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ROLE OF BRONCHIAL CYTOLOGY IN THE EVALUATION OF LUNG LESIONS; AN OBSERVATIONAL STUDY IN TERTIARY CARE

Pathology

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ABSTRACT

Introduction- Bronchial cytology has been reported of value in detecting non-neoplastic lesions as well as investigating and monitoring inflammatory lesions. **Aim-** To determine the role and efficacy of bronchial cytology in pulmonary lesions. **Materials And Methods-** The present study is a prospective study conducted in the department of pathology Assam Medical College and hospital from August, 2022 to July, 2023. A total of 40 cases suspected of pulmonary lesions were selected. **Result-** Out of the 40 cases, majority, i.e. 20 cases was inflammatory, 10 cases were malignant, 7 cases were infective and 3 cases were suspected of malignancy. **Conclusion-** Bronchial cytology is a valuable and useful tool, which can be used for establishing diagnosis in advanced cases, in patients with risk of haemorrhage or when the lesion is inaccessible for biopsy

KEYWORDS

Bronchoalveolar lavage, bronchial brushing, lung lesions

INTRODUCTION

- With the introduction of flexible fibreoptic bronchoscopes, cytological techniques such as bronchial brushing, bronchial washing, bronchoalveolar lavage and concurrently prepared cell blocks has become an effective tool in diagnosing patients with advanced malignancies, risk of hemmorhage and lesions at inaccessible sites.
- Bronchial cytology has also been reported of value in detecting non neoplastic lesions as well as investigating and monitoring inflammatory reactions.

AIMS AND OBJECTIVE

- To determine the role of bronchial cytology in pulmonary lesions.
- To determine the efficacy of bronchial cytology in detecting neoplastic and non neoplastic lesions.

MATERIALS AND METHODS

- The present study is a prospective study conducted in the department of Pathology, Assam Medical College and Hospital from August 2022 to July 2023.
- A total of 40 cases suspected of pulmonary lesions were selected where samples of bronchial washing, bronchial brushing and bronchoalveolar lavage were obtained and processed.
- Bronchial brushings was performed using disposable straight brushes. The bronchial brushing material was smeared on to five to six clean slides, three to four slides were fixed in alcohol and the rest were air dried.
- Bronchial washings and lavages were then collected and centrifuged. The smears and cell block were prepared from sediments of bronchial washing and bronchoalveolar lavage.
- Alcohol fixed slides were stained with hematoxylin and Eosin and air dried smears were stained with MGG.
- Special stains for acid fast bacilli and fungal elements were done wherever required.

CASE DISCUSSION

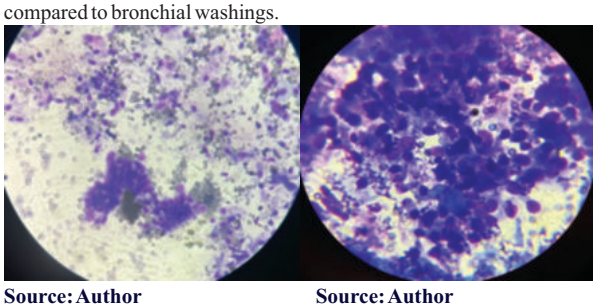
- The present study was done to evaluate the efficacy of bronchial cytology in diagnosing lung lesions. The results were correlated with clinical presentation, fibreoptic bronchoscopy findings and radiological correlation.
- In our study the age group of the patients included in the study ranged from 18 to 80 years.
- The age group of the patients in the non neoplastic lesions ranged between 30years to 60years.
- In our study non specific inflammation was seen in 50% of the cases. This result supports the finding of Tuladhar et al, in which they observed non specific inflammation in 53.3% of cases.
- In our study 3cases of bronchoalveolar lavage on cytology showed acid fast bacilli(AFB) positivity. Baughman et al in their study found that BAL is more sensitive in detecting tuberculous bacilli.

CASE DISCUSSION

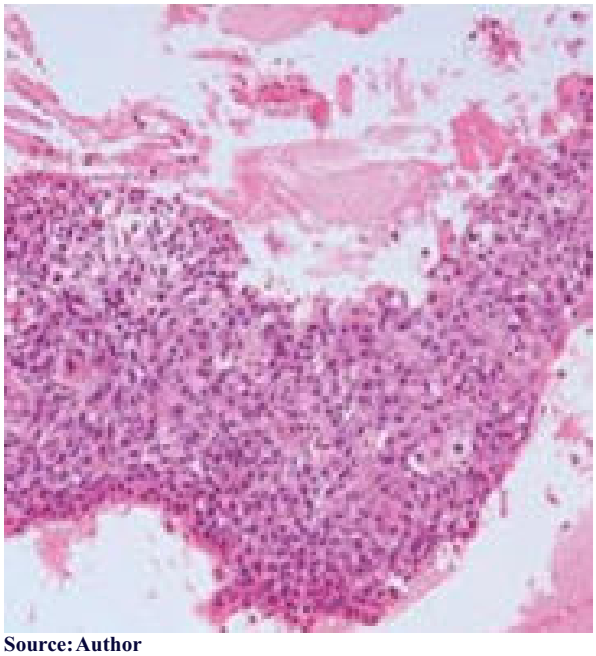
In the present study 2 cases showed features of lung abscess/bacterial origin. Shroff CP et al and Tuladhar A et al found 1.5% and 13.3% cases of lung abscess respectively in their series.

Out of the samples studied 5 cases were found to be malignant. In the 5 cases adenocarcinoma was the predominant followed by small cell carcinoma which is similar to the studies done by Vivekanand et al and Anupama sharma et al where adenocarcinoma cases were more in number compared to small cell carcinoma.

Comparison of cytological characters of bronchial brushings and washings showed that cellularity was greater in brush specimens compared to bronchial washings.

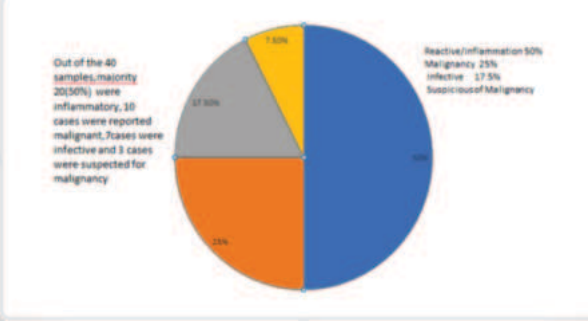


Source: Author **Source: Author**
1.Bronchial Wash-low **2.Bronchial brush showing more cell yield**



Source: Author
3. Cell Block Shows More Cell Yield Detailed Chromatin With Prominent Nucleoli

RESULT



CONCLUSION

• In this study it was found that Bronchoalveolar lavage,bronchial brushing and bronchial washing are effective in diagnosing neoplastic as well as non neoplastic lesions.

• Bronchial washings and brush cytology has very good sensitivity, specificity and accuracy. It yields high cellularity which is good in diagnosing malignant lesions.

• Bronchoalveolar lavage is better than bronchial brushings in detecting tuberculous bacilli.

• Bronchial cytology is economic, safe and is of great use in patients with evidence of obstruction, risk of hemorrhage or lesion at inaccessible sites.

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