

ULTRASOUND-GUIDED TRANSTHORACIC NEEDLE BIOPSY IN A RESOURCE LIMITED SETTING - A CASE REPORT AND FEASIBILITY ANALYSIS

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goiter resection following presentation for evaluation of neck mass, identified as non-malignant retrosternal goiter. The patient was subsequently referred to the thoracic surgery clinic for further management. Patient had significant financial challenges, limiting significant options for biopsy of lung mass. Alongside a visiting pulmonary physician with experience in thoracic ultrasonography, the patient was offered ultrasound-guided lung biopsy at her clinic visit and same was successful. Equipment required were relatively easy to acquire and patient's cost for equipment was limited primarily to 24-gauge tru-cut biopsy needle. Biopsy results revealed, Invasive Squamous Cell Carcinoma – moderately differentiated. The patient was subsequently referred to the Oncologist for further care.

INTRODUCTION

Ultrasound-guided biopsy of lung masses is a relatively simple, low-risk mechanism for diagnosis of peripheral/pleural based lung masses. There is limited use however, in resource limited settings. We present a case highlighting it's use and relatively low cost-burden particularly in resource limited settings

CASE PRESENTATION

An 83-year-old female with a history of remote Left Breast Cancer post Left Modified Radical Mastectomy and External Beam Radiotherapy. Presented for evaluation of incidental lung mass on CT scan of chest in preparation for retrosternal

DISCUSSION

Lung cancer is an increasing problem in the developing world due to a multitude of factors including persisting increasing trends in cigarette smoking, there are significant disparities in access to diagnostic options. **Despite the relative prevalence of bedside ultrasonography in resource-rich settings, it's prevalence in resource-limited settings as a key adjunct to biopsy of lung masses remain limited.** There are significant disparities in access to health care facilities and inequitable distribution of resources and treatment options for lung cancer patients. Relative improvements in mortality currently seen in resource-rich settings currently do not extend to low-to middle income settings. A multi-faceted approach is required to truly tackle this disparity, including providing alternative options for biopsy of lung masses. In Jamaica, patient's are often limited in their options for biopsy of lung masses, depending on access to financial funding which can significantly limit their access to treatment options. Our patient represents the typical patient that has been described in resource limited settings and the availability of a relatively low-risk procedure continues to limit timely diagnosis.

CONCLUSION

There is a need for increasing training and multi-faceted options to the diagnosis and management of lung cancer in resource-limited settings.

APPENDIX

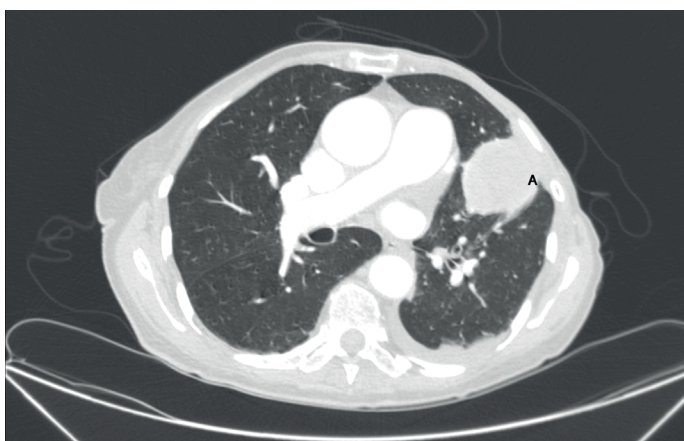
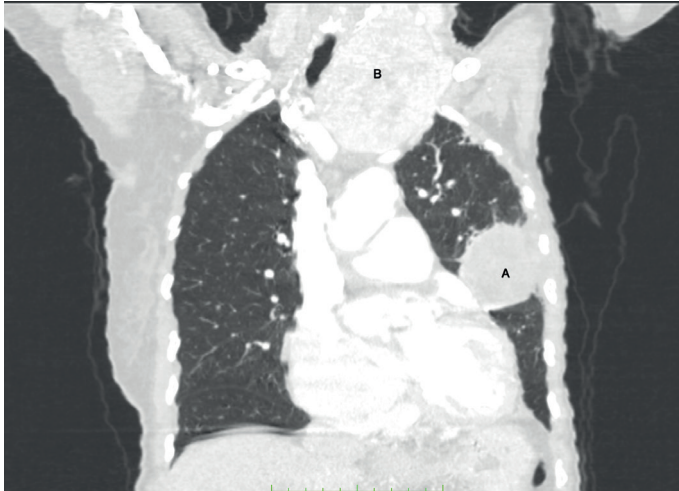


Figure a: Axial cross section of CT Chest showing the pleural base mass
A. Pleural base mass extending to the skin



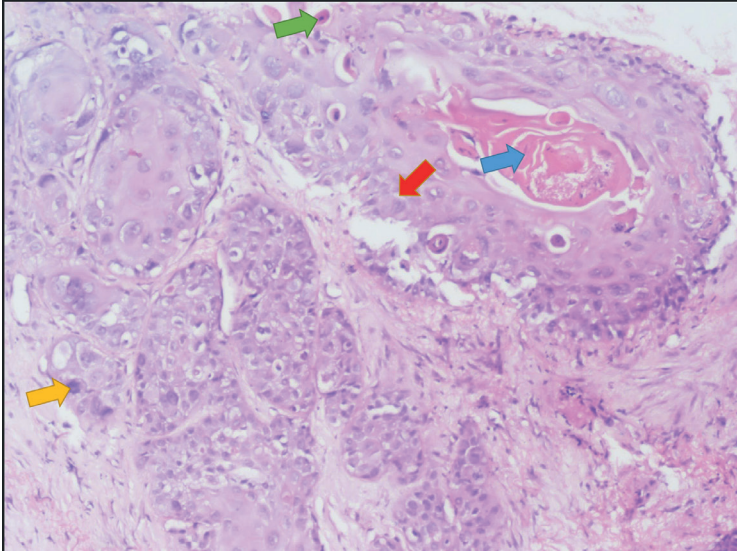
A. Pleural base mass extending to the skin.

B. Multiple Nodular Goitre having mass effect on the trachea exhibiting deviation to the right and mild compression.

Figure b: Coronal cross section of CT Chest showing the pleural base mass along with the nodular goitre

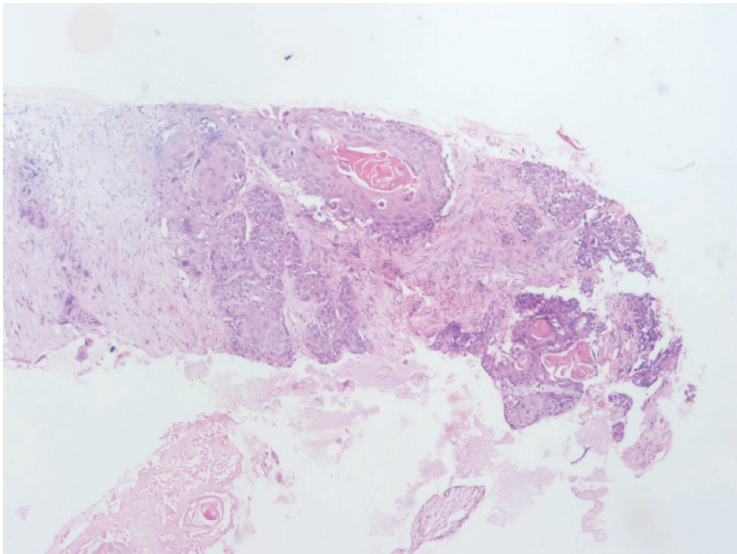


Figure c: Ultrasound image during the biopsy showing the pleural base mass



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Figure 2: Higher Power View showing the neoplasm disposed as nests of plump polygonal cells with abundant pink cytoplasm and connected by intercellular bridges (↗). The individual cells display marked nuclear pleomorphism and have prominent nucleoli. Mitoses (↗) are occasionally seen. Individual cell keratinization (↗) and keratin pearl formation (↗) are prominent throughout.



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Figure 1: Low Power View shows fibroconnective tissue extensively infiltrated by a neoplasm disposed as nests of plump polygonal cells with abundant pink cytoplasm and connected by intercellular bridges.