IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 20, Issue 3 Ser.9 (March. 2021), PP 21-22
www.iosrjournals.org

A Cross Sectional Study to Evaluate the Diagnostic Accuracy of Ultrasound Guided Percutaneous Transthoracic Core Needle Biopsy in Peripheral Lung Masses

Dr Dhanisha .C.P[1], Dr. B.Pani Kumar[2], Dr.M.Sravan Kumar[3], Dr.P Ravi[4]
[1](Postgraduate ,Department Of Pulmonary Medicine,Kakatiya Medical College, Warangal)
[2](Associate Professor , Department Of Pulmonary Medicine,Kakatiya Medical College, Warangal)
[3](Professor And Hod , Department Of Pulmonary Medicine,Kakatiya Medical College, Warangal)
[4](Assistant Professor, Department Of Pulmonary Medicine,Kakatiya Medical College, Warangal)
Corresponding Author: Dr. B.Pani Kumar

Date of Submission: 04-03-2021 Date of Acceptance: 18-03-2021

I. Introduction

Various diagnostic techniques(both invasive and non invasive) have been employed to obtain tissue for the diagnosis of intrathoracic lesions , ultrasonography being one of them. Ultrasonography (USG) provides a revolutionary advance in recent times in diagnosing pulmonary conditions.The ability to perform diagnostic procedures in real time and not expose the patient or the physician to radiation makes it an important diagnostic tool. Its safety and efficacy has been established in many diagnostic procedures including identifying the thoracentesis site, insertion of chest tubes, transthoracic fine needle aspiration biopsy (TTFNAB), diagnosis of pneumothorax, and, notably, detecting pleural fluid.Ultrasound guided transthoracic lung biopsy is readily accessible and cheap with a high diagnostic accuracy, does not involve radiation exposure, is less invasive, does not require general anaesthesia or sedation, supports procedures in real time, and is associated with low morbidity, mortality, and complication rates.

II. Aims And Objectives

1)To Evaluate the diagnostic accuracy of ultrasound guided percutaneous trans thoracic core needle biopsy in peripheral lung masses.
2)To study the correlation of clinico-radiological and pathological finding of peripheral lung masses.

III. Patients And Methods

The present study was cross sectional observational study conducted in the Department of Pulmonary Medicine, Kakatiya medical college, Warangal, Telangana in collaboration with the Department of Radiodiagnosis and Department of Pathology from November 2018 to November 2020. A total of 40 patients with chest radiograph finding of mass lesion in peripheral lung field were evaluated . Lesion location was achieved by scanning the intercostal spaces, and Doppler scan was used to bypass the vessels from the biopsy path. Biopsy site was then disinfected and local anesthesia was given. The biopsy was performed using a GUN BIOPSY needle under real-time guidance with Ultrasound. The biopsy sample was saved in a formalin jar and sent for histopathology

IV. Results

The study was carried out on 40 patients admitted to Department of Pulmonary Medicine, GOVERNMENT CHEST DISEASES AND TUBERCULOSIS HOSPITAL ,WARANGAL ,TELANGANA.

- Among these patients, 57.5% are males and 42.5% are females
- male to female ratio being 1.35.
- Majority of patients,about 27.5% belong to 50-59 years age group.
- Cough and Shortness of breath were the most common presenting symptoms
- Anatomically mass lesion in majority is situated in the left upper lobe.
- 45% patients were smokers.
- Most patients 67.5% presented with signs of mass in x-ray.
- 30% presented with mass with pleural effusion.
- The size of the lesion was >7 cm in 40% studied group

- .In CT scan 70% had irregular opacity,87.5% had heterogeneous opacity.82.5% had no calcification.87.5% had in homogenous enhancement on CECT scan.
- Total diagnostic yield for malignant cases is 90%.
- Most common malignancy encountered in this study is adenocarcinoma(40%) followed by squamous cell carcinoma(25%).
- In this study NO MAJOR COMPLICATION and NO MORTALITY was reported. Pneumothorax happenend in 5% cases.which was subsided with high flow oxygen.intercostal drainage tube was not required for this minimal pneumothorax.

TABLES

USG guided biopsy-HISTOPATHOLOGY	Frequency	Percent
Adenocarcinoma	16	40.0%
Squamous cell carcinoma	10	25.0%
Large cell carcinoma	1	2.5%
Small cell carcinoma	2	5.0%
Spindle cell neoplasm	1	2.5%
Malignant cell only	6	15.0%
Non specific inflammatory smear	4	10.0%
Total	40	100.0%

COMPLICATIONS AFTER BIOPSY	Frequency	Percent
Pneumothorax	2	5.0%
Bleeding	1	2.5%
Hemoptysis	0	0.0%
Infection	0	0.0%
Subcutaneous emphysema	0	0.0%
Fever	0	0.0%
Pain at the site	32	80.0%
Death	0	0.0%

V. Conclusion

Peripheral pulmonary masses are frequently encountered in chest diseases, and accurate etiologic diagnosis of these lesions is important for the subsequent management. Although X Ray may be helpful for differential diagnosis, they are not conclusive. Ultrasound can provide real-time image guidance in which the nodule is most accessible and evident this contribute high diagnostic yield of the procedure. It doesn't require special radiological interventionists and can be performed at the patients' bedsides by experienced pulmonologists. It does not expose the patients to unnecessary radiations. The machinery is not as expensive and easily accessible, when compared to CT machinery especially in countries like India , where cost is a major drawback. Larger comparative trials must be conducted to generalize these conclusions.

References

[1]. Khan, Rashid A et al. "Diagnostic Yield of Ultrasound-guided Trucut Biopsy in Diagnosis of Peripheral Lung Malignancies." Cureus vol. 11,6 e4802. 2 Jun. 2019, doi:10.7759/cureus.4802

[2]. Diacon AH, Schuurmans MM, Theron J, Schubert PT, Wright CA, Bolliger CT. Safety and yield of ultrasound-assisted transthoracic biopsy performed by pulmonologists. Respiration. 2004 Sep-Oct;71(5):519-22. doi: 10.1159/000080638. PMID: 15467331.

Dr. B.Pani Kumar, et. al. "A Cross Sectional Study to Evaluate the Diagnostic Accuracy of Ultrasound Guided Percutaneous Transthoracic Core Needle Biopsy in Peripheral Lung Masses." *IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*, 20(03), 2021, pp. 21-22.