

### Background and aim

The adequacy of EUS-FNA for GI subepithelial lesions is still suboptimal and the repetition of non diagnostic exams increases costs and risks. Rapid on-site evaluation (ROSE) can increase the performance of the procedure in terms of adequacy and number of needle passes but its additional costs might limit its availability. Moreover, the need for assessing the mitotic rate in case of GISTs or NETs suggests the use of histological (FNB) rather than cytological (FNA) needles, in order to get as much tissue as possible, with conservation of the cellular architecture of the tumor. The aim of the study was to assess the adequacy of FNB with up to 2 or more than 2 needle passes when the EUS-guided tissue acquisition of GI subepithelial lesions was coupled with MOSE of the specimen.

### Material and methods

In this retrospective study we included the FNB procedures effected from 2013 to 2020 for esophageal, gastric, duodenal or rectal lesions originating from the submucosa or the muscularis propria of the GI wall. Under conscious sedation the target lesion underwent one or more EUS-guided needle passes using one of the following needles: Cook Procore 22G, Cook Procore 20G, Boston Scientific Acquire 22G. When MOSE was considered adequate, that is to say when the overall length of the acquired cores exceeded 2 cm, the EUS procedure was finished, regardless of the total number of the needle passes effected.

### Results

Overall, 37 patients entered the study; the lesions were located in the esophagus (2), stomach (26), duodenum (6), rectum (3); the needle used were Cook Procore 22G (9), Cook Procore 20G (21), Boston Scientific Acquire 22G (7). FNB was adequate in 21 out of 27 (77.8%) cases after  $\leq 2$  needle passes and in 8 out of 10 (80.0%) cases after  $>2$  needle passes ( $p=0.6$ ). The three needles showed no significant difference in their adequacy rate. Diagnoses were carcinoma (7), GIST (8), leiomyoma (4), NET (2), lipoma (2), pancreatic rest (1), Schwannoma (1), glomus tumor (1), submucosal cells without atypias (3), non diagnostic (8). No adverse events occurred.

### Conclusions

The pre-surgical diagnosis of GI subepithelial lesions remains a challenge as half of them can hide malignant or pre-malignant conditions; moreover, the adequacy of EUS-guided tissue acquisition is still unsatisfactory, despite the use of FNB needles and MOSE. The weakness of this technique does not depend on the number of needle passes, as doing more than 2 passes does not increase the adequacy of the aspirate.