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ULTRASOUND GUIDED Tru-CUT BIOPSY OF DIFFICULT AREAS LIKE FLOOR MOUTH, BASE TONGUE AND LARYNGOPHARYNGEAL MALIGNANCIES

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ABSTRACT

Introduction-Background- Head and neck lump is a common presentation in ENT clinics. In some deep seated lesions open biopsy or punch biopsy may not be feasible. This may need general anesthesia or sometimes may not yield result. In this study we used Ultrasound guided tru-cut biopsy as a diagnostic tool for sampling these lesions.

Method- Ultrasonography was performed using aseptic precaution by trained ultrasonologist. Ultrasound guided tru-cut biopsy was taken in all the cases. Biopsy sample was examined by pathologist.

Results-All tumors were visualized on ultrasonography; 27 samples were taken b from 9 patients. 7 out of 9 patient'stru - cut biopsy were positive for malignancy. One patient's biopsy was negative for tumor. And one showed fibrosis in a post chemoradiotherapy patient.

Conclusion- Ultrasonography guided biopsy may help in correct diagnosis tru-cut biopsy can be useful tool for deep seated head and neck tumors.

INTRODUCTION

Head and neck malignancies are common in ENT clinics. Because of the lengthy list of differential diagnoses of head and neck lumps, the major role of diagnostic procedures is to effectively narrow the possibility, and finally make an accurate diagnosis. Tissue sampling is regarded as the standard procedure to make the final diagnosis. Floor of mouth, Base tongue and Laryngopharyngeal malignancies, when they are deep and not on surface, pose problems in biopsy sampling. It often needs general anesthesia, deep sampling which creates morbidity and post operative edema may need admission, tracheostomy and involves great cost. Even after this painful process often biopsies come negative which warrants repeat biopsy. Core biopsies have gained popularity because of their ability to achieve a larger sample size, resulting in a higher diagnostic yield than fine-needle biopsy. This technique has most often been applied to abdominal and breast lesions. [1]Conventionally, the standard tissue sampling methods of head and neck tumors include open biopsy (OB) and ultrasound guided fine needle aspiration (USFNA). Open biopsy always provides sufficient specimens that help make the final pathological diagnosis. However, creation of a surgical wound and anesthesia are required for open biopsy procedures. It is especially not favorable for women because esthetic outcome is always cause for concern. In addition, open biopsy is contraindicated for infirm patients who cannot tolerate general anesthesia. [2] Ultrasoundguided core biopsy currently is well established in many medical fields as the standard tissue sampling procedure.

Fig 1 Ultrasonologist taking the Ultrasonography guided tru-cut biopsy.

In solid organs such as breast lesions, USCB demonstrates diagnostic accuracy similar to that of OB, but with a lower complication rate. [3] USFNA can precisely harvest cells from the target lesions with only a small needle puncture wound. Because only cells are harvested for evaluation, the specimen read by an experienced cytopathologist is important for

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obtaining the correct diagnosis. Though immediate onsite interpretation of USFNA results can improve diagnostic accuracy by reducing inadequate sampling, it is expensive and not affordable by many health care systems. [2] The application of ultrasound-guided core biopsy (USCB) in head and neck lesions has recently drawn much attention. In addition to having a high diagnostic rate, USCB can reduce the need for general anesthesia and improve esthetic outcome.[4.5]Limited data is available in this regard in Indian literature. The purpose of this study was to review our experience with Ultrasound guided Tru-cut biopsy of difficult areas in cases of Floor mouth, Base Tongue and Laryngopharyngeal malignancies.

MATERIAL AND METHODS

This study was conducted on patients presenting in Pankaj ENT hospital, Lucknow, from February 2017 to February 2018 with floor of mouth, base of tongue, and laryngopharyngeal malignancy. Patients, having easily assessable ulceroprolifertaive growth were ruled out of this Patients having deep seated (submucosal) tumor, or having structural problems to take biopsy were chosen for ultrasound guided Tru-cut biopsy. Total 9 patients were chosen for USG guided tru-cut biopsy. 2 patients were having Floor of mouth lump, 5 were having involvement of base of tongue and 2 were having involvement of Hypopharynx.

Fig 2 18 Gauge tru-cut biopsy needle

The sampling were done at ultrasound center by trained radiologist. The patients were kept in supine position with neck extended. Neck was disinfected and draped.

Fig 3 Ultrasonography picture during ultasonographic guided tru-cut biopsy

First a thorough ultrasonographic examination of neck was done by GE Logiq P9 ultrasonography machine, with probe model 12L, 9-12 MHz. Then the biopsy was taken by 18 gauge, tru-cut biopsy needle. Total three tissue bites were taken. Care was taken not to injure the vasculature and important structures. After tissue sampling, tissue was taken from biopsy needle, and was checked for quality, followed by fixing in formalin solution. All the biopsies were performed by Radiologist trained in cytosampling. Fixed slides were examined by pathologist, after processing by hematoxylin-eosin stain. Results were recorded, and accordingly patients were planned for further management.

RESULTS

Total 9 patients were included in this study. 7 of them were male and 2 females. The patients were of age group of 42-85 years. 2 patients had involvement of floor of mouth, 5 had base of tongue growth, and one was having involvement of supraglottis and one was involving hypopharynx. One patient had recurrent disease, after chemo radiotherapy. 4 patients were also having involvement of cervical lymph nodes. All the patients underwent CT/MRI before tru-cut biopsy and were having suspicious deep lesion. In cervical lymph node positive patients, FNAC of lymph nodes were done simultaneously. Total 27 biopsy samples were collected, and were sent for histopathology. 6 patients were reported positive for malignancy one patient showed dysplasia and one patient reported as fibrosis only (recurrent disease), in 1 patient biopsy was negative. There was no major complication of the procedure. All lymph node FNAC were positive for malignancy, including the recurrent disease patient, although tru-cut biopsy showed fibrosis in this patient.

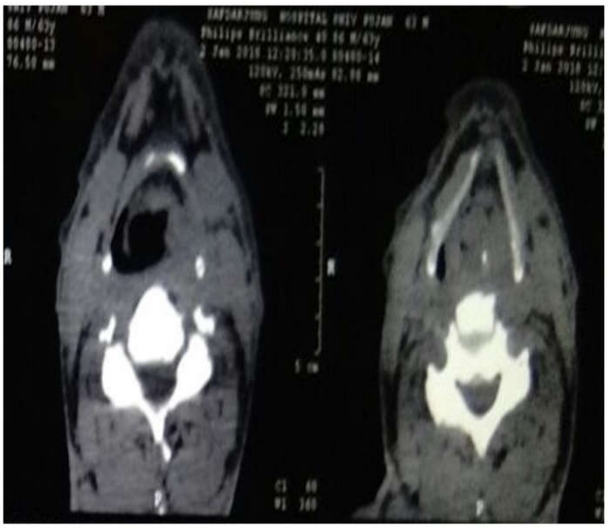

Fig 4 CT san showing hypopharyngeal tumour with compromised airway.

All the patients were referred for surgery or chemoradiotherapy/ radiotherapy. Base of tongue tru-cut biopsy negative patient accordingly underwent tracheostomy followed by biopsy under GA. Biopsy confirmed malignancy (poorly differentiated squamous cell carcinoma).

SN	Age/Sex	Site of involvement	Lymph Node Status	USG Guided Tru-Cut Biopsy Result	Lymph Node FNAC result
1	42Y/M	Floor of mouth	Absent	Poorly differentiated Squamous cell carcinoma	Absent
2	61Y/F	Base Of Tongue	Present	Well differentiated Squamous cell carcinoma	Metastatic Squamous cell carcinoma
3	48Y/M	Hypopharynx	Present	Dysplasia	Metastatic Squamous cell carcinoma
4	52Y/M	Base Of Tongue	Absent	Well differentiated Squamous cell carcinoma	Absent
5	85Y/F	Base Of Tongue	Present	Fibrosis	Metastatic Squamous cell carcinoma
6	66Y/M	Floor of mouth	Absent	Moderately differentiated squamous cell carcinoma	Absent
7	72Y/M	Supraglottis	Absent	Negative	Absent
8	55Y/M	Base Of Tongue	Present	Poorly differentiated Squamous cell carcinoma	Metastatic Squamous cell carcinoma
9	51Y/M	Base Of Tongue	Absent	Moderately differentiated squamous cell carcinoma	Absent

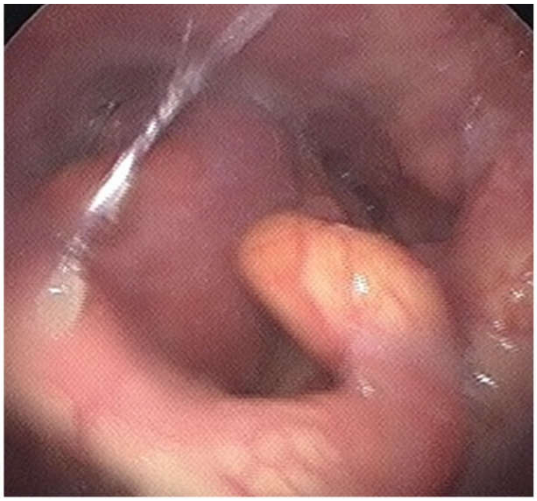

Fig 5 Endoscopic picture showing Submucosal tumor Larynx

DISCUSSION

Tru-cut biopsy in head and neck is safe and minimally invasive procedure which can be performed under local anaesthesia on an outpatient basis. The ability of transcutaneous ultrasound imaging to visualize malignant tumours of the tongue has been recognized for more than 35 years. [6] Nilu *et al* in their study concluded that even though small tumours are difficult to visualize, Ultrasonography can play a significant role in the assessment of hypopharyngealtumour extension within and beyond the larynx. Wagner *et al* [8] performed Ultrasound Guided Transcutaneous Needle Biopsy of the Base of the Tongue and Floor of the Mouth From a Submental Approach, and found it successful. Mohssen *et al* [9] performed Ultrasound guided transcutaneous Tru-Cut biopsy to successfully diagnose laryngopharyngeal masses in 2004-05. In our study total of 9 patients were chosen for USG guided tru-cut biopsy. 7 out of 9 patient showed positive results, without any technical difficulty and without any major complication. In palliative setting it is an attractive alternative to open biopsy without major complication, with successful results. Because of low sample size interoperation cannot be made about malignancy presenting as submucosal growth. In the present scenario it can be best available option to do the biopsy in such lesions to confirm the diagnosis and speedy treatment, further research work is needed in this regard.

CONCLUSION

Ultrasonography aided tru-cut biopsy can be useful tool for deep seated head and neck tumors.

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