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IMAGE OF THE MONTH

FAPI PET for monitoring of rheumatological treatment in multifocal peritoneal nodular fibrosis: a case study

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Here we report a 71-year-old male patient with ANCA-negative vasculitis and rapidly progressive glomerulonephritis presenting with increasing fatigue, weight loss of 10 kg over 3 months, and elevated inflammatory biomarkers (CRP: 7.2 mg/dl). A contrast-enhanced CT showed diffuse soft-tissue proliferation in the perirenal region and the omentum majus with multiple nodular implants in the peritoneal fatty tissue. A biopsy from the infiltrated omentum majus revealed predominantly histiocytic serositis with multinodular fibrosis on H&E. Immunohistochemical analyses showed scattered CD38-positive plasma cells and a small number of IgG4-positive plasma cells (Figure).

An ^{18}F-FAPI-74 PET/CT was performed prior to systemic anti-inflammatory therapy comprising increased uptake in the multifocal peritoneal nodular implants (Figure: *) and in the aortic arch (Figure, arrow). Five weeks after the initiation of oral treatment with prednisolone (initially 1 mg/kg bodyweight with a taper to ½ mg/kg bodyweight at week five), the patient underwent a follow-up ^{18}F-FAPI-74 PET/CT (follow-up 1) with significantly reduced FAPI-uptake in the aortic arch as well as in the peritoneal nodules, despite only slightly decreased morphological appearance of the peritoneal implants, but significantly improved general condition.

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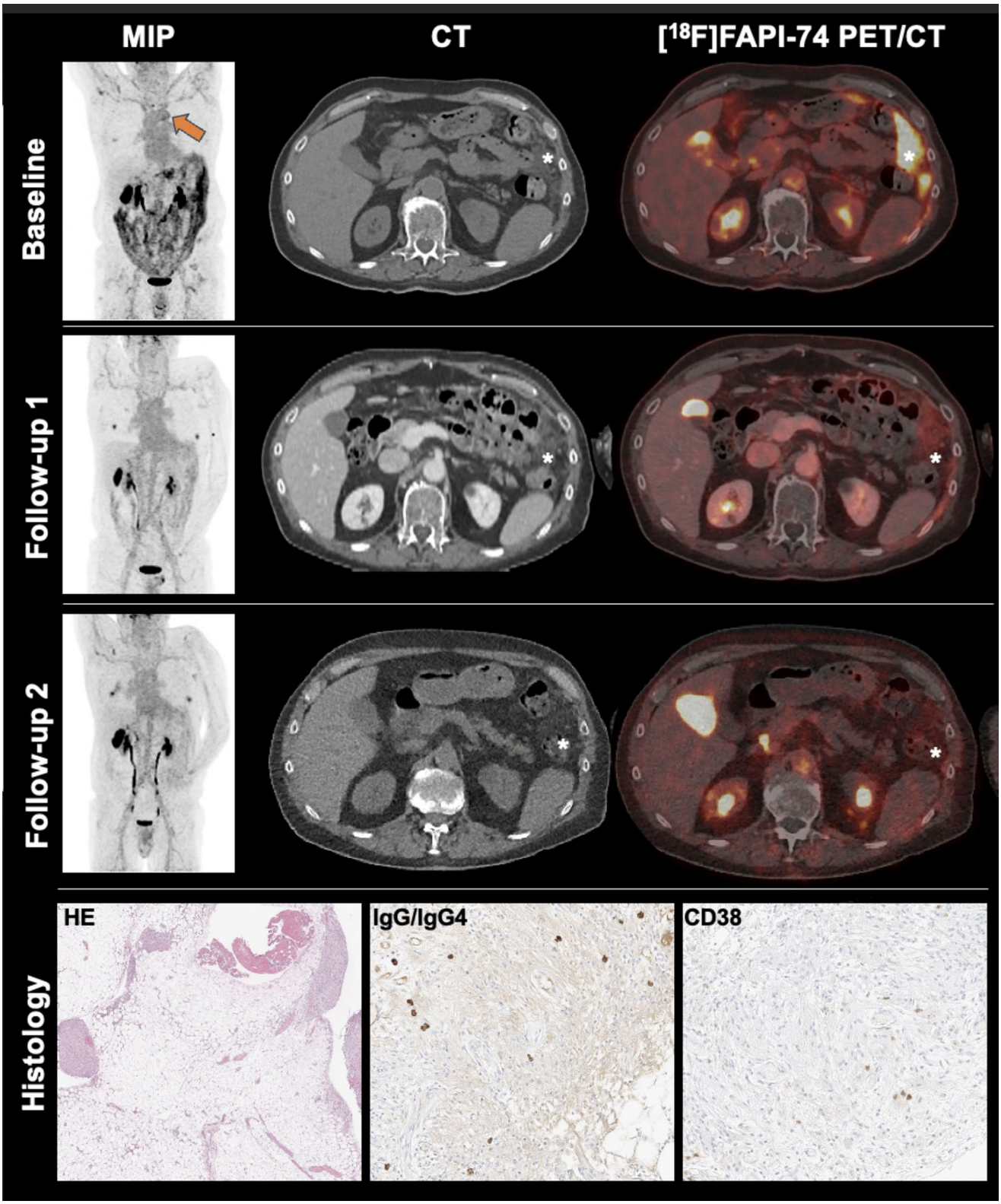
MIP
CT
[18F]FAPI-74 PET/CT
Baseline
Follow-up 1
Follow-up 2
Histology
HE
IgG/IgG4
CD38

A further ^{18}F-FAPI-74 PET/CT three months after the initiation of glucocorticoids showed a no further change regarding FAPI-uptake (follow-up 2). This case illustrates the potential of imaging FAP-associated changes in rheumatoid patients undergoing systemic anti-inflammatory therapy, where changes in PET imaging might depict disease activity earlier than morphological imaging and might predict response to therapy [1].

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Data availability The dataset generated for this case report are available from the corresponding author on reasonable request.

Declarations

Consent to publish The patient agreed to publish this case report.

Conflict of interest The authors declare that they have no potential conflict of interest relevant to this article.

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