Background: Endoscopic ultrasound-guided fine needle aspiration (EUS-FNA) has been demonstrated to be useful to diagnose lesions adjacent to the gastrointestinal tract. The aim of this retrospective single center study is to evaluate the clinical utility of histologic and immunohistochemical analysis for specimens obtained by EUS-FNA.

Method: From January 2009 to July 2010, tissue samples were harvested for both cytologic smear and histologic analysis in 115 patients undergoing EUS-FNA of solid masses. Immunohistochemical stains were performed if a pathologist thought it would be a help for a diagnosis.

Result: Of 116 EUS-FNAs (115 patients), 93 FNAs were from the pancreas, 10 from the gastrointestinal tract, and 13 from adjacent structure (Lymph node, Biliary tract and Retroperitoneum). Final diagnoses were: malignancy (n=90), benign (n=9) and borderline such as neuroendocrine tumor, GIST etc (n=17). Overall sensitivity of cytologic smear, histologic analysis and combined analysis were 70.4%, 67.8% and 82.6%. Sensitivity between cytological smear and combined analysis were statistically different (p<0.001).

Immunohistochemistry was performed in 26 patients with histological specimen. 13 patients with inconclusive cytologic smear were diagnosed through histological and immunohistochemical analysis. In 7 of them, the diagnoses could be made after immunohistochemical analysis.

Conclusion: At EUS-FNA in solid masses, combined cytologic-histologic analysis showed significant higher sensitivity than cytology alone. Immunohistochemistry for tissues obtained by EUS-FNA could be helpful for a diagnosis.