ENDOSCOPIC ULTRASOUND (EUS) FOR THE DIAGNOSIS AND CHARACTERISATION OF SOLID PANCREATIC TUMORS. ROLE OF ADVANCED IMAGING AND TISSUE SAMPLING

PATIENT INFORMATION / INDICATION

A 67-year-old male was submitted to our Endoscopy Unit for an endoscopic ultrasound (EUS), a pancreatic lesion with liver metastasis was detected after a MDCT. An EUS with guided sampling was performed to complete the diagnosis for this patient.

METHODS & RESULTS

EUS was performed under conscious sedation with the new EG-740UT linear endoscopic ultrasound (EUS) endoscope, attached to the Fujifilm ARIETTA 850 ultrasound processor. During the EUS, by placing the tip of the endoscope in the duodenum (figure 1), a normal pancreatic head was identified with B-mode imaging. However, by visualising the pancreatic body with B-mode imaging, a large lesion could be identified (figure 2). The lesion presented a heterogeneous, hypoechoic, and infiltrative pattern, with a size of 32 mm. Imaging showed the infiltration of splenic vessels reaching distally to the venous confluence. Next steps involved a strain elastography evaluation (figure 3). The lesion presented a heterogeneous predominant blue pattern, with a strain histogram value of 29.96, thus supporting the malignant origin of the tumor. Shear-wave elastography evaluation was also performed (figure 4). Under this analysis, the lesion presented a mean Vs of 3.01 and 27.2 KPa. The lesion was also evaluated using Detective Flow Imaging (DFI), a new imaging technology for visualisation of low velocity blood flow, which showed a hypo-vascular pattern (figure 5). To complete the evaluation, Contrast Enhanced Harmonic Imaging (CHI) was carried out, with the administration of 4.8 ml of Sonovue® contrast agent. The study confirmed the results of the DFI findings, showing a typical hypo-vascular pattern (figure 6). When analysing all images obtained from the various ultrasound imaging modalities (B-mode, Shear wave Elasto, DFI and CHI), the tumor was considered to be a malignant pancreatic tumor, with a high probability for pancreatic adenocarcinoma. In this context, EUS guided tissue sampling was performed from the pancreatic lesion (figure 7). The result of cytohistological evaluation was positive for pancreatic adenocarcinoma.

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Finally, according to MDCT results, the liver was also checked by EUS, showing the presence of multiple solid lesions, related to metastasis (figure 8).

CONCLUSION

EUS B-mode findings revealed a solid pancreatic tumor, and advance ultrasound imaging assisted in providing a systematic approach to the potential final diagnosis (a pancreatic adenocarcinoma). To validate our suspicion, EUS guided sampling was performed, enabling us to confirm the diagnosis of pancreatic adenocarcinoma.
Importantly, EUS also guided the local staging of the lesion, demonstrating the presence of a locally advanced pancreatic cancer.
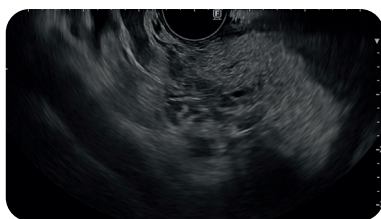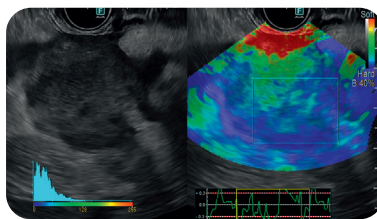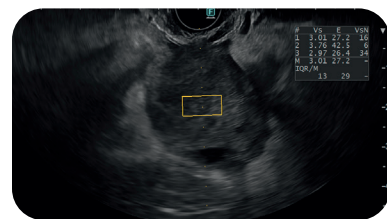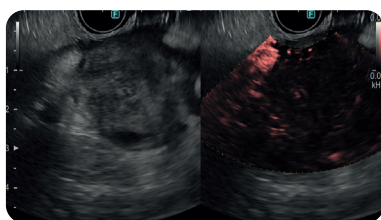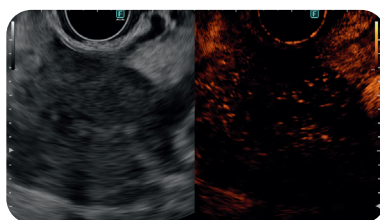

Figure 1

Figure 2

Figure 3

Figure 4

Figure 5

Figure 6

Figure 7

Figure 8