Background and aim
The adequacy of EUS-FNA depends on the number of needle passes, on the technique used, on the location of the target lesion and on the availability of ROSE, while the size of the needle seems less important. The skill of the endoscopist, which may intuitively increase the performance of the procedure, has rarely been analyzed in this setting. Aim of the study was to assess if the experience of the endosonographer has any impact on the adequacy and on the number of needle passes effected while doing EUS-FNA.

Material and methods
This is a single-operator retrospective study conducted in a north Italian secondary center. The EUS-FNA procedures from 2009 to 2020 were analyzed, including the exams effected with 22G or 25G cytological needles on any solid or cystic lesion, in which the aspirate was smeared on slides and fixed in alcohol. ROSE was not available. We assessed if during the increase of the operator's skill the adequacy of the procedure and the number of needle passes varied.

Results
Along this 12-year period we identified three distinct phases. In the initial period (2009-2012) a few (mean 2.6) needle passes were effected and the adequacy of FNA was only 81.0%; in the mid period (2013-2016) the needle passes increased (mean 3.6) and the adequacy raised too (91.9%); in the last period (2017-2020) although the needle passes were reduced (mean 2.3) the adequacy remained satisfactory (91.0%). In these three phases the proportion of the lesions in the pancreas, in lymph nodes, in the GI wall or in other districts were comparable; likewise, no statistical difference was recorded between the performance of 22G or 25G needles in the three periods; no severe adverse events requiring blood transfusion or surgical intervention occurred in the study period.

Conclusions
During the raise of the endoscopist's skill the FNA adequacy gradually increased and the needle passes effected decreased. A limitation of this study is the impossibility to evaluate the positive impact on the FNA performance due to the technical improvement of the EUS processors and probes over the years. Nevertheless, as for other complex EUS-guided therapeutic procedures, the learning curve has a crucial role also on the performance of simple procedures like FNA.