Histopathological and molecular study from EUS fine-needle biopsy of a programmed cell death ligand 1 positive, *KRAS* mutated pancreatic metastasis

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On December 2019, a 73-year-old Caucasian man, smoker presented for concomitant pulmonary and pancreatic tumors showed by computerized tomography. A percutaneous biopsy of the pulmonary mass led to the diagnosis of a poorly differentiated non-small cell non squamous carcinoma with programmed cell death ligand 1 (PD-L1) overexpression (tumor proportion score = 100%), no staining for ALK and ROS1, and *KRAS* mutation (*c.34G>T*). By EUS, two adjacent tumors (20 mm and 13 mm) were showed in the pancreatic body and fine-needle biopsy (FNB) was performed using a 20 gauges ProCore needle [Figure 1a]. Quality of the tissue sampled was adequate for histopathological examination and immunohistochemical staining using antibodies (DAKO) including those for cytokeratin (CK7: Positive and CK20: Negative), thyroid transcription factor-1 (negative), ALK (negative), ROS1 (negative), and PD-L1: 100% of tumor cells [Figure 1c,d,e,f]. Moreover, next-generation sequencing showed *KRAS* mutation (*c.34G>T*), exactly as the primary lung cancer [Figure 1b]. Following these results, it was concluded that pancreatic masses were

metastases from the lung cancer and the patient started an anti-PD-L1 (Pembrolizumab[®]).

To conclude, our case report is a good example of the feasibility of a large panel of Histopathological and molecular analyses from EUS-FNB for pancreatic mass^[1], in the era of molecularly targeted drugs (immunotherapy for MSI tumors, *PARP* inhibitors for BRCA mutated tumors, and *NTRK*-fusion inhibitors).

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient has given his consent for his images and other clinical information to be reported in the journal. The patient understands that his name and initial will not be published and due efforts will be made to conceal his identity, but anonymity cannot be guaranteed.

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Figure 1. (a) EUS-fine needle biopsy of the two pancreatic masses. Samples issued from this EUS-fine needle biopsy allowed to conduct (b) next generation sequencing showing KRAS mutation (c.34G>T), (c) hematoxylin and eosin staining, (d) positive CK7 staining, (e) negative CK20 staining, (f) strongly positive (100%) for programmed cell death ligand 1 staining (scale bar in all panels = 200 μm)

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Conflicts of interest

There are no conflicts of interest.

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