

Endoscopic ultrasound features of familial versus sporadic pancreatic neuroendocrine tumors: a single-center retrospective study

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INTRODUCTION

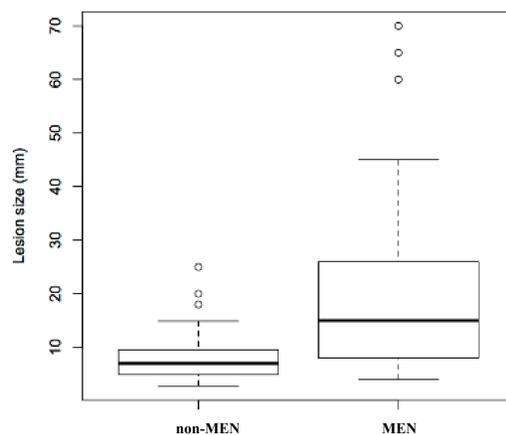
Pancreatic neuroendocrine tumors (pNETs) can either occur in patients with a familial syndrome, like multiple endocrine neoplasia type 1 (MEN-1), or being sporadic. In the last decade, endoscopic ultrasound (EUS) has become one of the first-line investigations for the characterization of pNETs. The ultrasonographic features of a pNET might differ depending on the familial versus sporadic pathogenesis of the tumor. Therefore, the EUS findings might help and direct the accurate definition of a pNET with a possible impact on the most appropriate diagnostic and therapeutic management of pNET patients.

PATIENTS and METHODS

In this single-center retrospective study, we have reviewed the EUS characteristics of 131 pNETs from 38 MEN-1 patients and 14 pNETs from 13 sporadic disease patients at the time of their first EUS assessment. The patients attended consecutively our institution over a 5-year-time period. With the goal of defining the EUS features of MEN-1 versus sporadic pNETs, we have analyzed the most relevant morphological and ultrasonographic aspects of the tumors and compared the findings between the two patient groups.

Figure 1. Comparison of the size of the pNETs detected by EUS in patients with MEN-1 (MEN) and in patients with sporadic disease (non-MEN).

p-value < 0.001, ANOVA



	MEN	non-MEN	Barnard's test
Well defined	112	8	p-value = 0.28
Not well defined	19	6	
Round/oval	128	14	p-value = 0.70
Speckled	3	0	
Homogeneous	28	10	p-value = 0.02
Heterogeneous	103	4	
Hypervascular	7	0	p-value = 0.69
Non-hypervascular	124	14	

Table 1. Analysis of the most relevant EUS characteristics of pNETs in patients with MEN-1 (MEN) and in patients with sporadic disease (non-MEN).

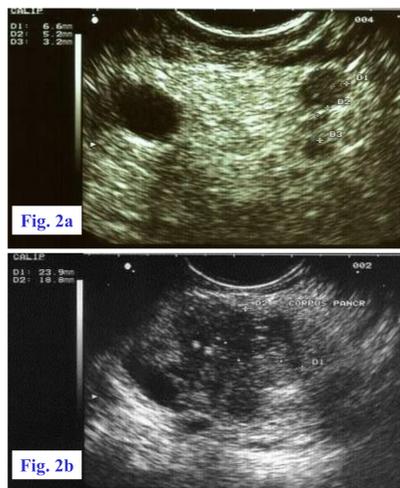


Figure 2a-b. An illustrative EUS picture of a homogeneous pNET (Fig. 2a) and a heterogeneous pNET (Fig. 2b).

RESULTS

Patients with MEN-1 are more likely to present with multiple (3.4 versus 1.1 tumors/patient) and bigger (21.6 versus 7.5 mm) pNETs in comparison to those with sporadic disease (Figure 1). There is no statistical difference with regard to morphology, definition of the margins, and vascularization of the pNETs between the two groups. However, pNETs appear to be significantly more heterogeneous in patients with MEN-1 than in those with sporadic disease (Table 1). An illustrative EUS picture of homogenous versus heterogeneous pNET is provided (Figure 2a-b).

CONCLUSION

In patients with MEN-1 pNETs tend to be more numerous, bigger, and more heterogeneous than in patients with sporadic disease. EUS can help with the precise characterization of a pNET, including the definition of ultrasonographic features which can distinguish a familial versus sporadic disease.

