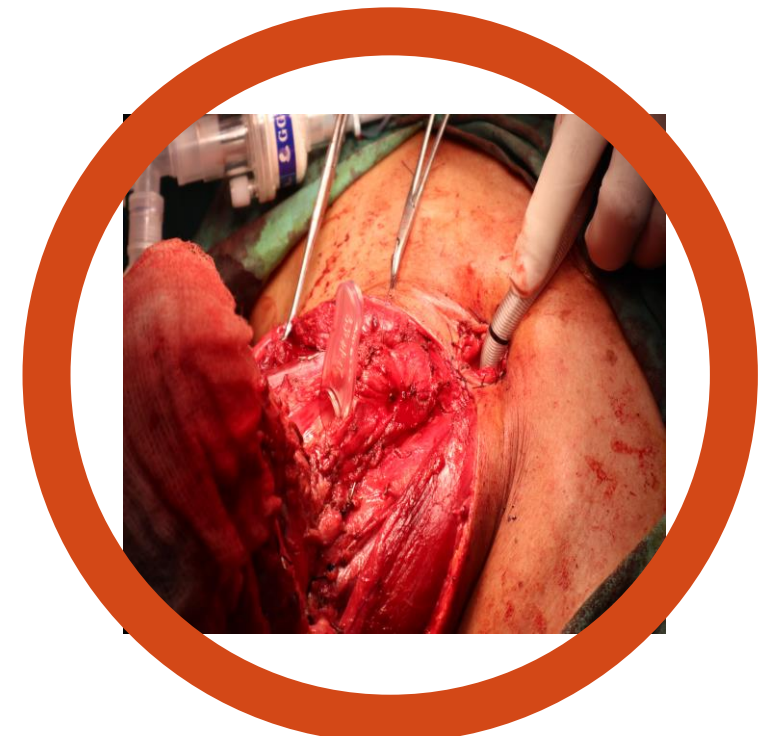


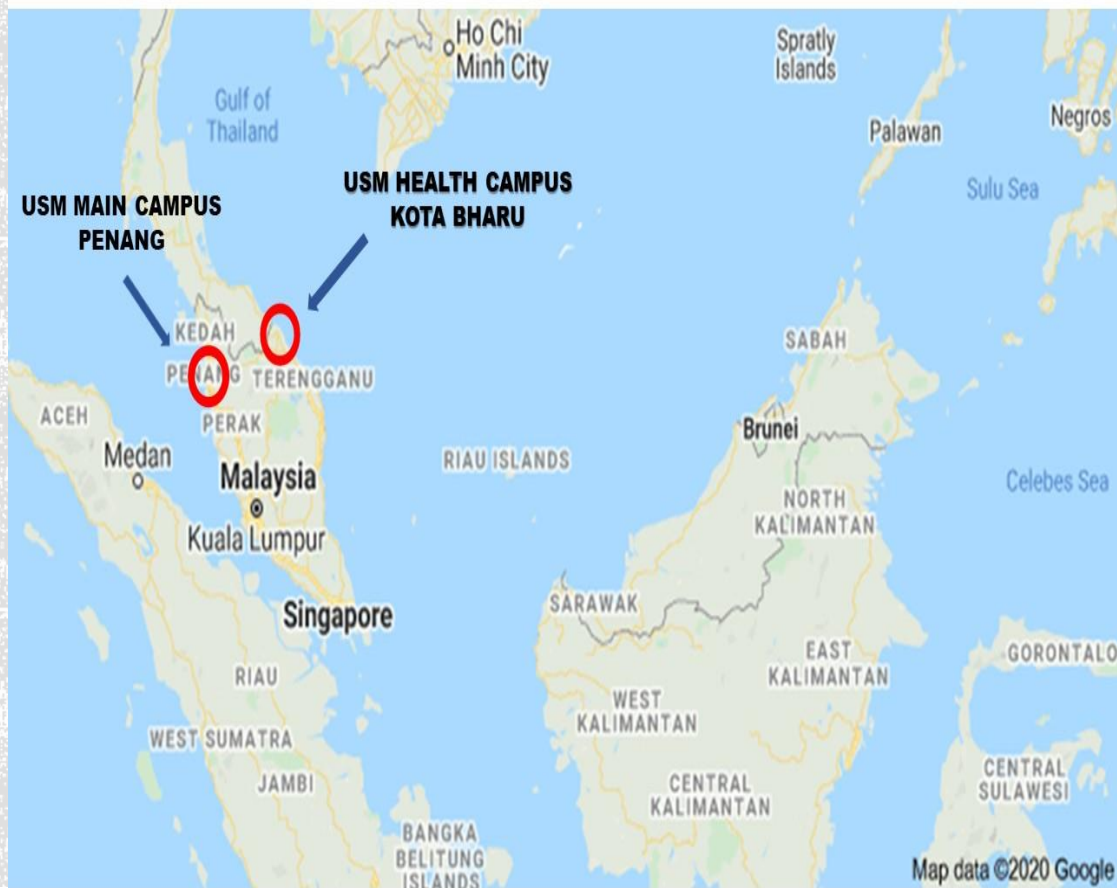
POST LARYNGECTOMY SEQUELAE & CASE DISCUSSION



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14th October 2020



SCHOOL OF MEDICAL SCIENCES, UNIVERSITI SAINS MALAYSIA, HEALTH CAMPUS KUBANG KERIAN, KELANTAN, MALAYSIA



ARAS 2	
200 Wad 2 Akik (Antenatal)	203 Wad 2 Delima (ICU Neuro)
201 Wad 2 Baiduri (Antenatal)	204 Wad 2 Intan (Surgeri Lelaki)
202 Wad 2 Topaz (Postnatal)	205 Wad 2 Zamrud (HDU Ortopedi)
ARAS 1	
106 Wad Nilam 1	107 Dewan Bedah
108 Wad Mutiara 1&2 (ICU)	112 Wad 1 Fairuz (CCU)
109 Kaunter Taksiran	113A/B Wad Kristal 1 & 2
110 Balai Peneman 1 (P/L)	117 Auditorium Perubatan Nuklear
ARAS BAWAH	
014 Unit Pemulihan	022 Unit Farmasi Pesakit Luar
017 Unit Forensik	027 X Ray Klinik Pakar
019 Makmal Pemeriksaan Klinikal	031 Unit Perubatan Transfusi
020 Unit Hemodialisis	065 Makmal Kardiologi Invasi
007 Jabatan Kecemasan	054 Lif Utama No. 910&11
	Klinik Radioterapi & Onkologi



INTRODUCTION

- Contemporary management of advanced laryngeal carcinoma has gradually evolved
- Total laryngectomy (TL) still serve as critical roles in:
 - Advanced primary tumour
 - As a salvage therapy
 - For a dysfunctional larynx from previous treatment
 - Treatment of chronic aspiration
 - Airway compromised and radionecrosis
- TL is concentrated in higher volumes, academic centers due to:
 - Treatment complexity
 - Referral centre
 - Multidisciplinary care
 - Optimal outcomes



- TL results in numerous complications due to huge critical neck areas resected
 - Preservation of swallowing function
 - Restoration of speech function
- Complications can be divided into
 1. Intraoperative
 2. Post operative
 - a. Early complications
 - b. Late complications
- Significant reduction of QOL of head and neck cancer patients



COMPLICATIONS OF TOTAL LARYNGECTOMY



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graph TD; A[COMPLICATIONS OF TOTAL LARYNGECTOMY] --> B[Intra - operatively]; A --> C[Post - operatively]; A --> D[Miscellaneous]; B --> B1[Surgeons related]; B --> B2[Patient related]; B --> B3[GA related]; C --> C1[Early complications]; C --> C2[Late complications]; D --> D1[Patients comorbidity]; D --> D2[Others];
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The diagram is a hierarchical flowchart. At the top is a grey box with the title 'COMPLICATIONS OF TOTAL LARYNGECTOMY'. A line from this box branches into three dark brown boxes: 'Intra - operatively', 'Post - operatively', and 'Miscellaneous'. From 'Intra - operatively', a line branches into three dark brown boxes: 'Surgeons related', 'Patient related', and 'GA related'. From 'Post - operatively', a line branches into two dark brown boxes: 'Early complications' and 'Late complications'. From 'Miscellaneous', a line branches into two dark brown boxes: 'Patients comorbidity' and 'Others'. A small red circular logo is located in the bottom right corner of the slide.

**Intra -
operatively**

**Surgeons
related**

**Patient
related**

**GA
related**

**Post -
operatively**

**Early
complications**

**Late
complications**

Miscellaneous

**Patients
comorbidity**

Others

COMPLICATIONS POST TOTAL LARYNGECTOMY

	EARLY COMPLICATIONS	LATE COMPLICATIONS
1.	Wound complications - A vascular necrosis -cellulitis -wound infection -seroma	A lteration of taste
2.	B leeding	B leeding
3.	C hyle leaks	C arotid Blow Out
4.	D ehiscence	D ysphagia
5.	E motional/Psychosocial	E sophageal Stricture
6.	F lap Oedema, Flap Necrosis	F istula (Pharyngocutaneous Fistula
7.	G ranulation	G ranulation (Stomal Stenosis, Pharyngeal stenosis)
8.	H aematoma	H ypothyroidism S tomal Recurrence



PHARYNGOCUTANEOUS FISTULA (PCF)



- Commonest complication
- Use as an outcome indicators of TL
- Incidence increase if had previous chemoradiation
- **Risk factors**
 - Types of surgery
 - Pharyngeal closure techniques
 - Tumour site & stage
 - Concurrent neck dissection
 - Positive margins
 - Presence of pre op tracheostomy
 - Pre-existing comorbidities
 - Nutrition status
 - Alcohol & cigarette consumption
 - Pre op Hb (<12.5 mg/dl) & albumin level (3.5g/dl)

PCF

Prolonged hospitalization

Potential need for surgical revisions

It delays initiation of peroral feeding

Delays re-irradiation when indicated

Lead to death due to carotid blowout

- Role of barium swallow
- Treatment plan;
 - Flaps
 - Hyperbaric O₂ therapy
- Success rate varies



TREATMENT CHOICE OF PCF

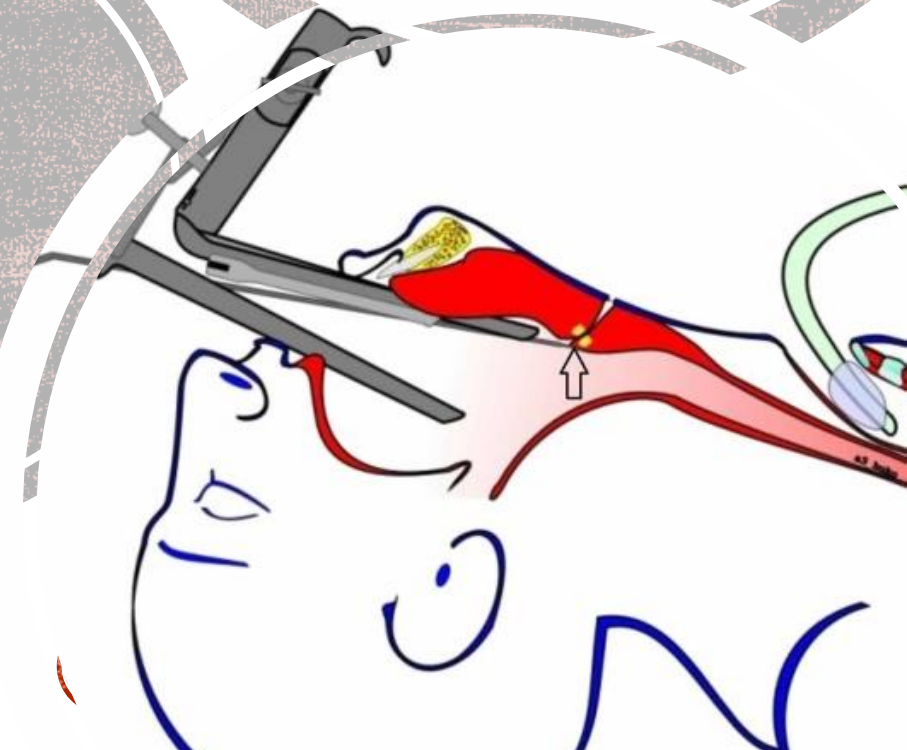
- Conservative vs Surgery
- Depends on
 - Types & size of fistula
 - Patient comorbidity & general health condition
 - Preoperative chemotherapy
- 2 keystones to prevent PCF
 - Meticulous closure of neopharynx
 - Tension free suture line

Negative Pressure Wound Therapy



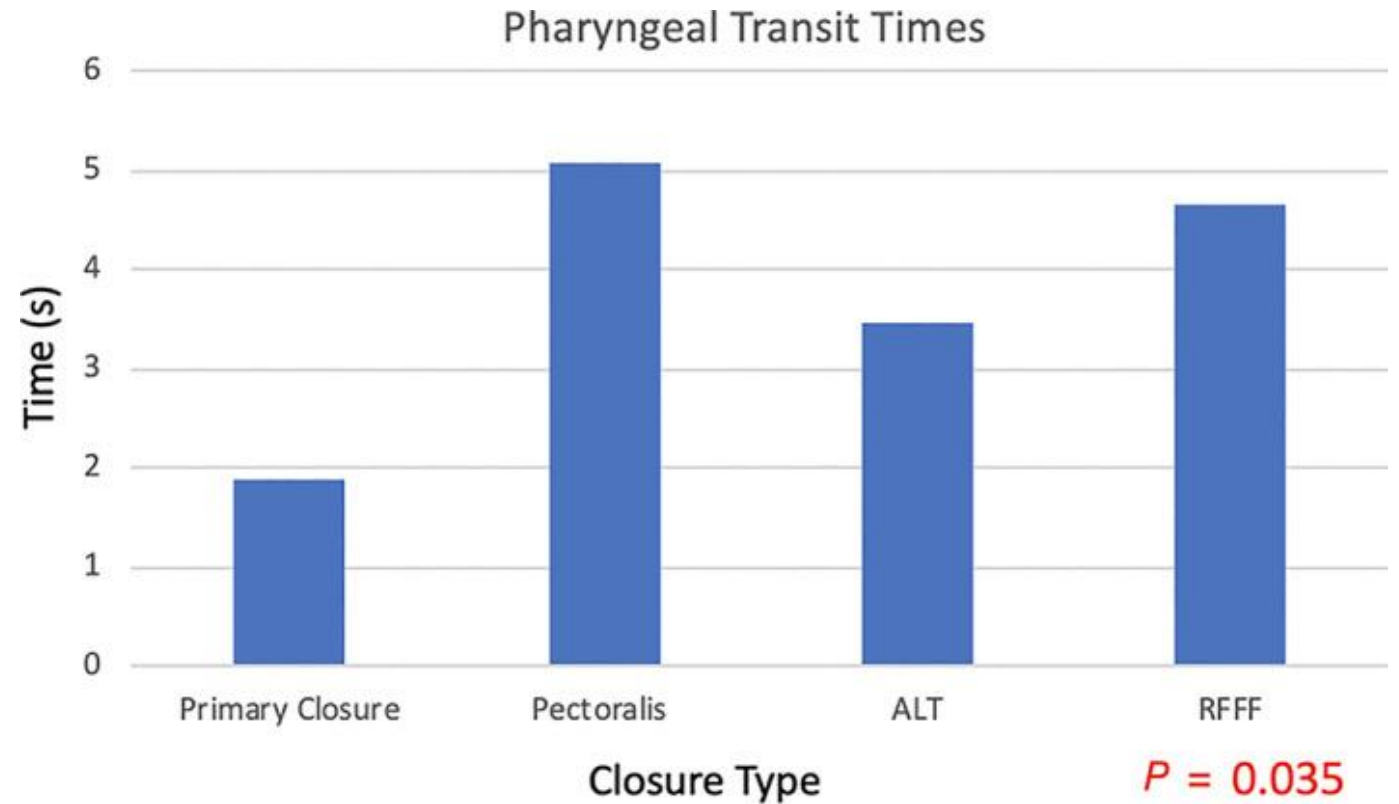
Endoscopic Repair with Fat Injection

- Endoscopic access to the neopharynx via Weerda distending laryngoscope.
- Autologous fat injection around the internal opening of the PCF



DYSPHAGIA

- Altered swallowing dynamics of neopharynx
- Swallowing function can be further compromised by
 - Extent of disease
 - Methods of reconstruction
 - Radiation
 - Post operative complications
- Factors contribute to dysphagia
 - Reduce tongue base retraction
 - Poor pharyngeal clearance
 - Stricture of post pharyngeal wall

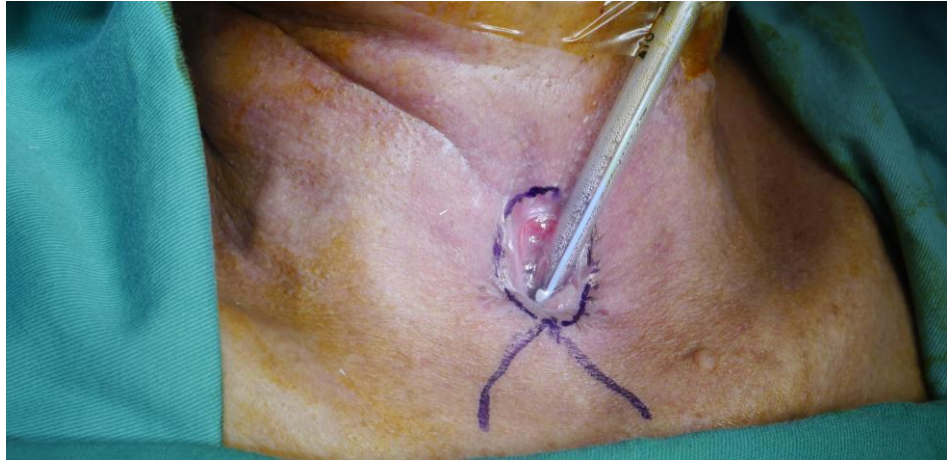


Patients undergoing free flap reconstruction had significantly longer pharyngeal transit times (PTT) compared to primary closure, with ALT averaging 4.65 seconds, RFFF averaging 3.47 seconds, and primary closure averaging 1.89 seconds. Patients undergoing PMC had the longest PTT at 5.1 seconds



STOMAL STENOSIS & STOMAPLASTY

- Higher in females
- Risks
 - Having intermediate TE puncture
 - Pectoralis major myocutaneous flap pharyngeal reconstruction
 - Tracheostomal infection
- Types of stomaplasty



STOMAL RECURRENCE

- “A diffuse infiltrate of neoplastic tissue at the junction of amputated trachea and skin usually documented within a 5-year disease-free interval
- Incidence 3-15%
- 90% present within 2 years post TL
- Risk factors:
 - Tumor site –subglottic ca
 - Pre-operative tracheostomy
 - T-stage/classification
 - lymph node metastases – paratracheal lymph nodes
 - postoperative pharyngo-peristomal fistula
 - positive surgical margin.
- Management of stomal recurrence
 - Based on Sisson staging system
 - PET/CT to exclude distant metastases
 - Contraindications
 - Prevertebral fascia invasion
 - Carotid artery/innominate artery involvement
 - Massive mediastinal involvement



MANAGEMENT OF COMPLICATIONS OF TOTAL LARYNGECTOMY

**Multidisciplinary
Approach**

③
**Availability of
Expertise**

**Rehabilitation
Team**

②
Psychosocial Issues

**Patient's Pre
Operative factor
Optimisation**

①
**Cost and Patients
Financial Issues**

**Surgical
Refinements**



CASE DISCUSSION

Case History

- A 62 yo Malay, retired army
- Comorbidity – hypertensive (well controlled)
- Ex smoker (40 pack years, stopped 4 months ago)
- Hoarseness for 5 months duration
 - progressive worsening
 - rough and breathy voice
 - persistent & worsen when having upper respiratory tract infection
 - affecting his quality of life - extra effort for communication
- No other significant complaint

Clinical Examinations

- Thin build, not in respiratory distress, no audible stridor
- Voice assessment: GRBAS 3 (roughness, breathiness, strain)
- Maximum phonation time: 6 seconds
- Good cough effort
- Neck examination normal
- No neck swelling/mass
- Oral examination normal



Direct Laryngoscopy Findings

- Trans-glottic fungating mass
 - multilobulated mass extending from false cord to subglottic.
- Involves anterior commissure and bilateral vocal cord (R > L)
- Normal vocal cord mobility,
 - but with small phonation gap.
- Base of tongue, epiglottis, arytenoid, AE fold, valeculae, pyriform fossa, post cricoid and posterior pharyngeal wall – otherwise normal
- No pooling of saliva.

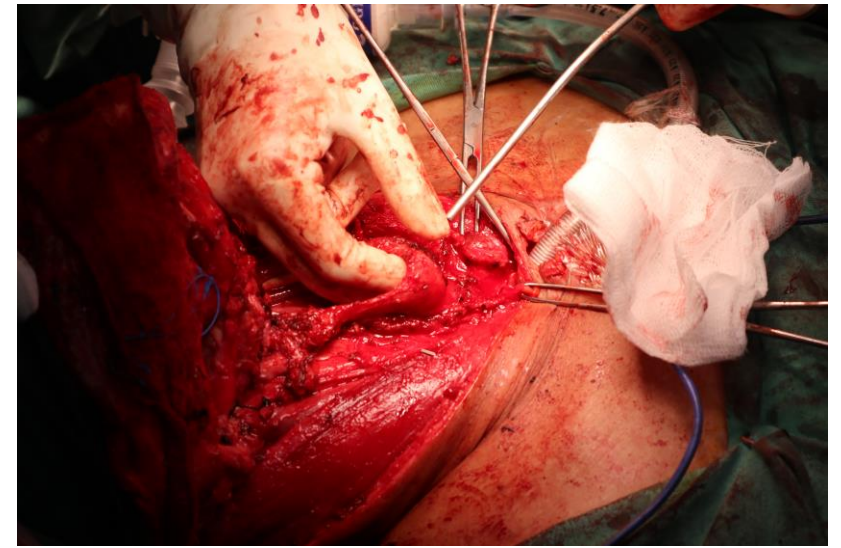


CT scan Findings



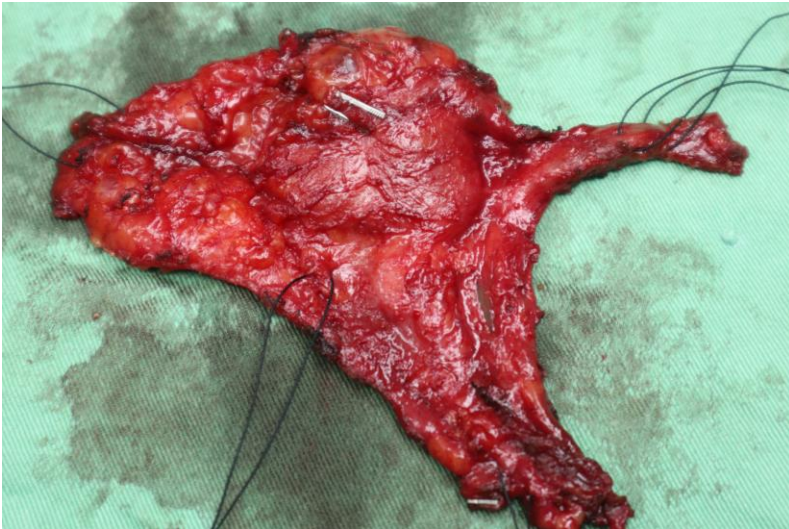
Clinically patient is staged as T3N0M0

- Bilateral anterolateral neck dissection
- Total laryngectomy
- PROVOX prosthesis insertion

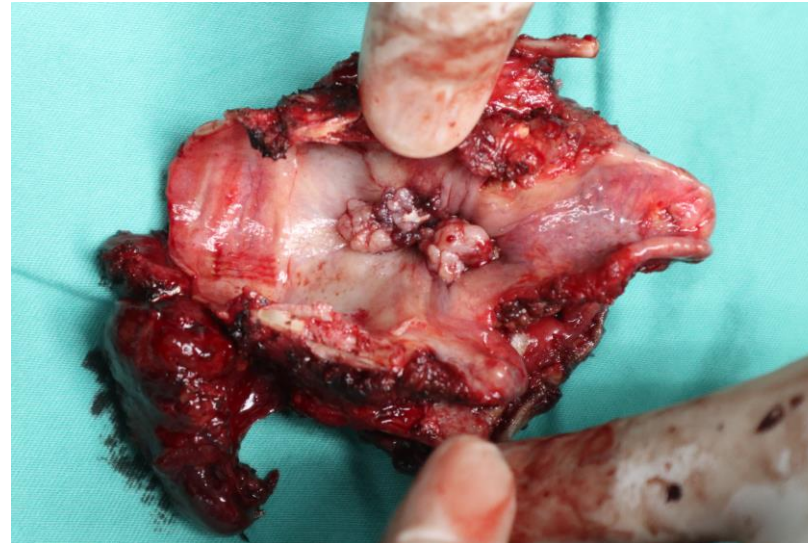


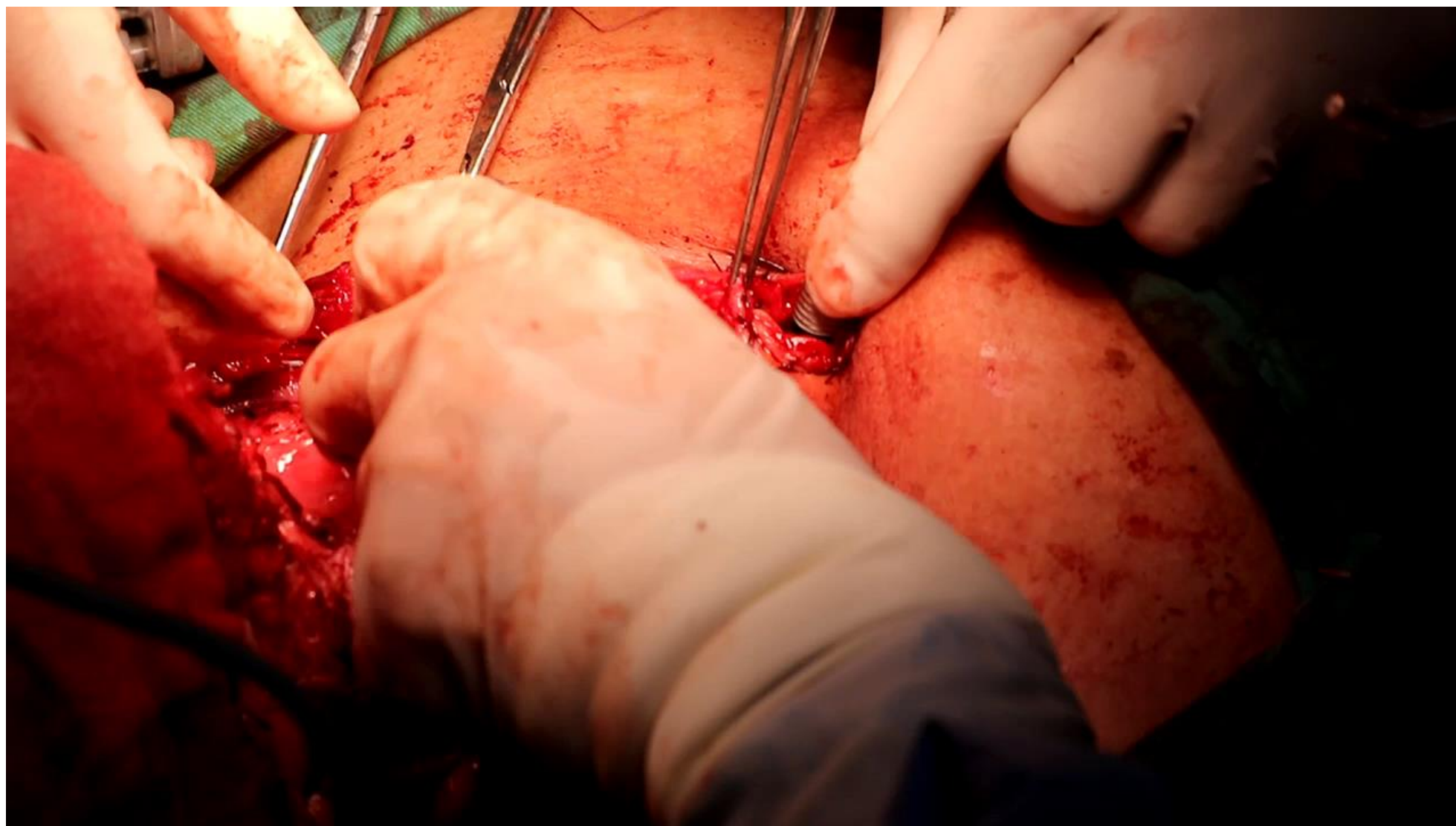
Post Operative Specimens

Neck dissection specimen

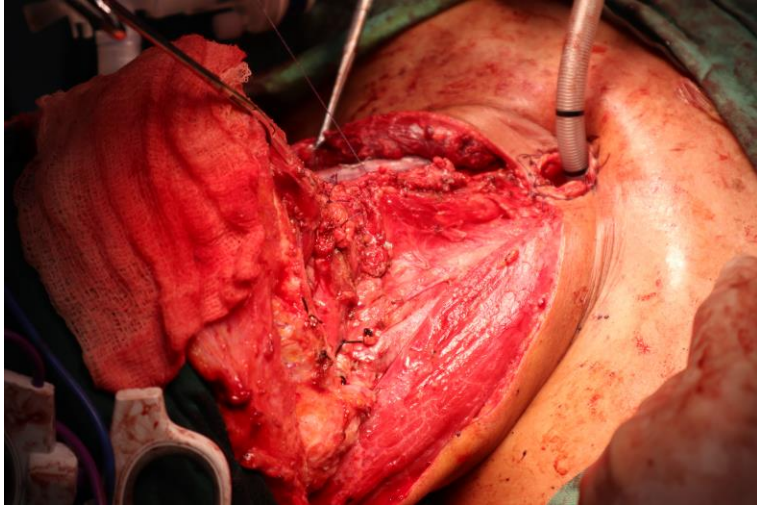


Total Laryngectomy specimen



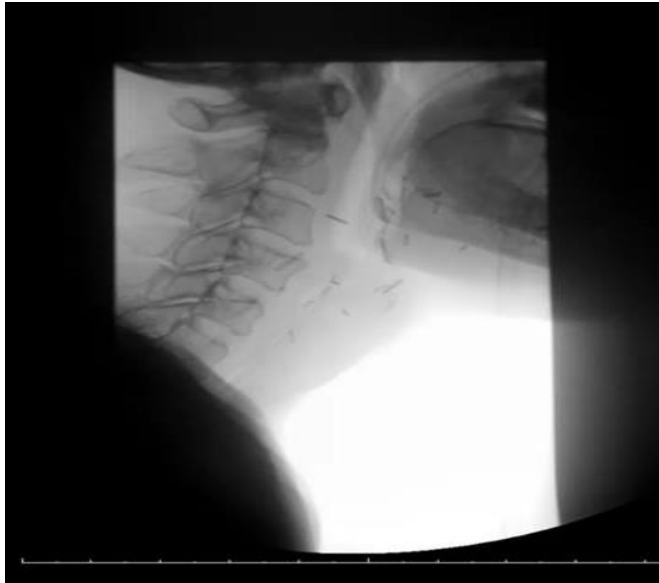


Closure of Neopharynx



**First Time Trial of PROVOX
prosthesis : Few days post surgery**

Post Operative Barium Swallow- No leakage

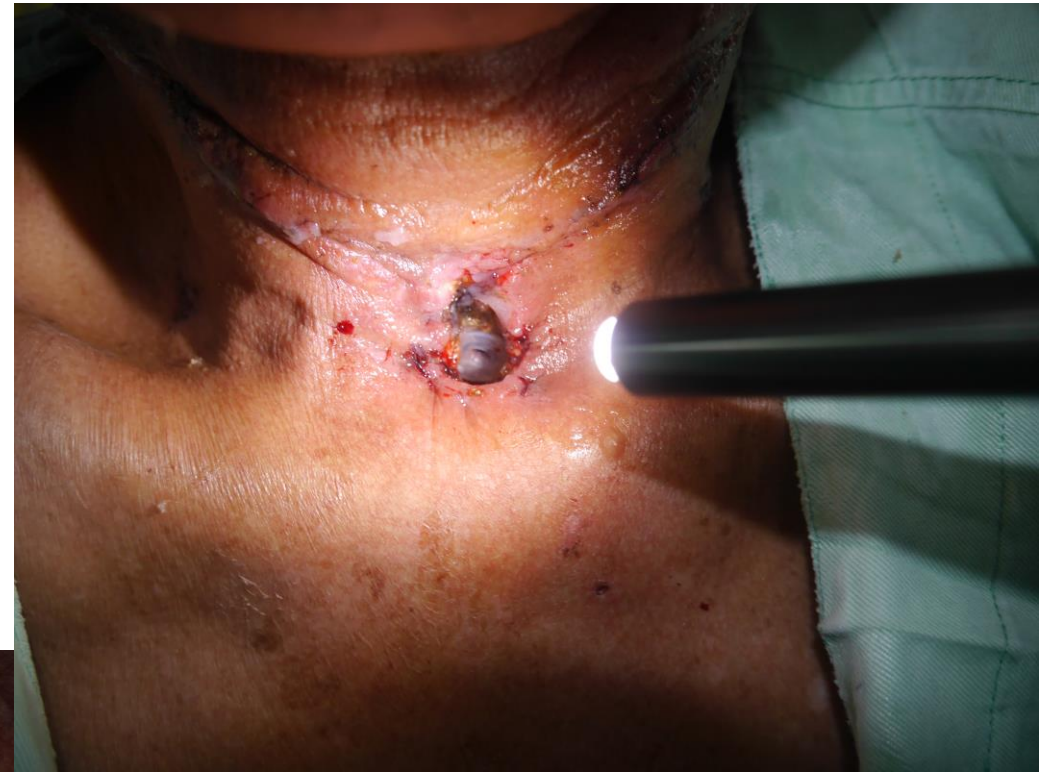


POST-OPERATIVELY

- Had stomal stenosis
- Complicate with pseudomonas wound infection
- Underwent stomaplasty
- Do not use Lary tube or stomal button
- Patient only use trachy tube at night-time

Post Operative HPE details

- Role of adjuvant radiation.





**SEVERAL MONTHS
AFTER SURGERY**

DISCUSSION POINTS

- 1. How to manage stomal stenosis?
- 2. When to do stomaplasty?
- 3. Complete care of Prosthesis?
- 4. How to improve voice quality?
- 5. Anticipation of stomal recurrence – how to assess?



■ **THANK YOU FOR YOUR KIND ATTENTION**



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