Background and aim

Radial EUS was developed in the '80s and its availability deeply changed our diagnostic and staging protocols for many digestive and bilio-pancreatic diseases. The second step of this technical revolution occurred in the '90s, when linear EUS probes were introduced. The main advantage of these new instruments was the opportunity to get a tissue acquisition of the target lesions by means of needle aspirates, which allowed to add a pathologic confirmation to the echographic diagnosis. Nevertheless, the different orientation and the minor width of the linear ultrasonographic field imposed to the endoscopists some efforts to adapt to these new powerful instruments. Aim of this study was to assess if, when and how these second generation EUS probes have replaced the radial ones in the daily practice in a north Italian secondary center (Mantua, Lombardy).

Material and methods

We retrospectively analyzed our EUS procedures from 2007, when the linear probes were added to the already existing radial probes, to 2020; we assessed the number of the exams effected with the two types of instruments and their indication.

Results

Along this 14-year period the linear probes were gradually introduced in our daily practice and the number of procedures, as compared to the overall EUS exams, accounted for <10% in the period 2007-2008, for 10-20% in the period 2009-2014 and for 59-75% since 2015. As the endoscopists became more confident with these probes, the linear instruments were more and more employed, not only for a bioptic purpose. In fact, the rate of tissue acquisition procedures during the exams effected with linear probes decreased from 100% in the period 2007-2009, to 75-90% in 2010-2014, to 25-35% since 2015. Although linear probes have almost replaced the radial instruments, also when FNA or FNB are not needed, the latter have been and currently are still preferred, in our center, for assessing esophageal, gastric or rectal tumors, due to their faster and easier way to get a complete TN staging; overall, in the study period, 94% of the exams with a GI staging purpose have been executed with radial probes.

Conclusions

After their introduction in our unit, linear EUS probes were mostly used to guide biopsies on lesions seen with the radial scopes, but thereafter they gradually gained trust and popularity, becoming the most used instruments in the daily practice, regardless of the need for getting any tissue acquisition. Nevertheless, radial probes are still keeping an important role in the staging of upper and lower GI tumors.