CT-guided fine-needle aspiration biopsy of pulmonary lesions under 15 mm of diameter: results on 68 consecutive patients

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BACKGROUND

Most reports on lung fine needle aspiration cytology (FNAC) demonstrate that the diagnostic accuracy tends to decrease with the size of the lesions, and that the frequency of complications increases as the size of lesions decreases.

PURPOSE

The aim of this prospective study was to describe the accuracy and incidence of complications related to FNAC of solitary pulmonary nodules (SPNs) of 15 mm or less in diameter. Moreover, we evaluated how this procedure during the initial evaluation of patients with SPN can reduce the number of unnecessary surgery.

MATERIAL AND METHODS

From January 2012 to December 2014, 225 patients with an SPN between 7-15 mm in diameter were referred to our Institution. Patients with risk factors such as ASA 3, FEV1 <70% of predicted, cardiac comorbidity or previous chest surgery were enrolled. A total of 68 patients were candidate to CT guided FNAC

RESULTS

The prevalence of malignant pathology in the whole population was 61%. Forty-nine out of 68 smears (72%) were considered adequate for diagnosis. Sensitivity was 83%, specificity was 100%. Positive and negative predictive values were 83% and 100%. Out of the total number, 16 patients (23%) avoided surgery. A post-biopsy pneumothorax was detected in 27 cases (39%). The pneumothorax rate was significantly affected by the number of passages (p = 0.01).

CONCLUSIONS

In our experience the diagnostic accuracy value was high. Subjecting patients with undiagnosed pulmonary lesions to FNAC during the initial evaluation significantly reduces the number of unnecessary surgical procedures.

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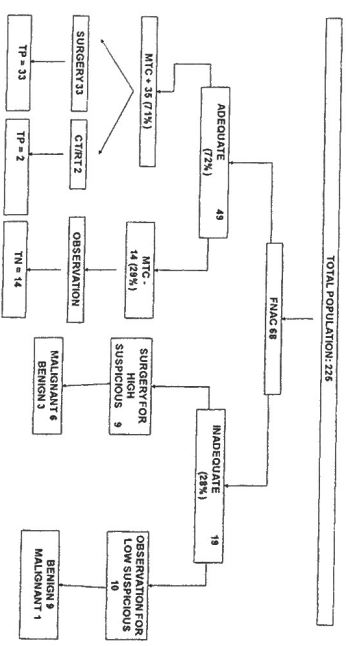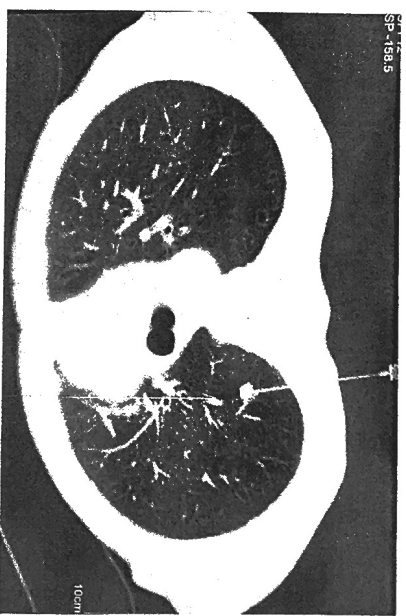
	PNEUMOTHORAX		CHEST DRAINAGE		HAEMOPTYSIS
1 PASSAGE	6		4		1
2 PASSAGES	2	p = 0.01	1	p = 0.03	0
3 PASSAGES	19		14		0
TOTAL (%)	27 (39%)		19 (28%)		1 (1.4%)