Pitfall in follow-up imaging of pancreatic neuroendocrine tumor by somatostatin receptor PET

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Abstract

A 56-year old woman was operated of a pancreatic NET in May 2011. Abdominal pain had led to imaging and consecutively the finding of cholecystolithiasis and the tumor. The gall bladder, left hemi-pancreas, regional lymph nodes and the (unintentional injured) spleen were resected. At routine control examination in October 2012 CT presented three contract enhancing intra-abdominal lesions with a diameter of 2–3.5 cm. Consecutively 68Ga-DOTA-NOC PET-CT showed high tracer uptake (SUV 10-12) at these lesions. Therefore a relapse of the neuroendocrine tumor was suspected. After reoperation in December 2012 histology did not reveal any sign of neuroendocrine tumor but identified spleen tissue most probably caused by splenosis accidentally seeded at the first operation. Physiologically the spleen is highly avid at 68Ga-DOTATOC PET, but splenosis presents with less standard uptake value. In our case the described lesions presented with an SUV quite comparable to that of neuroendocrine tumor tissue.

CASE

A 56-year old woman was operated of a pancreatic NET GI T2 N0 (Ki67 2%) in May 2011. Abdominal pain had led to imaging and consecutively the finding of cholecystolithiasis and the tumor. The gall bladder, left hemi-pancreas, regional lymph nodes and the (unintentional injured) spleen were resected. At routine control examination in October 2012 CT presented three contract enhancing intra-abdominal lesions with a diameter of 2–3.5 cm. Consecutively 68Ga-DOTA-NOC PET-CT showed high tracer uptake (SUV 10-12) at these lesions. Therefore a relapse of the neuroendocrine tumor was suspected. After reoperation in December 2012 histology did not reveal any sign of neuroendocrine tumor but identified spleen tissue most probably caused by splenosis accidentally seeded at the first operation.

DISCUSSION

Tumors originating from neuroendocrine cells are increasingly identified, especially among gastro-entero-pancreatic neoplasms (Giandomenico et al. 2013). According to the grading differentiated tumor cells conserve neuroendocrine characteristics as somatostatin receptor expression. Therefore functional nuclear medicine imaging has a role in staging and restaging of NET (Hicks 2010; Cwikla...
et al. 2007). As inflammatory processes due to activated lymphocytes with positive somatostatin receptor staining reveal tracer accumulation in somatostatin receptor scintigraphy, pitfalls in cancer imaging by e.g. octreoscan are possible. Physiologically the spleen is highly avid at ⁶⁸Ga-DOTATOC PET, but splenosis presents with less standard uptake value (Kulkarni et al. 2013). Anyhow, in our case – after splenectomy without the possibility to compare – the described lesions presented with an SUV quite comparable to that of neuroendocrine tumor tissue.

REFERENCES


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