

Larynx

A) Received specimen consists of epiglottis, larynx, pharynx and thyroid gland, hyoid bone attached and trachea, totally measuring 9x7.5x4cm. The tumoral epiglottis measuring 4x3.5x2.5cm. The larynx measuring 5x4x4cm. The trachea measuring 2cm in length and 3cm in greatest diameter. There is an orifice probably due to tracheostomy measuring 1.2x0.8x0.4cm within anterior aspect of trachea. The thyroid gland measuring 7.5x4x2.5cm. The right & left lobes and isthmus measuring 4.5x4x2.5cm, 4x3x2.5cm & 2.5x2.5x1.5cm respectively. The hyoid bone measuring 11x2.5x1.7cm. Sections show a solid tan lobulated tumor extending from epiglottis to infraglottis measuring 5x4.5x3.5cm. A parathyroid gland was seen measuring 1cm in greatest diameter, in the inferior aspect of left side. The tumor totally measuring 5x4.5x3.5cm. (P.S/28B)

B) Received specimen consists of one piece of tan elastic tumoral tissue partly covered by mucosa. The former measuring 4.5x3x2cm & the latter measuring 4.5x3cm. The tan lobulated solid tumor measuring 2.5cm in greatest diameter. (T.S/9B)

MICRODESCR: Sections show laryngeal and tongue tissue involved by solid sheets of proliferative neoplastic epithelial cells with squamous differentiation. Necrosis and severe acute necrotizing inflammation are also present.

DIAGNOSIS: F1, F2, F3, F4, A, B) MARGIN SAMPLING OF BASE OF THE TONGUE AND ESOPHAGUS AND LEFT AND RIGHT SIDES, PHARYNGEOLARYNGECTOMY AND THYROIDECTOMY, PARTIAL GLOSSECTOMY; RESPECTIVELY;

- INVASIVE SQUAMOUS CELL CARCINOMA.
- TUMOR GRADE:WELL TO MODERATELY DIFFERENTIATED.
- THE TUMOR HAS INVOLVED LARYNX(A) AND THE TONGUE(B).
- LYMPH/VASCULAR AND PERINEURAL INVASION: NOT SEEN.
- ALL FINAL SURGICAL MARGINS: FREE OF TUMOR.
- OVERALL TUMOR SIZE: APPROXIMATELY 5CM IN MAXIMUM DIMENSION.
- THYROID: FREE OF TUMOR.

SPECIMEN :

- F1) Base of tongue.*
- F2) Esophageal opening.*
- F3) Left side.*
- F4) Right side.*
- A) Thyroid + pharynx & larynx.*
- B) Tongue.*

CLIN. DATA :

*SCC.*

GROSS DESCR :

*F1) Received specimen in fresh state for intraoperative consultation consist of one piece soft pink tissue measuring 0.8x0.5x0.3cm. (T.S/1B)*

*DXF1) NEGATIVE FOR MALIGNANCY. (ONLY MILD DYSPLASTIC CHANGES SEEN).*

*F2) Received specimen in fresh state for intraoperative consultation consist of 3 pieces of soft pink tissue the smallest piece measuring 0.5x0.2x0.1cm and the largest piece measuring 1.8x1.5x0.7cm. (T.S/2B)*

*DXF2) NEGATIVE FOR MALIGNANCY.*

*F3) Received specimen in fresh state for intraoperative consultation consist of one piece of soft pink tissue. measuring 0.7x0.5x0.2cm. (T.S/1B)*

*DXF3) NEGATIVE FOR MALIGNANCY.*

*F4) Received specimen in fresh state for intraoperative consultation consist of two pieces totally of soft pink tissue measuring 0.5x0.3x0.2cm. (T.S/1B)*

*DXF4) NEGATIVE FOR MALIGNANCY.*

*-ADDITIONAL FINDINGS:*

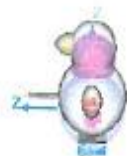
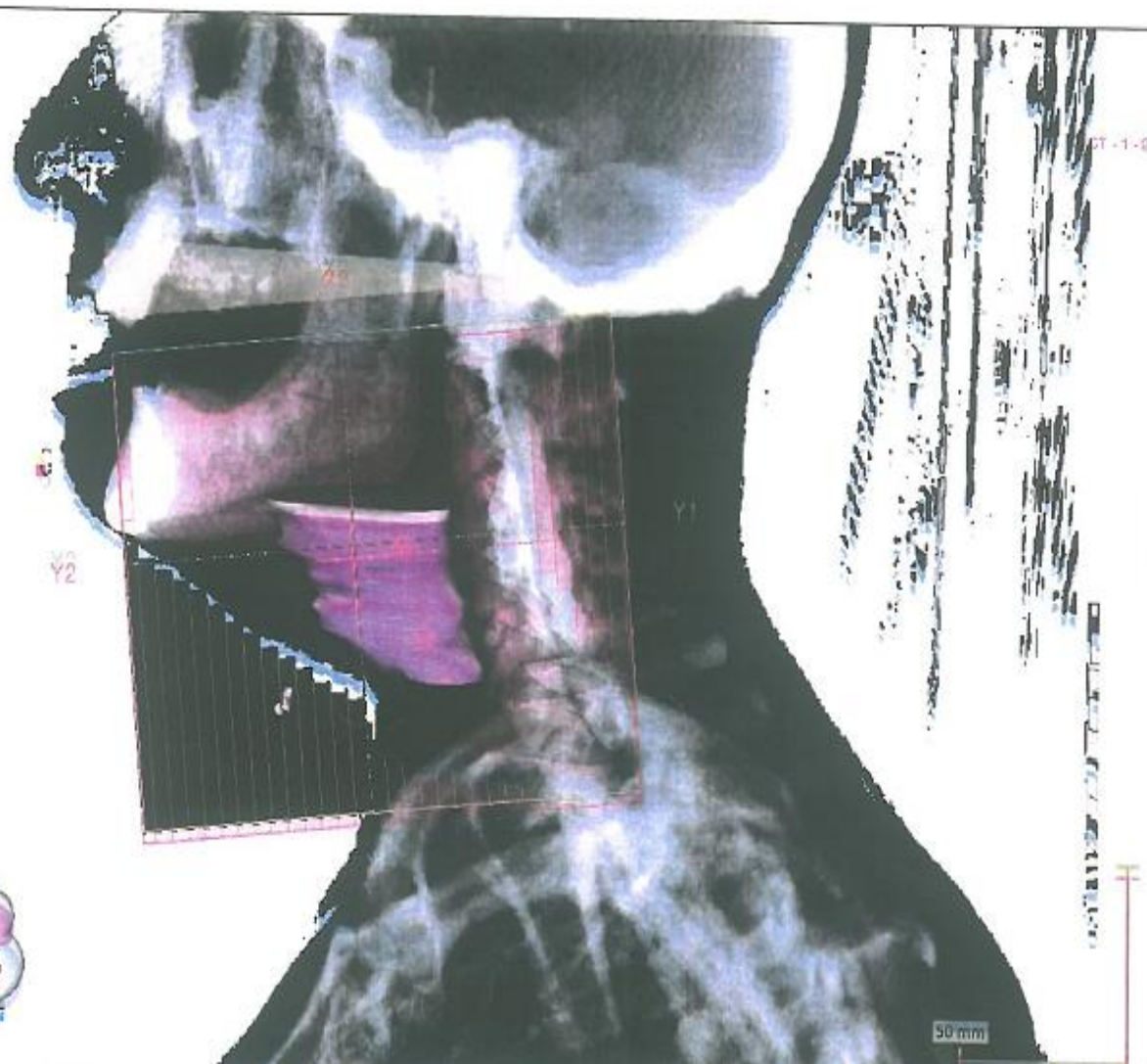
- *THYROID WITH NECROTIZING INFLAMMATION AT THE INTERFACE WITH LARYNGEAL TISSUE.*
- *ONE TINY PERITHYROIDAL LYMPH NODE WITH BENIGN REACTIVE CHANGES.*
- *ONE PARATHYROID ADENOMA.*

*ICDO: M-8070/3*

*C02.9, C14.0, C10.9*

Beam eye view

1/1/2025 10:00:00



F021 LAT



All values are expressed according to the IEC convention, in degrees (°) and in millimeters (mm).

{Sum of dosimetries} Sum 1 : {Sum of dosimetries} Sum 1

1 : Dosl 2: Beam setup 1 (Gy)

2 : Dosl 1: phase\_2 (Gy)

{Sum of dosimetries} Sum 1 : P01/Treatment stage Dosl 2: Beam setup 1

ARTISTE

Nb.	Label	Code	Energy	Tech	SSD (mm)	Entry point (mm)			Isocenter (mm)			Rotations (°)			Aperture (mm)			Jaws (mm)			MLC Block	Wedge	Bolus	Type	Beam weight point (mm)					Depth	Weight	Unit	
						X	Y	Z	X	Y	Z	Gantry	Couch	Col	X	Y	X1	X2	Y1	Y2					X	Y	Z	SSD					
1	RLAT	6 MV	6 MV	SAD	954.25	-32	-15.75	-1	-6.5	-22	-1	275	0	85	126	153	-4	52	-18	85	X	-	1VW15 1VW15	-	free	-4	23.75	10	921.25	66.25	43	a.u.	
2	LLAT	6 MV	6 MV	SAD	964	48.75	-14.25	-1	-6.5	-22	-1	90	352	95	122	149.5	-68	54	-81	68.5	X	-	2VW15 2VW15	-	free	-4	23.75	10	925.5	65.75	43	a.u.	
3	RPO	6 MV	6 MV	SAD	907.75	-57.75	-22	-81	-6.5	-22	-1	210	0	0	80	105.5	-35	45	-10.25	55.5	X	-	1VW45 1VW45	-	free	-6	23.75	10	910	102.25	7	a.u.	
4	LPO	6 MV	6 MV	SAD	892.5	47.5	-22	-95	-6.5	-22	-1	150	0	0	79	108	-59	20	-31	57	X	-	1VW45 1VW45	-	free	-6	23.75	10	902	107.5	7	a.u.	
5	SET AP	6 MV	6 MV	SAD	932.25	-6.5	-22	66.75	-6.5	-22	-1	0	0	90	200	200	-105	105	-100	100	-	-	-	iso	-6.5	-22	-1	932.25	70.25	0	a.u.		
6	SET LAT	6 MV	6 MV	SAD	951.25	42.25	-22	-1	-6.5	-22	-1	90	0	90	200	200	-105	105	-100	100	-	-	-	iso	-6.5	-22	-1	951.25	49.75	0	a.u.		
Templates																																	
Calculation mode		Grid (mm)		Beam weights		In		Display units		Presc. at (mm)		Presc. j01. size (mm)		Name (mm)																			

Template Calculation mode Grid (mm) Beam weights in Display units Presc. pt (mm) Presc. tot. dose Normalization

Point Kernel Collapsed Cone relative doses (a.u.) Gy (-6.5,-22,-1) 45.00 Gy None

{Sum of dosimetries} Sum 1 : P02/Treatment stage\_2 Dosl 1: phase\_2

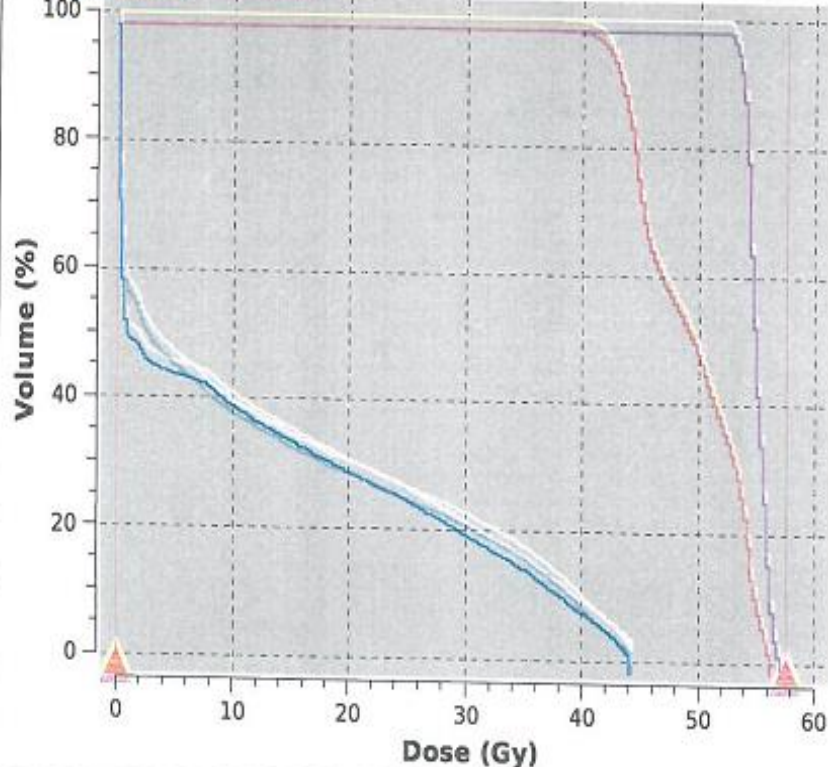
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Nb.	Label	Code	Energy	Tech	SSD (mm)	Entry point (mm)			Isocenter (mm)			Rotations (°)			Aperture (mm)			MLC Block	Wedge	Bolus	Type	Beam weight point (mm)					Depth	Weight	Unit				
						X	Y	Z	X	Y	Z	Gantry	Couch	Col	X	Y	X1					X2	Y1	Y2	X	Y				Z	SSD		
1	RAO-PH2	6 MV	6 MV	SAD	953.75	-43.5	-22	15.75	0	-22	0	290	0	90	83	84.5	-77	24	-33.5	53	X	-	1VW15 1VW15	-	free	-2	-16.8	8	949.5	47.75	40	a.u.	
2	LAO-PH2	6 MV	6 MV	SAD	957.25	48.25	-22	14.75	0	-22	0	70	0	0	90	59	83.5	-37	22	-49.5	34	X	-	2VW15 2VW15	-	free	-2	-16.8	8	955.25	45	40	a.u.
3	R-PO-PH2	6 MV	6 MV	SAD	900.25	-49.75	-22	-86.25	0	-22	0	210	0	0	74	76	82.25	-45	31	-39.75	23.25	X	-	1VW45 1VW45	-	free	-2	-16.8	8	905.5	101	10	a.u.
4	L-PO-PH2	6 MV	6 MV	SAD	896.5	51.75	-22	-89.5	0	-22	0	150	0	0	75	76	82.25	-47	49	-39	23.25	X	-	1VW45 1VW45	-	free	-2	-16.8	8	901.75	107.75	10	a.u.
5	SET-AP-PH2	6 MV	6 MV	SAD	933	0	-22	67	0	-22	0	0	0	90	245	200	-105	140	-100	100	-	-	-	iso	0	-22	0	933	50	0	a.u.		
6	SET-LAT-PH2	6 MV	6 MV	SAD	957.75	42.25	-22	0	0	-22	0	90	0	90	245	230	-105	140	-130	100	-	-	-	iso	0	-22	0	957.75	49	0	a.u.		
Template Calculation made						Grid (mm)	Beam weights	Display units	Presc. at (mm)	Presc. at distance										Presc. at distance					Presc. at distance								

Template Calculation mode Grid (mm) Beam weights in Display units Presc. pt (mm) Presc. tot. dose Normalization

Point Kernel Collapsed Cone relative doses (a.u.) Gy (-2,-16.8) 9.60 Gy None

Isodoses: 20 25 35.9 45 7 49.5 52.9 51.0



Structure	Medullary canal	PTV	PTV 45	SC
Geom. vol (cm3)	65.5	79.2	446.7	23.7
Random points	5075	5203	6658	4465
Min. dose (Gy)	0.00	52.30	28.31	0.00
Max. dose (Gy)	46.42	57.65	57.64	45.44
Mean dose (Gy)	13.07	54.97	49.34	12.74
Med. dose (Gy)	3.29	54.88	49.84	1.84
Standard deviation	15.88	0.94	4.60	15.73
Bound min. dose (Gy)	0.00	0.00	0.00	0.00
Bound max. dose (Gy)	57.65	57.65	57.65	57.65
selected Vol. (cm3)	65.4	79.2	446.7	23.7
selected Vol. (%)	100.0	100.0	100.0	100.0
D95 (Gy)	0.05	53.52	42.69	0.04
D2 (Gy)	44.77	56.98	56.18	44.26

MR 3D MIP 3D  
Ex3718

3x12  
FD MIP No cut

DFOM1.1mm

R  
2002

No VOI

3.3mm/3.3ep

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1115

MOMENTZENHOSEINAL  
Imm Knochentumore  
M 10000000  
Ex Feb 19 2021

MR 3D MIP 3D  
Ex3718

3x12  
FD MIP No cut

DFOM1.1mm

L  
2002

No VOI

3.3mm/3.3ep

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MOMENTZENHOSEINAL  
Imm Knochentumore  
M 10000000  
Ex Feb 19 2021

3x12  
FD MIP No cut

DFOM1.1mm

L  
2002

No VOI

3.3mm/3.3ep

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MOMENTZENHOSEINAL  
Imm Knochentumore  
M 10000000  
Ex Feb 19 2021

3x12  
FD MIP No cut

DFOM1.1mm

L  
2002

No VOI

3.3mm/3.3ep

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MOMENTZENHOSEINAL  
Imm Knochentumore  
M 10000000  
Ex Feb 19 2021

3x12  
FD MIP No cut

DFOM1.1mm

L  
2002

No VOI

3.3mm/3.3ep

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WB 3D MAG 3D  
EC3716  
Sc 12  
HD MIP No cut

DFOV41.6cm

A. FROM

No VOI

3.3mm/3.3ap

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men nh 32-00 novalis

1.055

MOMENZADEH HOSSEINI  
Imam Khomeini Hospital  
#109005002  
Ex Feb 13 2022

WB 3D MAG 3D  
EC3716  
Sc 12  
HD MIP No cut

DFOV41.6cm

A. FROM

1.055

MOMENZADEH HOSSEINI  
Imam Khomeini Hospital  
#109005002  
Ex Feb 13 2022

DFOV41.6cm

A. FROM

1.055

MOMENZADEH HOSSEINI  
Imam Khomeini Hospital  
#109005002  
Ex Feb 13 2022

DFOV41.6cm

A. FROM

1.055

MOMENZADEH HOSSEINI  
Imam Khomeini Hospital  
#109005002  
Ex Feb 13 2022

DFOV41.6cm

A. FROM

1.055



**Findings:****Brain:**

Physiologic FDG uptake is noted throughout the brain

**Head and Neck:**

A hypermetabolic prevertebral lymph node is noted in the level of C2 (SUVmax =4.7). Multiple bilateral cervical level II (measuring 12mm with SUVmax=2.1 on the right side and up to 25\*18mm with SUVmax=9.3 on the left side), III (measuring up to 17mm with SUVmax=4 on the right side and up to 18\*13mm with SUVmax=9.3 on the left side) and IV (measuring 27\*19mm with SUVmax=16 on the right side and 20\*12mm with SUVmax=7.5 on the left side) lymphadenopathies are noted. There are also matted hypermetabolic right supraclavicular lymphadenopathies (measuring 40\*50mm with SUVmax=11) with possible erosion of proximal part of right clavicle and also left clavicular lymphadenopathies (measuring 25\*16mm with SUVmax=5.5). There is a hypodense soft tissue mass without significant metabolic activity in anterior lower neck below tracheostomy tract (SUVmax = 2) which could be due to post radiation fibrosis. A focus of increased metabolic activity is noted on the skin of right side of lower neck (SUVmax =5.4); differentiation of tumoral ulcer from infective ulcer is not possible. The nasopharynx, oropharynx and oral cavity appear normal. The major salivary glands are intact. The thyroid gland appears normal.

**Thorax:**

**Lungs:** There is a superior segment LLL 7 mm pulmonary nodule with SUVmax of 0.8, comparing to previous study shows increased in size indicative of metastatic nodule. No remarkable structural finding or abnormal FDG uptake is noted in the hila.

**Mediastinum:** Normal FDG uptake is noted within the myocardium and mediastinum without any pathologic adenopathy.

**Chest wall:** Soft tissue of chest wall is unremarkable with no abnormal focal FDG uptake.

**Axillary:** A hypermetabolic 17\*12mm lymph node (SUVmax =4.23) is noted posterior to right pectoralis major muscle. Otherwise there is no pathologic adenopathy in the axillary regions, bilaterally.

## **Abdomen:**

**Liver and biliary system:** The liver is normal in size and metabolic activity without focal hepatic lesion. No intra or extra hepatic ductal dilation is seen.

**Spleen:** Spleen is normal in size and metabolic activity without focal activity.

**Pancreas:** The pancreas is normal in size and metabolic activity.

**Adrenal glands:** The Adrenal glands are normal in appearance and metabolic activity.

**Gastrointestinal/Peritoneal/Retroperitoneal:** No intra/retroperitoneal lymphadenopathy is demonstrated. Physiologic uptake is seen throughout the GI tract.

**Genitourinary system:** Physiologic activity is noticed within kidneys, ureters and bladder.

## **Pelvis:**

No abnormal uptake is seen in the pelvic region.

## **Musculoskeletal system:**

Degenerative changes are seen along the spine. No abnormal uptake is noted in the musculoskeletal system.

## **Impression:**

- ❖ Extensive viable bilateral neck, subclavicular and posterior to the right pectoralis major muscle lymphadenopathies.
- ❖ Hypometabolic subpleural LLL solitary pulmonary nodule need follow up (3month delayed CT).
- ❖ Anterior lower neck mass is hypometabolic, hence is considered partially responsive to treatment.

## **Surgical Pathology Report**

### **Specimen:**

- A) Peristernal mass
- B) Part of sternum
- C) Part of left clavicle
- D) Thymus
- E) Submaxillary salivary gland tissue
- F) Anterior tracheal margin
- G) Lingual thoracic tissue
- H) Part of right clavicle

### **Macroscopic:**

The specimen received in formalin in eight separated containers as follow and consists of:

- A) A fragment of irregular grayish brown soft to rubbery tissue measuring 10.5x8x4.3cm covered by skin measuring 9.5x4.5cm with accompanying sternal bone measuring 6x2.5x2cm. On cut section an irregular grayish creamy rubbery mass is identified, measuring 3.5x3.4x2.7cm. (SB: M/7, E:30%)

**Block summary :** ( 1#Labelled margin), (2-4# Lateral margins) , (5-7# Tumor).

- B) A fragment of bony tissue, measuring 7x3.5x2cm. (SB: 1/1, E:10%)
- C) A fragment of bony tissue, measuring 4x2x1.3cm. (SB: 1/1, E:10%)
- D) Thymus measuring 2.3x1x0.8cm. (SB: M/1, E:100%)
- E) A fragment of grayish creamy soft to rubbery tissue measuring 3.5x2x0.6cm. (SB:M/1, E:40%)

- F) A fragment of ring-shaped rubbery grayish tissue measuring 2.5x1.5cm. (SB:2/2, E:30%)

**Block summary:** (1# Anterior part), (2# Posterior part).

- G) Two fragments of grayish creamy soft to rubbery tissue totally measuring 3.5x3x1.6cm. (SB:2/1, E:30%)
- H) A fragment of bony tissue measuring 5x2.5x1.5cm. (SB: 1/1 , E:10%)

### **Microscopic:**

A to H) The histological findings support the following diagnosis .



## **Diagnosis:**

### **A) Peristernal mass, excision :**

- *Metastatic well differentiated invasive squamous cell carcinoma*
- *Tumor grade : Well differentiated (G1)*
- *Tumor size: 3.5x3.4x2.7cm*
- *Tumor site: Peristernal*
- *Tumor invaded muscular tissue and reached to subcutaneous fatty tissue*
- *Vascular invasion : Present*
- *Perineural invasion: Present*
- *All surgical margins are free although one of lateral margins is to close with distance of 0.4 cm.*
- *There is no evidence of lymph node in the received specimen*
- *TNM staging (for laryngeal origin) : pT4a, Nx, Mx (at least stage IV A)*

### **B) Part of sternum, resection:**

- *Free from tumor*

### **C) Part of left clavicle, resection:**

- *Free from tumor*

### **D) Thymus, resection:**

- *Free from tumor*

### **E) Submaxillary salivary gland tissue, resection:**

- *Free from tumor*

### **F) Anterior tracheal margin, resection:**

- *Free from tumor*

### **G) Designate as linguid thoracic tissue , resection:**

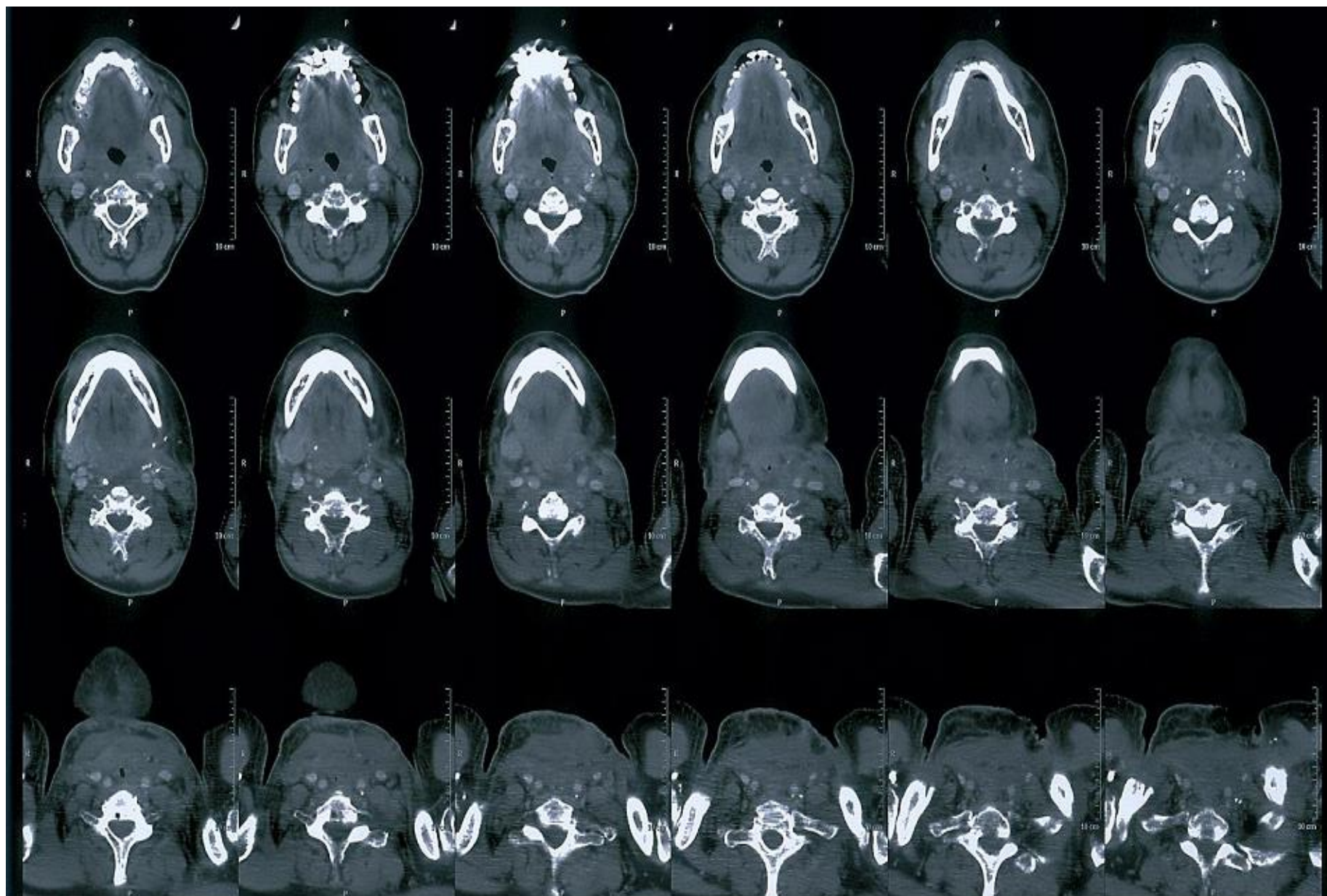
- *Free from tumor*

### **H) Part of right clavicle, resection:**

- *Free from tumor*

### Immunohistochemistry Report

<b>Material Received:</b>	The specimen consists of one paraffin embedded block as No. S-99- 4889/A5 pathology Report from Hospital .
<b>IHC markers: Interpretation:</b>	<ol style="list-style-type: none"><li>1) Ki67: Positive in about 70% of tumor cells</li><li>2) P53: Positive in tumor cells</li><li>3) HMWCK: Positive in most tumor cells</li><li>4) CK19: Positive in most tumor cells</li><li>5) CK7: Negative in tumor cells</li></ol>
	<u><b>IHC study and histopathologic changes support following final diagnosis:</b></u> Consistent with well differentiated squamous cell carcinoma.





## *MDCT STYDY OF NECK WITH CONTRAST*

### *• Technique:*

*- CT images in the axial plane were obtained from the level of the frontal sinuses inferiorly to the thoracic inlet following administration of intravenous contrast agent using 64 slice scanner.*

### *• Findings:*

*Orbits , paranasal sinuses and skull base : Normal.*

*Nasopharynx : Normal .*

*Suprahyoid neck : Normal oropharynx , oral cavity , parapharyngeal and retropharyngeal spaces.*

*Infrahyoid neck : Total laryngectomy with tracheostomy and fluid collection and edema in base of neck and suprasternal notch.*

*Thyroid : Normal.*

*Thoracic inlet : Normal lung apices .*

*Lymphnodes : Normal. No lymphadenopathy.*

*Vascular structures : Normal.*

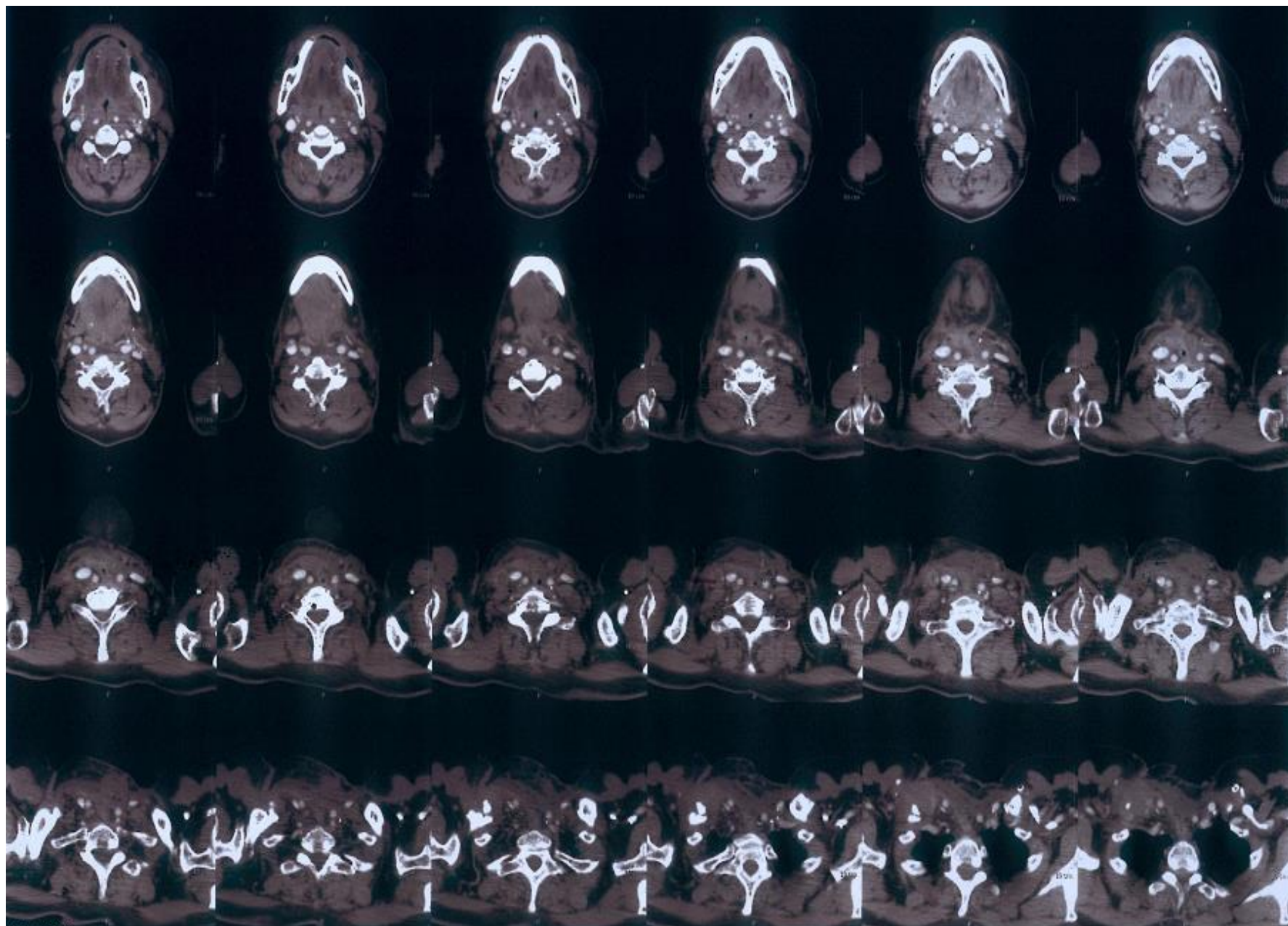
*Bones : Normal.*

*Other findings : Resection of left submandibular gland.*

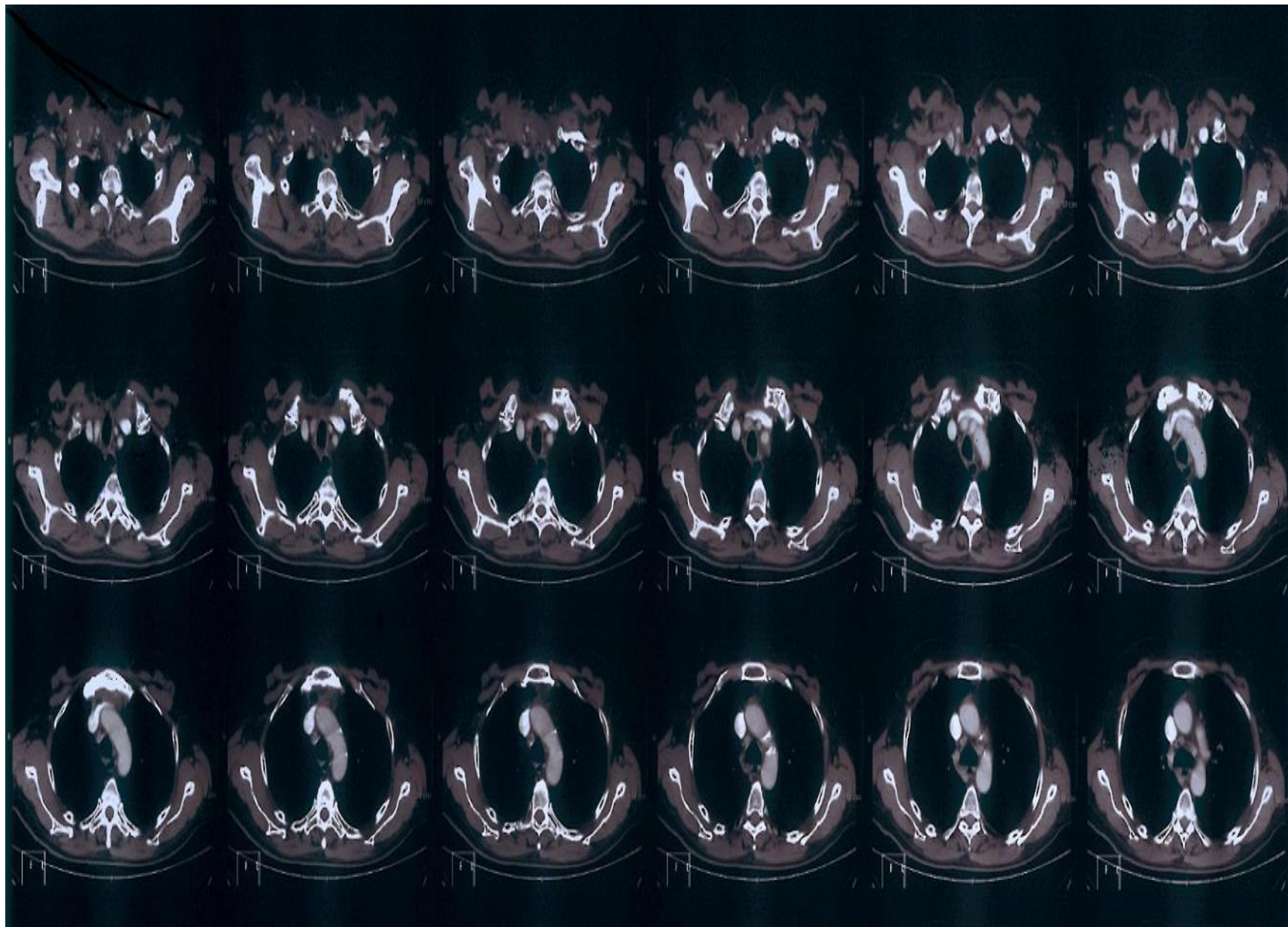
### *• Impression:*

*- Post-surgical change.*

*NOTE: Due to recent surgery and post-surgical changes in bed of surgery, evaluation of tumor residue is not possible accurately and if needed MRI with contrast and / or PET-CT is recommended*









## *MDCT STYDY OF NECK WITH CONTRAST*

### *• Technique:*

*- CT images in the axial plane were obtained from the level of the frontal sinuses inferiorly to the thoracic inlet following administration of intravenous contrast agent using 64 slice scanner.*

### *• Findings:*

*Orbits , paranasal sinuses and skull base : Normal.*

*Nasopharynx : Normal .*

*Suprahyoid neck : Normal oropharynx , oral cavity , parapharyngeal and retropharyngeal spaces.*

*Infrahyoid neck : Post-surgical change as laryngectomy, resection of clavicles heads and tracheostomy.*

*Thyroid : Normal.*

*Thoracic inlet : Normal lung apices .*

*Lymphnodes : Enlarged lymphnode in base of neck in right side(18 mm) with increased size since last study dated 99.11.16.*

*Vascular structures : Normal.*

*Bones : Normal.*

*Other findings : None.*

### *• Impression:*

*- Enlarged right cervical lymphnode.*

*- Post-surgical change.*

## CT SCAN STUDY OF CHEST WITH CONTRAST

### • Technique:

- Multiple axial images of the chest from the thoracic inlet to the upper abdomen are acquired with intravenous contrast material using 64 slice scanner. 5-mm contiguous axial images are reconstructed.

### • Findings:

Lung and large airways: A single nodule (6 mm) in priphery of LLL with increased size since last study dated 99.11.16. Tracheostomy as post-surgical change.

Pleural : Normal .No pleural effusion or thickening.

Heart and pericardium : Heart size is normal.No pericardial effusion.

Mediastineum and hila : Normal.

Chest wall and lower neck: Normal.

Vessels: Normal.

Bones : Resection of medial heads of both clavicle.

### • Impression:

- Enlarged LLL nodule.

- Post-surgical change.