

CLINICAL, RADIOLOGICAL, PATHOLOGICAL STUDY OF NECK MASSES

Contributors: Dr Vatsal Patel(Professor),Dr Alpesh Patel(Associate Professor), Dr Nehal Patel(Assistant Professor), Dr Vandit Shah(1st year Resident)

Corresponding Author:Dr Pooja Sharma

ABSTARACT:

BACKGROUND

Neck masses are any swelling or enlargement of structures in area between the inferior border of mandible and clavicle. As there are many potential causes of neck masses, it is important to correlate diagnosis clinically radiologically and pathologically. Sonography is mainly first imaging modality after clinical examination. Pathologically FNAC(Fine Needle Aspiration Cytology) and HPE(Histopathological Examination) can be considered. Thus the combination of them benefits in screening sensitivity and valuable diagnostics information in preparatory evaluation of patients. The intent of this study is to evaluate the correlation of clinical, radiological and pathological relation in study of neck masses.

METHODOLOGY:

Patients referred for neck swelling irrespective of age and sex. All indoor and outdoor patients of hospitals presented with palpable neck swelling.

RESULTS:

The commonest age group was 11-20 year with mean age of 33.77 year. The male: female ratio of 1:2.03 with most common anatomical site for swelling is posterior triangle. Highest number of patients had lymph node pathology 65%, followed by thyroid involvement 24.3%, salivary gland disease 2.4% and other soft tissue swellings 8.3%. All clinically diagnosed thyroid and soft tissue swelling were similar to radiological and cytological findings. FNAC of 18% lymph nodes, 20% thyroid swellings and 20% soft tissue swellings did not correlate on HPE. All cases of salivary gland swellings matched on HPE. USG of 93.8% of lymph node, 97.2% of thyroid, 96% of soft tissue swelling were found similar to FNAC/HPE finding. Salivary gland USG were similar to FNAC/HPE findings

CONCLUSION:

Neck swellings are common in all age groups in both sexes. USG as a primary investigation modality since it is non-invasive, cost effective and easily reproducible with accuracy of 94.98%. Fine Needle Aspiration Cytology is a simple, fast, inexpensive and minimally invasive technique with accuracy of 83.33%. Histo-pathological examination remains a gold standard for diagnosis of neck swellings

INTRODUCTION:

Neck masses are any swelling or enlargement of structures in area between the inferior border of mandible and clavicle. As there are many potential causes of neck masses, it is important to correlate diagnosis clinically radiologically and pathologically. Sonography is mainly first imaging modality after clinical examination as it is affordable and without radiation and cost effective. Next imaging can be CT SCAN afterwards if needed. Pathologically FNAC(Fine Needle Aspiration Cytology) and HPE(Histopathological Examination) can be considered. Thus the combination of clinical, radiological

and pathological examination provides benefits in screening sensitivity and valuable diagnostics information in preparatory evaluation of patients. The intent of this study is to evaluate the correlation of clinical, radiological and pathological relation in study of neck masses.

AIMS AND OBJECTIVES: The Aims behind conducting this study is to

- 1)To study correlation of clinical, radiological and pathological finding in study of neck masses.
- 2)To determine the accuracy of ultrasound in evaluation of neck masses.
- 3)To confirm the diagnosis with FNAC (Fine Needle Aspiration Cytology)/HPE (Histopathological Examination)/SURGICAL follow up when needed.

MATERIALS AND METHODS The present study was undertaken in our hospital during August 2019 – June 2021. A total of 300 patients were enrolled in the study who presented with chief complains of neck swellings, irrespective of sex, occupation and socioeconomic status. All indore and outdore patient along with patient who were reffered were included in this study. All patients were undergone to detailed history, general examination and thorough clinical ENT examination. Consent was taken from all patients for the study. After that patient were undergone with radiological and pathological examination. All patients were posted for surgical excision after proper haematological and radiological investigations. All excised specimens were sent for histopathological examination.

OBSERVATIONS TABLE NO I: Gender Distribution of neck swellings:

Sex	Present Study	Suryawanshi Kishor et al ³⁷ (2007)	Pradipkumar Khokle et al ³² (2018)
Male	98(32.7%)	41.67%	40%
Female	202(67.3%)	58.33%	60%

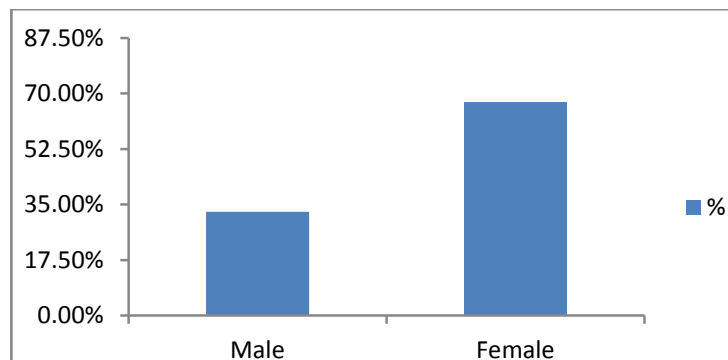


CHART I: GENDER DISTRIBUTION

The male to female ratio is 1:2.03 which show female predominance.

Neck region	No. Of Cases	Present Study Percentage(%)	Mantri G et al ⁴³ (2020) Percentage(%)
Cervical Region			
I. Submental region	6	2	5
II. Submandibular region	30	10	15
III. Anterior triangle	5	1.7	0
IV. Supraclavicular region	35	11.7	13
V. Posterior triangle	135	45	11
Midline region	84	27.9	51
Nape of Neck	3	1	0
Parotid Region	2	0.7	5
Total	300	100.0	100

TABLE NO II: Region wise distribution of neck swellings:

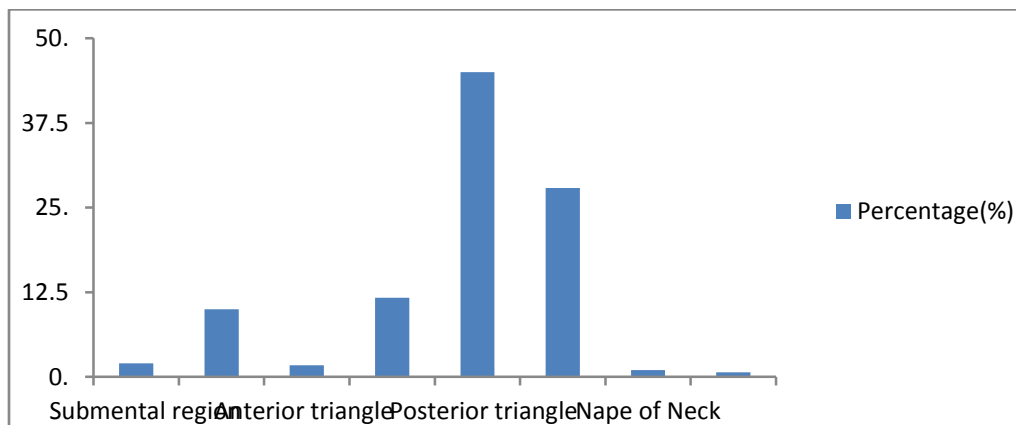


CHART II: REGION WISE DISTRIBUTION OF NECK SWELLINGS

Most common anatomical site for swelling is cervical region followed by thyroid region comparable to other study.

TABLE III. CLINICAL SYMPTOMS OF NECK MASSES

SYMPTOMS	NUMBER	Percentage	Amit et al ⁴⁸	Percentage
Swelling	300	100	85	100
Pain	85	28.3	21	24.7

Dysphagia	5	1.6	19	22.3
Hoarseness	2	.6	4	4.7
Fever	60	20	6	7.5
Weight Loss	12	4	8	9.4

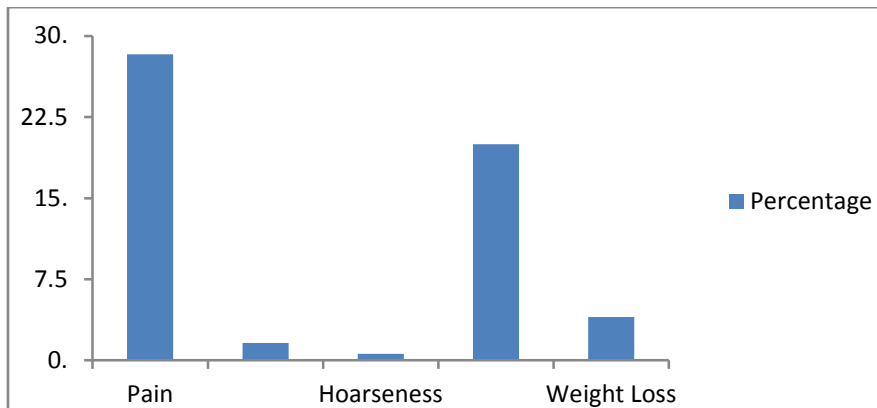


CHART IV: SYMPTOMS OF NECK MASSES

In our study, all cases were having swellings, 28.3% cases swellings were followed by pain, and 20% were having fever along with swelling.

TABLE NO IV: USG SENSITIVITY, SPECIFICITY AND ACCURACY:

	Present study	Mantri G et al ⁴³ (2020)	Chandak et al ⁴⁷ (2011)
SENSITIVITY	94.98	80	100
SPECIFICITY	94.98	95.16	98
ACCURACY	94.98	92.2	98.5

TABLE NOV: FNAC SENSITIVITY, SPECIFICITY AND ACCURACY:

	PRESENT STUDY(%)	TADON ET AL ⁴⁶ (2008)(%)	SONI ET AL ³⁶ (2009)(%)	ADHIKARI P ET AL ³¹ (2011)(%)
SENSITIVITY	83.33	90.9	83.01	
SPECIFICITY	83.33	96.5	78.94	
ACCURACY	83.33	93		

CONCLUSION:

Neck swellings are common in all age groups in both sexes..USG for neck mass has to be done as a primary investigation modality since it is non-invasive, cost effective and easily reproducible with accuracy of 94.98%.Fine Needle Aspiration Cytology is a simple, fast, inexpensive and minimally invasive technique with accuracy of 83.33%, which can be used as a first line of investigation in diagnosing neck swellings. Histo-pathological examination remains a gold standard for diagnosis of neck swellings.Overall all 3, CLINICAL, RADIOLOGICAL AND PATHOLOGICAL modalities needed for final diagnosis of neck masses.

REFERENCES:

- 1) Koss LG. Diagnostic cytology and its Histopathologic basis. Philadelphia. Lippincott company.
- 2) Scott Brown's Otolaryngology Head and Neck Surgery. 7th Edition
- 3) Adhikari P, Sinha BK, Baskota DK. Comparison of FNAC and HPE in diagnosing cervical lymphadenopathies. AMJ 2011, 4,2,97-99
- 4) Soni S Pippal, Yashweer B Shrivastav. Efficacy of FNAC in diagnosis of neck mass; World article of Ear ,Nose and Throat 2010;3(2).
- 5) Mantri G, Jaiswal AA, Pal RK, Sharma N. Role of USG and FNAC in evaluation of Neck masses. Med J DY Patil Vidyapeeth 2020;13:486-97.
- 6) Tondon S, Shahab R, Benton JI, Ghosh SK Sheard J, Jones TM; FNAC in a regional head and neck cancer centre: comparison with a systematic review and meta-analysis. Head Neck,2008;30(9):1246-52.
- 7) R Chandak, S Degwakar, RR Bhowte, M Motwani. An evaluation of USG in diagnosis of Head and Neck swellings. Dentomaxillofacial Radiol. 2011 May;40(4):213-221.