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IMAGE OF THE MONTH

IgG4-related disease revealed by ^{68}Ga-FAPI and ^{18}F-FDG PET/CT

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A 58-year old man had been found with bilateral parotid mass and enlarged cervical lymph nodes for 5 months. Histopathology of the parotid mass showed abundant lymphoplasmacytic infiltration and collagen fibrosis, suggesting IgG4-related sialadenitis. Serum IgG4 was 11,300 (range 80–1400) mg/L. ^{18}F-FDG PET/CT (see Fig. 1(a)) revealed multiple FDG-avid lymph nodes in the neck and mediastinum, and hypermetabolic patches and consolidation in the right lung; the parotid gland and submandibular gland were also hypermetabolic, consistent with involvements of IgG4-RD. As IgG4-RD is histopathologically characterized by "storiform" fibrosis [1, 2], we tried to investigate if ^{68}Ga-FAPI, a recently introduced PET agent–targeting fibroblast activation protein [3–5], had some role in IgG4-RD. The study was approved by the institutional review board of our hospital, and written informed consent for publication of this report was obtained from the patient. In ^{68}Ga-FAPI PET/CT (see Fig. 1(b–d)), the parotid gland, submandibular gland, and the pulmonary lesions showed intense radioactivity. In addition, we also found intense ^{68}Ga-FAPI uptake in the uncinate process of the pancreas (see Fig. 1(arrow)) that was not shown in FDG-PET. Interestingly, the FDG-avid lymph nodes in the neck and mediastinum were negative in ^{68}Ga-FAPI PET. The patient was then treated with prednisone and cyclophosphamide for 2 months, and the follow-up ^{68}Ga-FAPI PET/CT (see Fig. 1(e)) showed marked improvement of the above lesions. This case highlighted that ^{68}Ga-FAPI, a novel PET agent developed for tumor, was not more tumor-specific than FDG; furthermore, it might be more sensitive than FDG in detecting a certain type of inflammations—like the pancreatic lesion in this case. The negative FAPI uptake in the lymph nodes in this case may be attributed to the fact that lymph node involvement in IgG4-RD usually lacks the characteristic storiform fibrosis [1, 2].

This article is part of the Topical Collection on Image of the month

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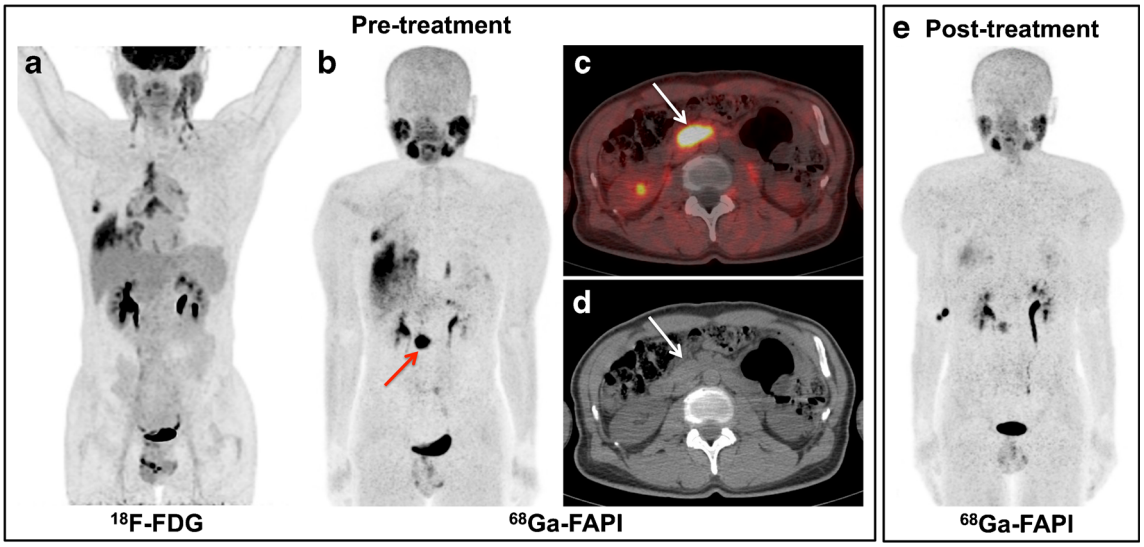

Fig. 1 Pre- and post-treatment PET/CT images of a 58-year old man with IgG4 related disease

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Compliance with ethical standards

The study was approved by the institutional review board of our hospital, and written informed consent for publication of this report was obtained from the patient.

Conflict of interest The authors declare that they have no conflict of interest.

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