



CT- GUIDED TRANSTHORACIC FINE NEEDLE ASPIRATION OF PULMONARY LESIONS: OUR EXPERIENCE

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Objective:

Aim: to evaluate the significance of CT- guided transthoracic fine needle aspiration (CT-TTFNA) as a diagnostic procedure of pulmonary lesions in our institution.

Methods: this retrospective study included 391 consecutive patients with a range of pulmonary benign to malignant lesions over period of 29 months. CT-TTFNA was done with or without



concurrent needle biopsy. The procedure was done by an experienced radiologist, supervised radiology resident and cytologist. Obtained materials of CT-TTFNA were expelled on glass slides and smeared, or if it was a biopsy material, imprint cytology was made. Microscopic assessment of unstained cytology slides for material adequacy was done immediately on site by trained cytologist at low and/or medium magnification (100x and/or 200x) and under reduced microscopic light. If needed, CT-TTFNA procedure was repeated two times. Postprocedural radiology controls were performed, and the most common complications were pneumothorax and haemorrhage but only a few patients needed surgical chest tube drainage. Unstained cytological slides were labelled and one or more slides were stained by May Grünwald Giemsa (MGG) staining. Remaining unstained slides of the same sample were stored in deep freezer at -20°C. Immunocytochemistry (ICC) was done if it was necessary for setting up the final diagnosis and further predictive ICC was done if the diagnosis was positive for non-small cell lung carcinoma (NSCLC).

Result: the patient population included 224 (57,3%) males and 167 (42,7%) females. Out of 391 CT-guided procedures, 239 (61,1%) were TTFNAs, 103 (26,3%) were biopsies with biopsy imprint cytology slides, 27 (6,9%) were biopsies with TTFNAs (without imprints for cytology) and 22 (5,6%) were combined biopsies with imprint cytology and TTFNAs. Out of 391 samples, 111 (28,4%) were negative for malignancies, and 59 (15,1%) samples were with atypical and/or suspicious cells while in 221 (56,5%) samples final diagnosis was established. Out of 266 CT-TTFNAs, 91 (31,6%) samples were negative for malignancies, 42 (15,8%) were with atypical and/or suspicious cells, in 82 (30,8%) samples adenocarcinoma was diagnosed, 25 (9,4%) were squamous cell carcinomas, NSCLCs were labelled in 7 (2,6%) samples, 15 (5,6%) were other malignancies, and 4 were tumors of uncertain malignant potential. Our results were comparable with the literature data.

Conclusion: CT-guided transthoracic fine needle aspiration (CT-TTFNA) is safe, accurate and minimally invasive procedure that has been successfully used for decades to diagnose peripherally located lung lesions.



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