

European Respiratory Society Annual Congress 2013

Abstract Number: 3541

Publication Number: P2303

Abstract Group: 1.4. Interventional Pulmonology

Keyword 1: Interstitial lung disease **Keyword 2:** Bronchoscopy **Keyword 3:** Surgery

Title: Transbronchial cryobiopsy and open lung biopsy in interstitial lung disease: Comparison of two diagnostic tools

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Body: Background: Transbronchial cryobiopsy (TCB) allows representative sampling of lung tissue. It has not yet been evaluated whether this procedure is a reliable diagnostic tool in the work-up of interstitial lung diseases (ILD). Until now, open lung biopsy (OLB) is the gold standard, obtaining lung tissue from ILD patients (pts.). Materials und Methods: We retrospectively analyzed data of 8 ILD pts.who underwent both, TCB and OLB. Pathological results of both methods were analyzed in conjunction with clinical and radiological findings. Tissue samples after OLB and TCB have been investigated independently by two expertized pathologists. Results: In all pts.3-4 TCBs were sampled from 2 different lobes. After TCB, complication were observed: pneumothorax 0/8 pts.; postinterventional bleeding mild in 5/8 pts., moderate in 1/8 pts. No life-threatening events occurred after TCB within 30 days. OLB was performed more than 30 days after TCB in all pts. (2 OLBs from 2 different lobes). After OLB no prolonged chest tube therapy or bleeding was observed, but 2/8 pts. died within 30 days due to acute exacerbation of ILD. Histological findings showed a good correlation between TCB and OLB in 6 cases (75%). In one pt. the findings were discordant (TCB probable NSIP pattern, OLB possible UIP pattern). In one pt. TCB samples showed unspecific changes, whereas OLB showed a definite UIP pattern. Conclusion: OLB may be afflicted with a higher risk for postinterventional 30 days-mortality. Specific histological patterns after TCB may allow to abstain from OLB in many ILD patients. Furthermore, TCB may be an option in pts. who either do not give their consent or are at high-risk for OLB.