

# FIBEROPTIC BRONCHOSCOPY WITH CT GUIDED TRANSBRONCHIAL BIOPSY: INITIAL EXPERIENCE

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[WCBIP] Diagnosis of periferal lung nodules

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**Background:** This study was conducted at the Department of Pulmonology, Guillermo Almenara Hospital in Lima - Peru. Since March 2009 we have included Bronchoscopy with CT guided transbronchial biopsy(TBBx) for peripheral lesions in patients who had undergone conventional FB without evidence of endobronchial lesions.

**Methods:**We conduct a case series; retrospective, descriptive study, to evaluate the diagnostic yield of CT guided TBBx. The study population consisted of all patients undergoing bronchoscopy with CT guided biopsy, a total of 14, performed in 2009 and 2010.

Prior to the CT guided bronchoscopy, imaging tests and conventional FB was performed.

All bronchoscopies were performed by the same physician. In all cases (14 cases) studied, we used the same protocol of diagnostic techniques: bronchial washings, brushings and TTBx to evaluate the performance of these procedures.

Bronchoscopic reports, and pathology and cytology results were reviewed.

**Results:** In our study 14 procedures were performed during 2009 and 2010, 6 had positive results, obtaining 42.80 % of sensitivity. The anatomopathological diagnoses were a carcinoma, adenocarcinoma and tuberculosis. The average of size of the lesion found in the tomography of thorax was 2.3 cm. A surgical follow-up was realized in 3 of 8 patients with negative results.

Of 14 patients who entered the study, 6 had pulmonary lesions less than 2cm and the yield was 0%. In the range of 2 - 2.4 cm, the yield was 50% (2 of 4 patients), in the range of 2.5 to 2.9 cm, the yield was 100% (3 of 3) and the same result for lesions larger than 3 cm (1 of 1).

In smaller pulmonary nodules the diagnostic yield was zero while the yield rises with increasing size of the lesion.

It was found that only the transbronchial biopsies had a yield of 42.80%. Bronchial brushings and washings had zero yields.

**Conclusions:** Bronchoscopy with CT Guide lung biopsy increases the diagnostic yield in peripheral lesions (greater than or equal 2cm) so this procedure could be implemented routinely.

Bronchoscopy remains the primary diagnostic method in nodular lesions and lung cancer, that are visible, but has a poor performance when there is no visible injury. Therefore the CT guided biopsy increases positive results in peripheral lesions and avoid performing more invasive procedures. The yield of this procedure has been high in other international series in which this procedure has been conducted for several years now.

Table 1. CT Guided TBBx diagnostic yield in peripheral lesions depending on size sampled.

Size of peripheral Lesions, cm	Distribution of lung lesions size sampled N = 14	Positive Results	Negative Results	Diagnostic Yield
1.5 - 1.9	6	0	6	0.0%
2.0 - 2.4	4	2	2	50.0%
2.5 - 2.9	3	3	0	100.0%
Greater than or equal to 3	1	1	0	100.0%

Table 2. CT Guided TBBx diagnostic yield in all lung lesions vs lesions greater than or equal to 2cm.

Size of Peripheral Lesions, cm	Distribution of lung lesions	Positive Results	Negative Results	Diagnostic Yield
All sizes	14	6	8	42.8%
Greater than or equal to 2	8	6	2	75.0%

Table 3. Diagnostic Yield depending on sampling methods performed during CT-Guided Bronchoscopy

Sampling Methods	N = 14	Positive Result	Negative Result	Diagnostic Yield
Bronchial Washing	14	0	14	0.0%
Bronchial Brushing	14	0	14	0.0%
Trans Bronchial Biopsy	14	6	8	42.8%