



Cytology Of Head And Neck Lesions In A Tertiary Healthcare Centre In Saurashtra With Corroboration By Histopathology

Dr. Mustafa F. Ranapurwala

Assistant professor, Department of Pathology
Shripramukhswami medical college, Karamsad.Gujarat, India

Dr. Sujata Tripathi

M.D.Pathology, Department Of Pathology
M. P. Shah Medical College, Guru GobindSingh Hospital, Jamnagar, India

Abstract:

This study was conducted in Department of Pathology M.P.Shah medical college, Jamnagar over a period of 1 year to corroborate the fine needle aspiration cytology (FNAC) findings of various head and neck lesions with histopathological examination. This study illustrates the importance of FNAC as a primary n effective diagnostic tool in lesions of head and neck region which due to their anatomical considerations prove to be of considerable diagnostic dilemma to surgical pathologists.

Key words: Fine Needle Aspiration, Cytology, Head and neck region

1.Introduction

Head and neck lesions are an accumulation of diverse diseases occurring in different organs whose relationship to each other consists in the fact that they are located between the base of the skull and the thoracic aperture. The proximity of the organs of the head and neck region makes it difficult for the surgical pathologist to focus on one of these organs and neglect the pathology of others, which are only a centimeter apart.^[1]

The anatomic diaspora includes^[2] :-

- Thyroid and parathyroid.
- Lymph nodes of the head and neck.
- Major and minor salivary glands.
- Oral cavity, oropharynx and larynx.
- Nose, paranasal sinuses and nasopharynx.
- Soft tissue which also includes the orbit and the skin of the head and neck

Complicating matters further the upper digestive tract and the upper respiratory tract, which meet in the larynx, have some basic diseases in common, notably squamous cell carcinoma.

Fine needle aspiration is a minimally invasive technique that is particularly suitable for this sensitive area where incisional biopsies are problematic. It obviates the need for surgery for inflammatory diagnoses and allows more rational planning. If not a type specific diagnosis, it at least allows categorization of disease at community level for further investigations and referral^[3].

Fine needle aspiration is applied to superficial head and neck lesions with commonest indication to investigate a suspicion of local recurrence or nodal metastases. It is also useful for monitoring response to treatment. Apart from diagnosing the neoplastic lesions it also helps in identification of infective agents^[4].

2.Materials And Methods

The study was carried out in the Department of Pathology at Shri M.P. Shah Medical College and Shri Guru Gobind Singh General Hospital, Jamnagar, over a period of 1 year ranging from April 2012 to March 2013.

Patients were sent to the Cytology section from various departments predominantly from the departments of Otorhinolaryngology, General Surgery, Pediatrics and Radiotherapy.

The lesions included those from the thyroid, salivary glands, lymph node, nose and paranasal sinuses, oropharynx, oral cavity & larynx.

For FNAC Needles of 22-23 gauge were used, Fine needle non aspiration cytology for thyroid lesions was done, followed by Haematoxylin & Eosin staining & Rapid papanicolau stain of the smears prepared by the aspirated material. Confirmation by histopathology was done wherever possible.

2.1. The Cytological Categorization

All the cytology diagnoses were finally categorized into the following groups

- Inflammatory
- Benign
- Malignant
- Follicular lesions (applied only to thyroid lesions)
- Unsatisfactory

2.2. The Histopathological Categorization Included

- Inflammatory
- Benign
- Malignant

2.3. Considering Malignancies As Positive And All Others Diagnoses As Negative, Following Were Calculated.

- Sensitivity
- Specificity
- Positive predictive value
- Negative predictive value

2.4. The Discrepancies

The difference in the diagnoses of the cytology and histopathology were duly reported, and the reasons that lead to the discrepancy were sought out.

3.Observations

In our study total 350 cases of head and neck lesions were aspirated of which 192 were from the lymph node, 96 from the thyroid, 28 from the salivary gland 27 were from soft tissues 5 from the oral cavity and 2 from the nose (table I)

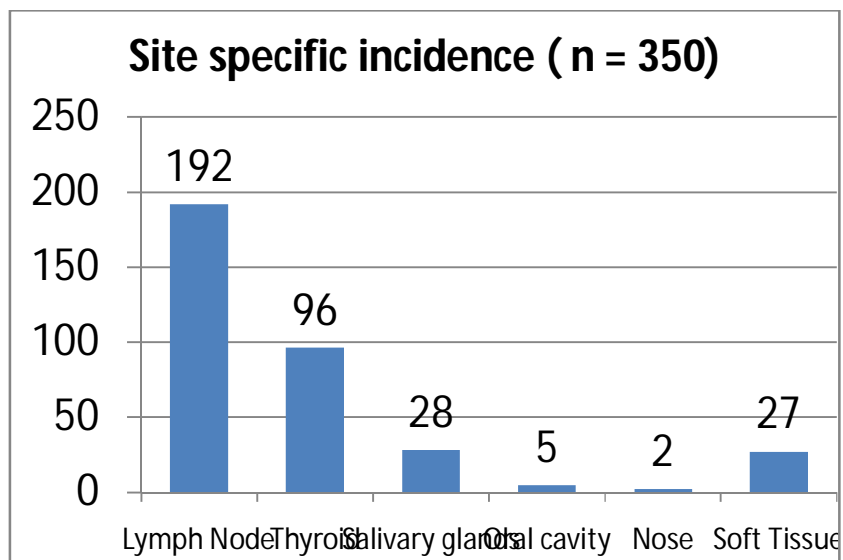


Figure 1 : site specific incidence

3.1.Diagnoses On FNA

Out of 350 lesions,161 were diagnosed as inflammatory,108 as benign,63 were found to be malignant while 13 were deemed as unsatisfactory.4 thyroid lesions were diagnosed as follicular (Table II)

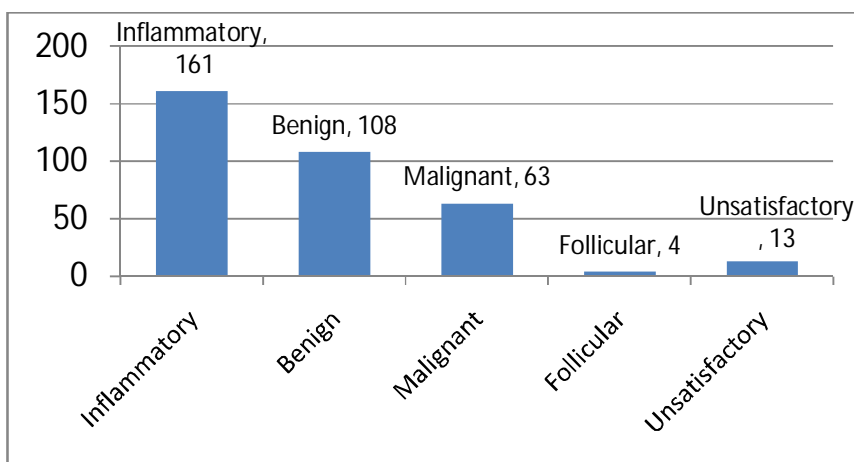


Figure 2: diagnoses on FNA (n = 350)

The diagnoses lesion wise are illustrated in Figure 3

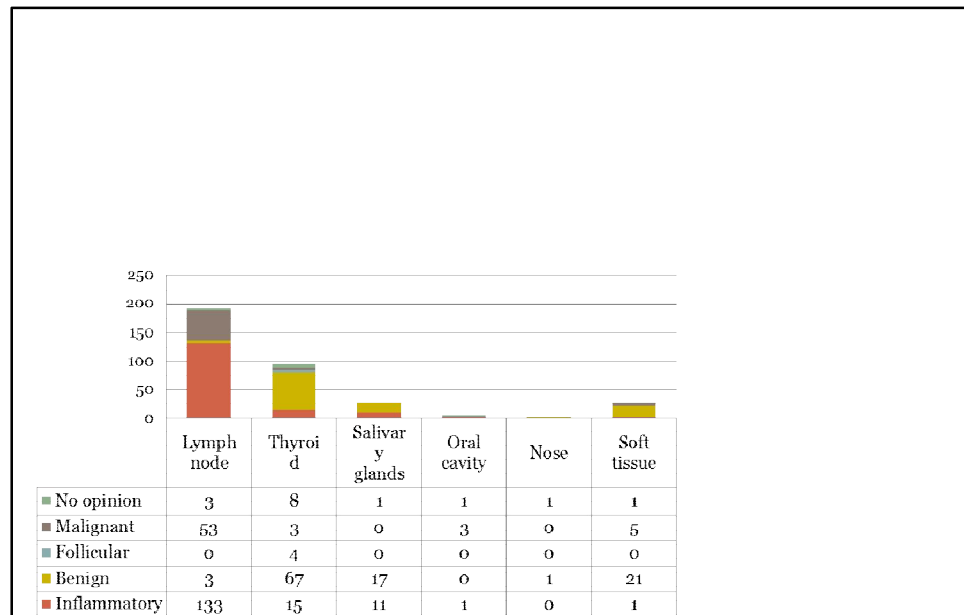


Figure 3: Tissue specific diagnoses

3.2.The Statistics

- Sensitivity = 90.20%
- Specificity = 98.07%
- Positive Predictive Value = 97.87%
- Negative Predictive Value = 91.07%
- Accuracy = 93.27%

4.Discussion

4.1.Cytodiagnoses

The list of diagnosis for the soft tissue lesions is a huge and varied list starting with commonest cystic lesions to the rare tumors like nerve sheath tumor of orbital origin.

Cystic lesions like the sebaceous cyst,branchial cyst, cystic hygroma were diagnosed frequently with type specific diagnosis not possible in some cystic lesions.

HistoCyto correlation was available for 65 cases from the 350 cytology cases taken up.29 of these lesions were malignant on histopathologic examination,27 were benign and 9 were inflammatory.(Table IV)

62 of such cases showed a consistency in their cyto and histopathodiagnoses.

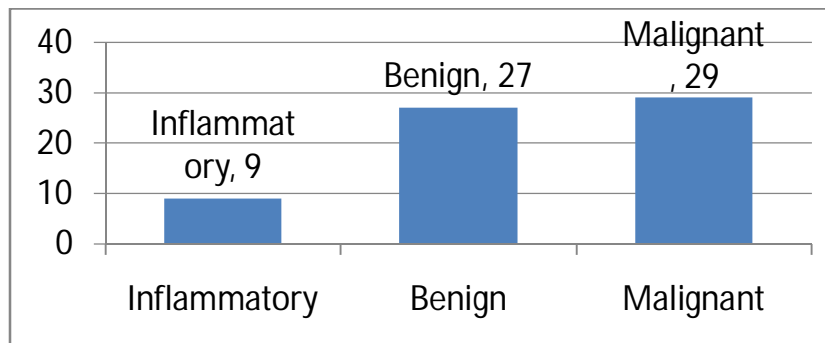


Figure 4 : histopathology diagnoses

3 cytodiagnoses did not corroborate with their histopathodiagnoses.

4.2.The Discordances

A cytological diagnosis of cystic lesion with superimposed inflammation was histopathologically proven to be a case of poorly differentiated squamous cell carcinoma of the base of tongue. The greatest risk of false negative diagnosis is in relation to cystic neoplasms or neoplasms with cystic changes. Squamous cell carcinoma is known to present with cystic changes.

A case of moderately differentiated squamous cell carcinoma was misdiagnosed as granulomatous lymphadenitis. It may be misdiagnosed because of the presence of clusters of epitheloid cells and granulomas that are often seen in squamous cell carcinoma. Also present are foreign body type giant cells and tumor diathesis which may be mistaken for Langhan's type giant cells and caseation necrosis.

A case of colloid Goitre diagnosed cytologically turned out to be follicular variant of papillary carcinoma. The cause for the misdiagnosis may be due to unclear features of papillary carcinoma such as papillary fragments, intranuclear cytoplasmic inclusions, nuclear grooves, prominent overlapping of nuclei was not noticed. And because of papillary microcarcinoma, it might have been misdiagnosed due to missed geographical site of the lesion during FNAC procedure

5.Conclusion

Lymph nodes are the commonest anatomic entities affected in the head and neck followed by thyroid lesions and salivary gland afflictions.

Inflammatory conditions are the commonest pathological diagnoses encountered in almost all the areas. Colloid Goiter was the commonest diagnosis amongst the thyroid

lesions. Malignant lesions were common in the oral cavity. Parotid gland dominated all the diagnoses of salivary gland with benign conditions topping the list of diagnoses.

Maximum correlations were available for lymph node (48.82%) lesions followed by the thyroid lesions (33.86%).

FNAC is accurate, inexpensive, safe, repeatable and rapid diagnostic procedure. It has the advantage of rapid diagnosis with a minimum of surgical intervention. Being minimally invasive, hence, beneficial owing to the proximity of the organs of the head and neck region, which makes surgical interventions much harder. Not only limited to neoplastic conditions, but is also valuable in the diagnosis of inflammatory, infectious and degenerating conditions in which the need for surgery is completely obviated.

It is highly accurate when interpreted by experienced cytopathologists working closely with the clinician and the radiologist.

SAFE i.e. Simple, Accurate, Fast and Economical perfectly fits the description of the procedure of Fine Needle Aspiration Cytology.

6.Reference

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