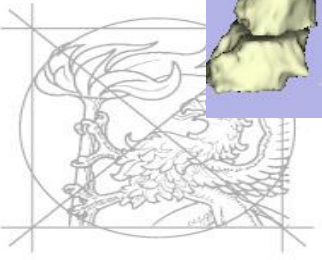
Furák J¹, Szakács L, Nagy A, Rovó L.



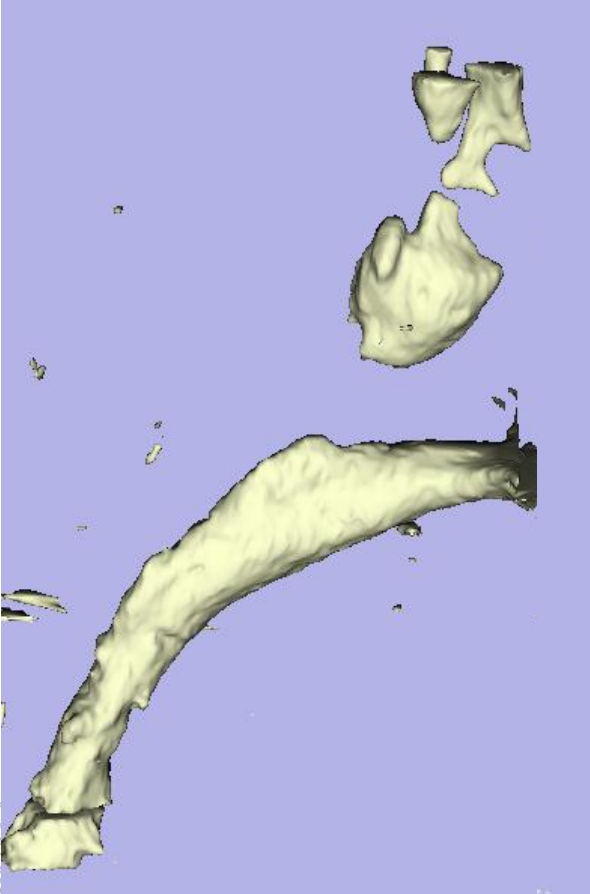
22-year-old man after burn injury







preoperative

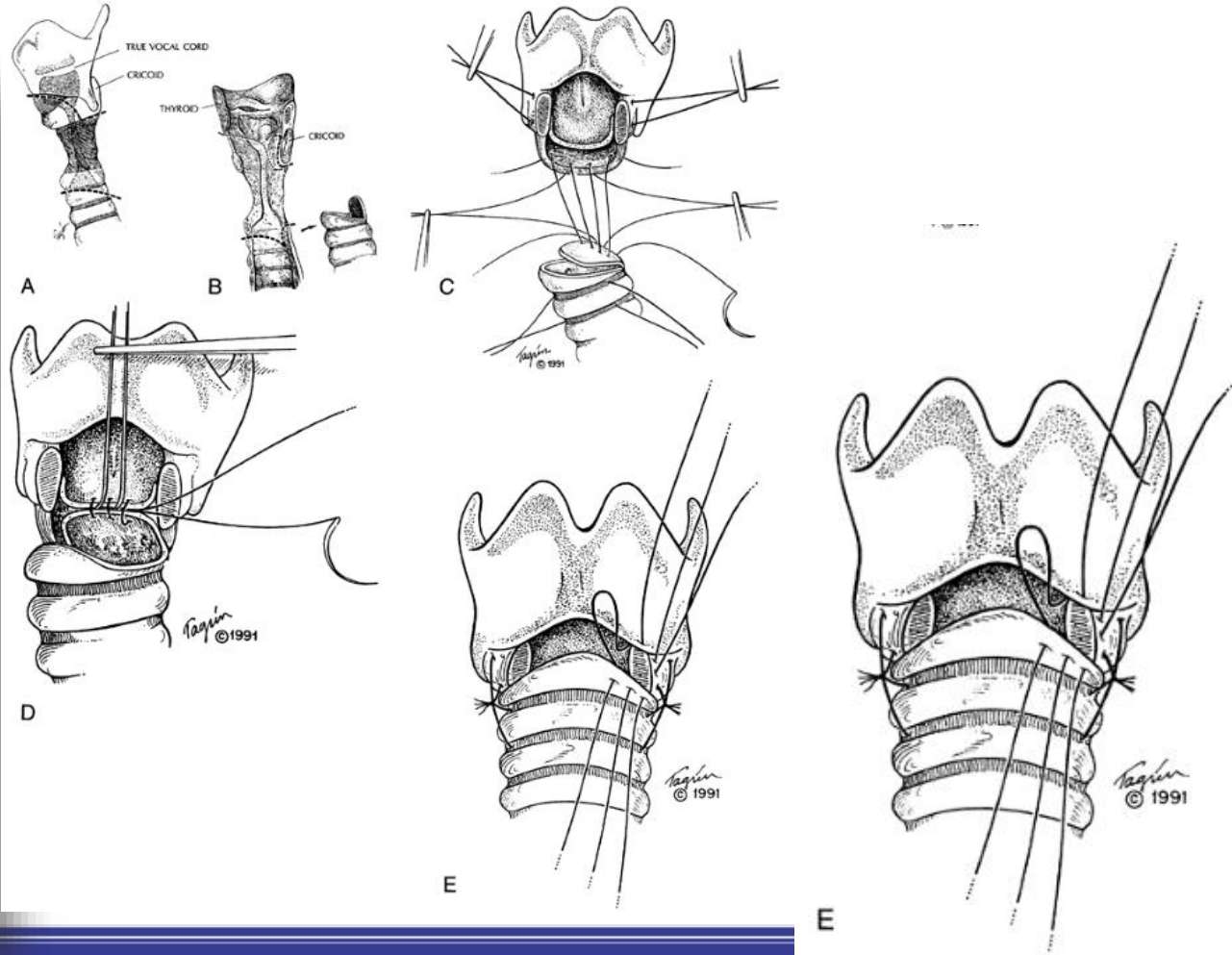
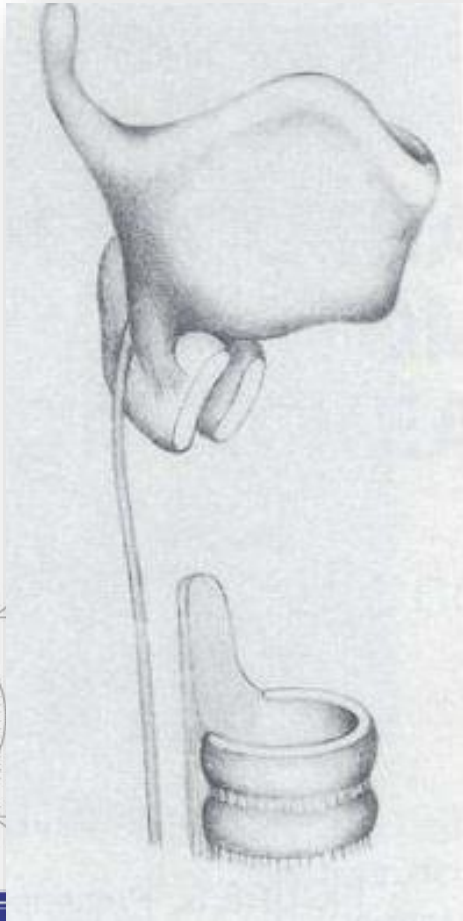


postoperative



Cricotracheal resection

1953: Conley





Slide laryngotracheoplasty

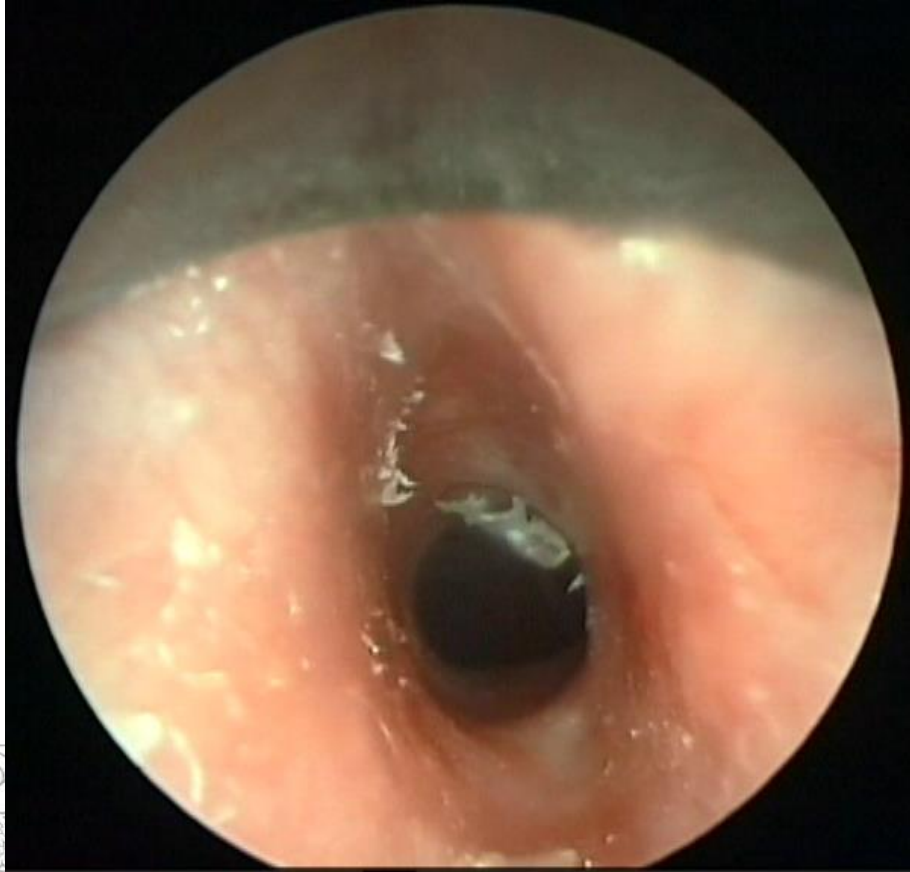
g



h



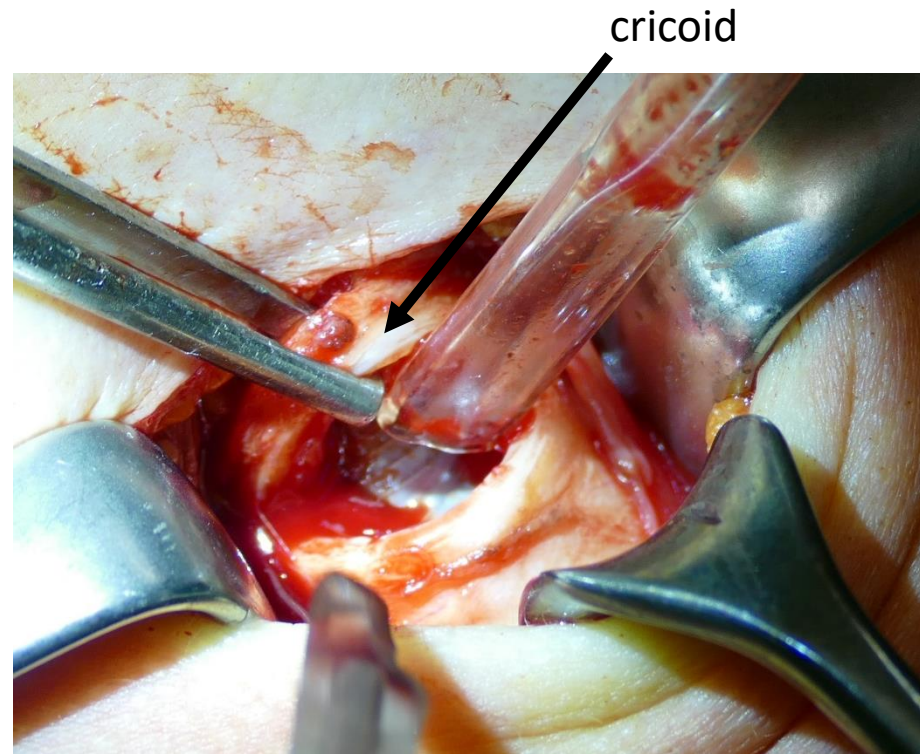
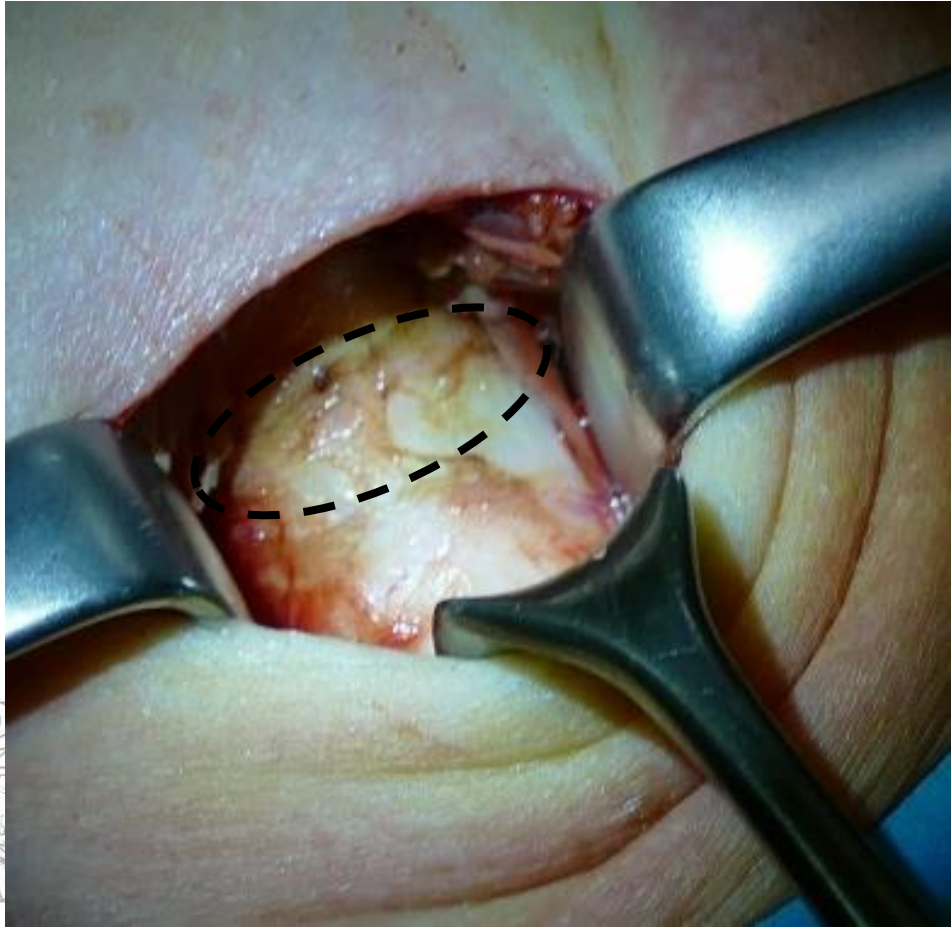
Subglottic stenosis



- Normal vocal cord movements, PIF:2,3 I/s
- McCaffrey: st. III.; Myers – Cotton: gr. III.

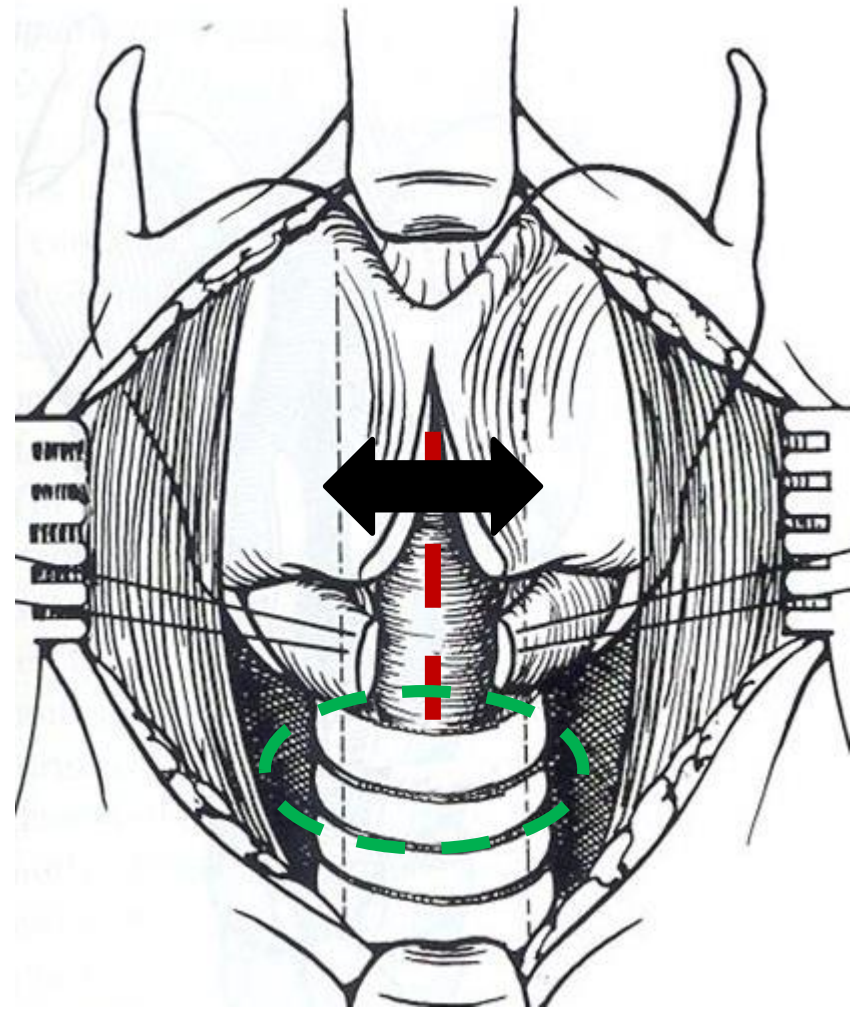


Slide laryngotracheoplasty



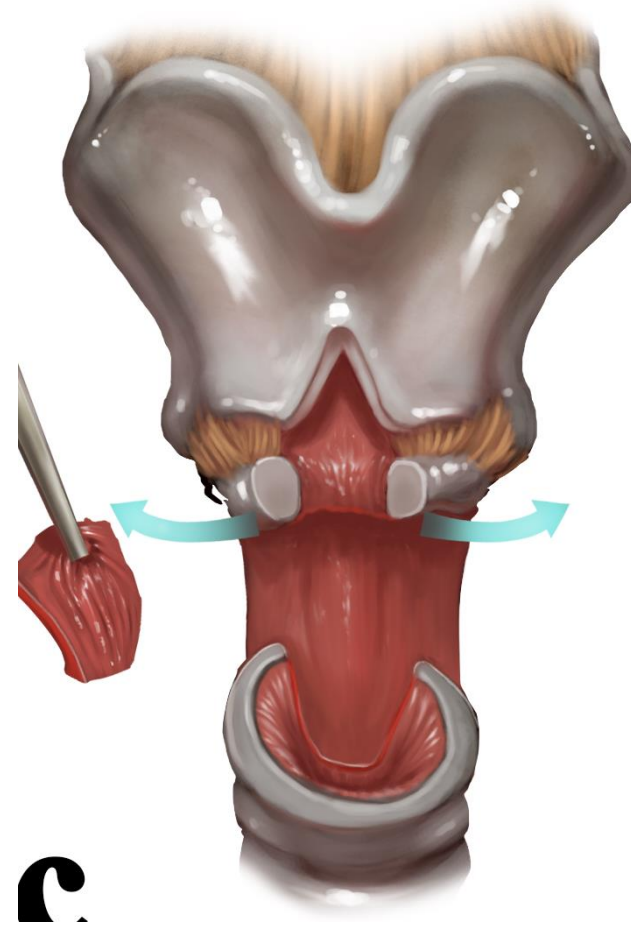
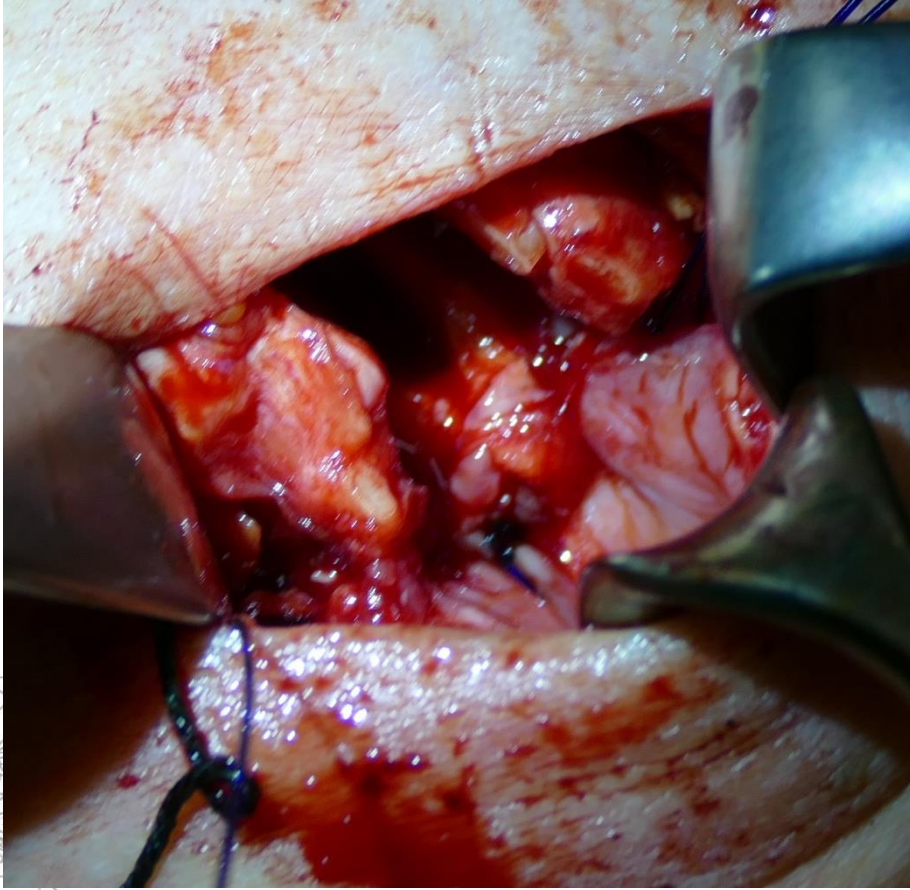


Slide laryngotracheoplasty



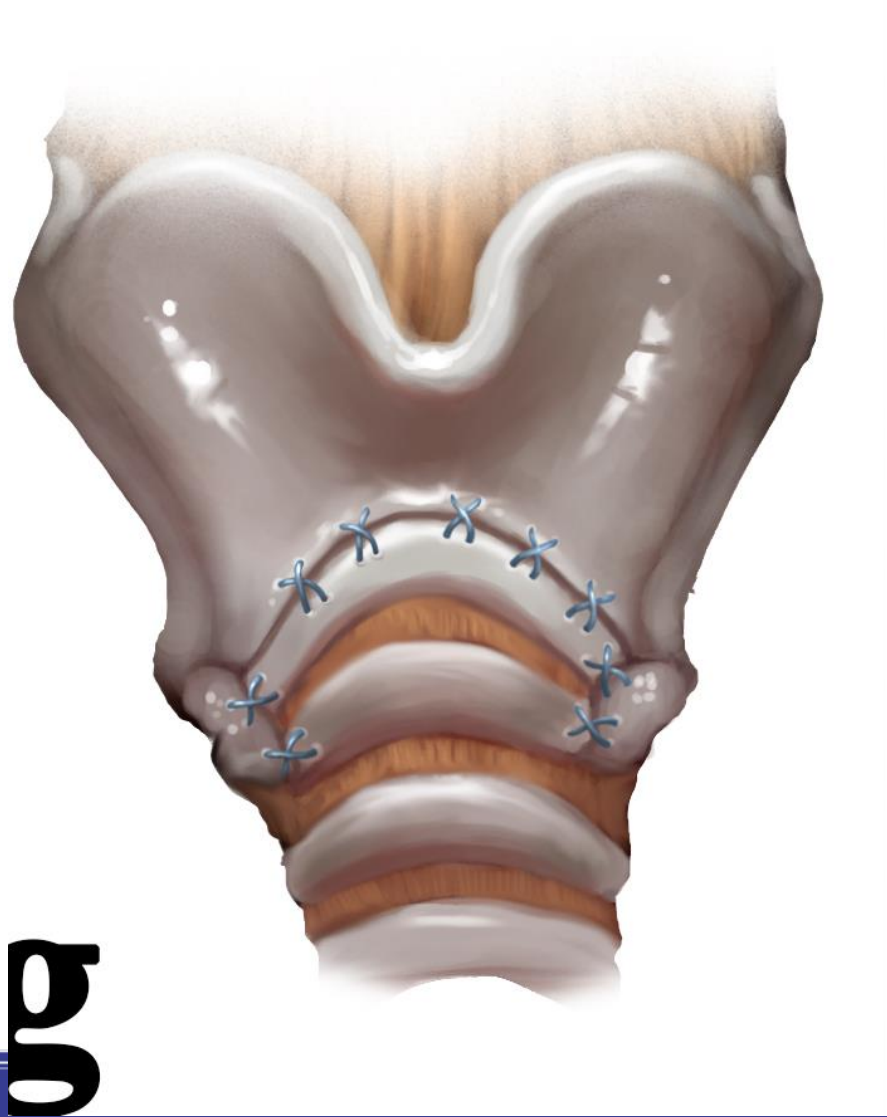
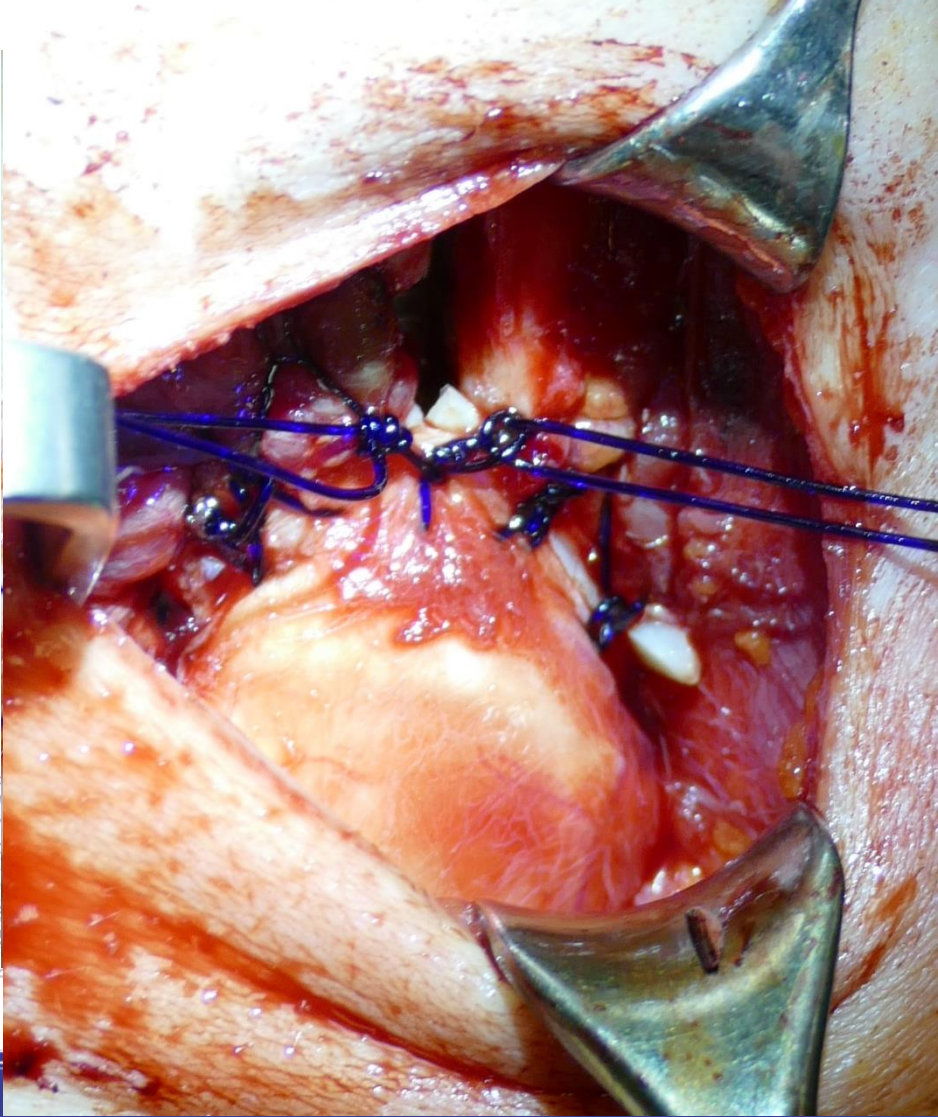


Slide laryngotracheoplasty



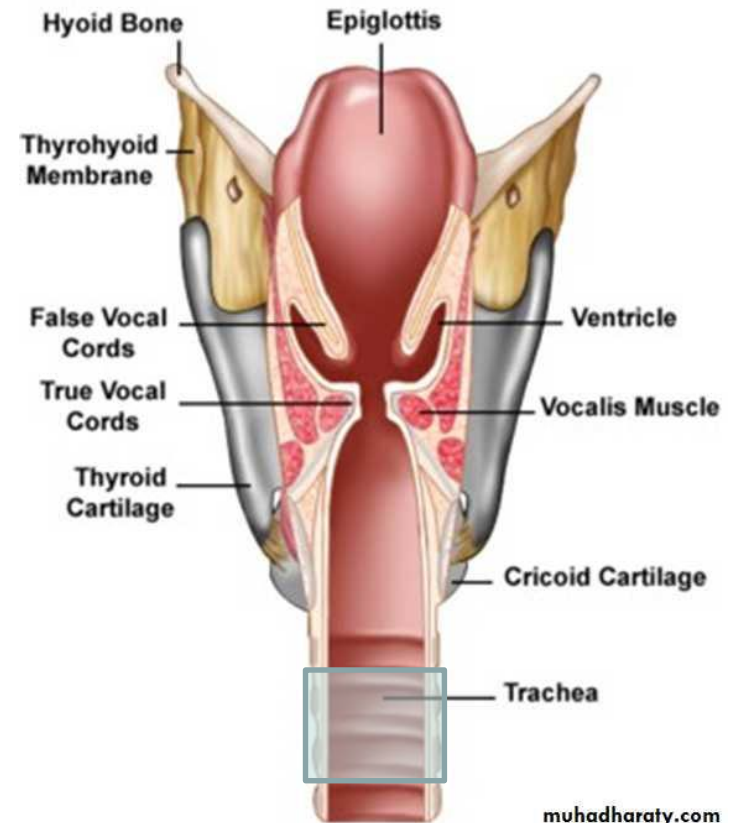


Slide laryngotracheoplasty

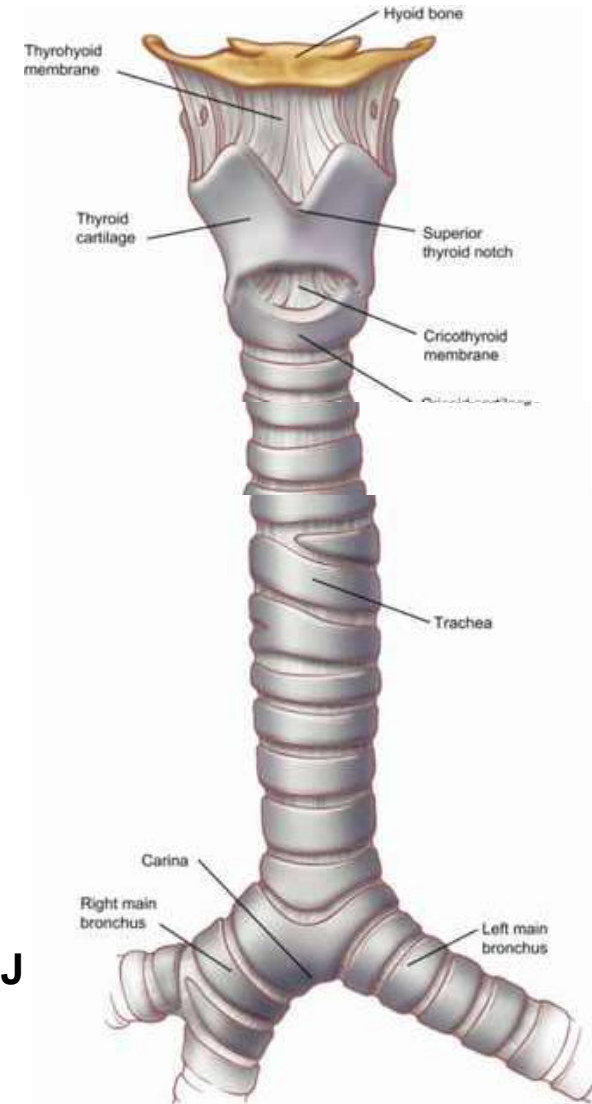
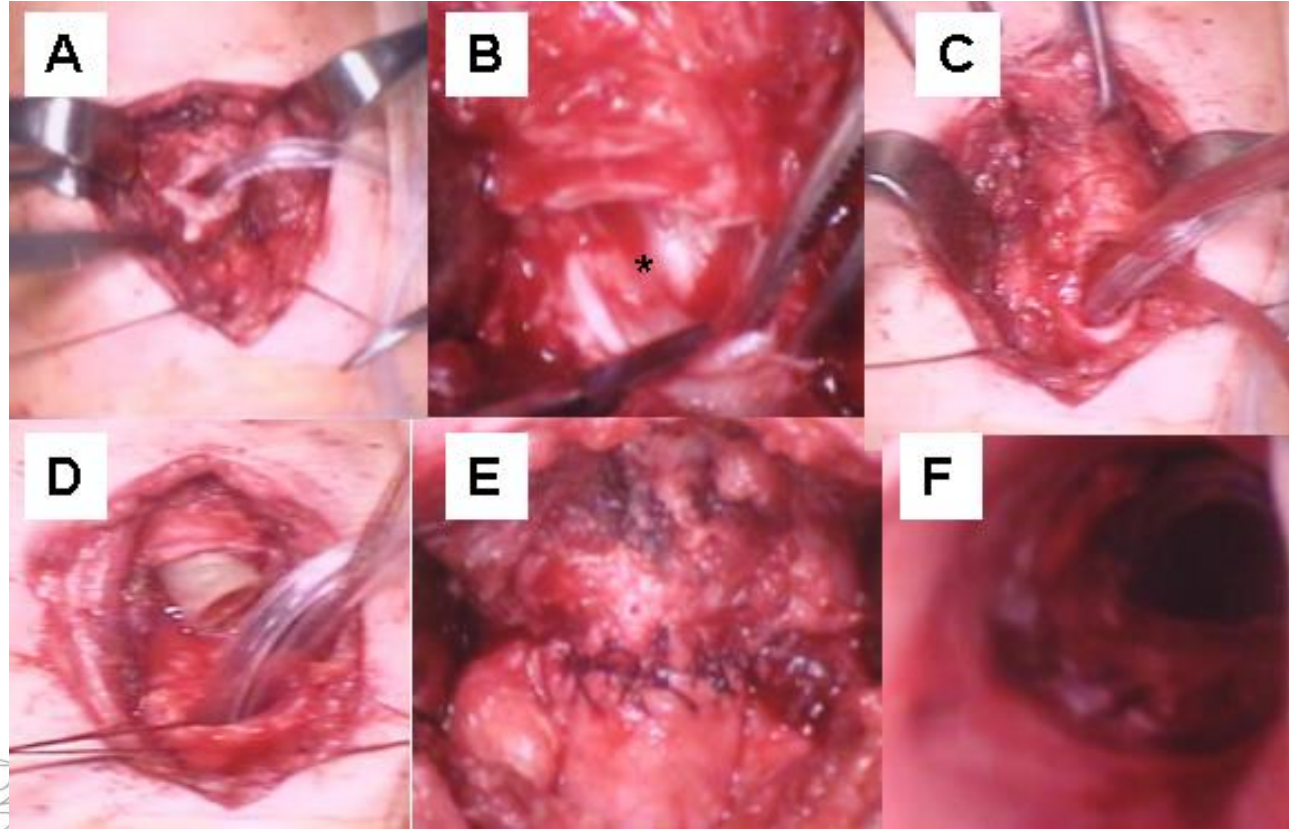


BR

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Tracheal segment resection



Rovó L, Sztanó B, Tálosi Gy, Rácz K, Majoros V, Czigner J, Túri S, Jóri J
 Gyermekkori subglotticus és tracheaszűkületek szegmentreszekcióra épülő
 egy lépésben történő megoldása. *Gyermekgyógyászat*, 61. Évf. (2) 54-59



Conclusions

- The incidence of subglottic stenosis is growing.
- Try to avoid tracheostomy!
- The outcomes are determined by the first operation!
- Innovative surgical techniques are available in centers.