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Pancreatic cancer detected with ^{18}F-FDG PET/CT in IgG4-related disease patient

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Conflicts of Interest:

The authors declare that they have no conflict of interest in this study.

Dear editor:

We present a case of a 67-year-old male presenting with severe abdominal pain, laboratory tests revealed IgG levels of 63.5 g/L, IgG4 levels of 63.7 g/L, and negative results for ANCA (Anti-Neutrophil Cytoplasmic Antibodies), Hematuria immunofixation electrophoresis, as well as Cold globulin qualitative test. ^{18}F-FDG PET/CT revealed multiple lesions with increased metabolism in the submaxillary saliva gland, intrahepatic bile ducts, prostate, seminal vesicle glands, and the body of the pancreas. Additionally, a circular cystic-solid lesion with metabolic heterogeneity was observed in the head of the pancreas, accompanied by visible dilatation of the

pancreatic duct (Fig. 1A–1E). The diagnostic imaging suggested IgG4-related disease (IgG4-RD), while pancreatic malignancy could not be definitively ruled out. The patient underwent fine-needle aspiration (FNA) biopsies of lung nodules and the prostate gland, all of which were consistent with the diagnosis of IgG4-RD (Fig. 1F–1G). Additionally, FNA biopsy of a pancreatic lesion is consistent with the diagnosis of pancreatic ductal adenocarcinoma.

IgG4-RD is a group of autoimmune diseases with an unknown etiology. It is characterized by tissue and organ infiltration by IgG4-positive plasma cells and elevated levels of serum IgG4[1]. IgG4-RD is characterized by multiple organ involvement, most frequently affecting the pancreas, bile ducts, salivary glands, lacrimal glands, kidneys, retroperitoneum, and lungs. Patients with IgG4-RD are more prone to developing malignancies compared to the general population and are associated with deficiencies in immune surveillance. The inflammatory state of autoimmune pancreatitis (AIP) can induce pancreatic malignant tumors. Therefore, it is crucial to differentiate AIP from pancreatic cancer[2]. ^{18}F-FDG PET/CT has become a widely utilized method for evaluating IgG4-RD[3,4]. AIP represents the pancreatic manifestation of IgG4-related disease. Typical imaging features show a 'sausage-like' enlargement of the pancreas with a 'capsule-like' rim, accompanied by narrowing of the main pancreatic duct. On PET/CT images, AIP usually exhibits diffuse pancreatic uptake and lower SUVmax values than pancreatic cancer. IgG4-RD patients with focal masses in the pancreas should be carefully followed for early detection of complicating malignancies. Distinguishing between these two entities is crucial to prevent unnecessary pancreatic resections[5]. In cases where patients exhibit multiple organ involvement with highly suspected or pathologically confirmed IgG4-RD, and limited lesions are detected prior to immunosuppressive therapy, FNA biopsy pathology should be performed whenever possible to clarify the diagnosis and exclude malignancy tumor.

REFERENCES

[1] Perugino CA, Stone JH. IgG4-related disease: an update on pathophysiology and implications for clinical care[J]. Nat Rev Rheumatol, 2020, 16(12):702-714. DOI: 10.1038/s41584-020-0500-7.

[2] Poddighe D. Autoimmune pancreatitis and pancreatic cancer: Epidemiological

aspects and immunological considerations[J]. World J Gastroenterol, 2021, 27(25):3825-3836. DOI: 10.3748/wjg.v27.i25.3825.
[3] Cheng MF, Guo YL, Yen RF, et al. Clinical Utility of FDG PET/CT in Patients with Autoimmune Pancreatitis: a Case-Control Study[J]. Sci Rep, 2018, 8(1):3651. DOI: 10.1038/s41598-018-21996-5.
[4] Tang CYL, Chua WM, Cheng LTJ, et al. 18F-FDG PET/CT Manifestations of IgG4-related Disease[J]. Br J Radiol, 2021, 94(1124):20210105. DOI: 10.1259/bjr.20210105.
[5] Roa Esparza Í, Soto-Peleteiro A, Aberasturi Plata Y, et al. IgG4 related disease as a mimicker of metastatic pancreatic cancer[J]. Rev Esp Enferm Dig, 2022, 114(8):505-507. DOI: 10.17235/reed.2022.8737/2022.

Figure Legends

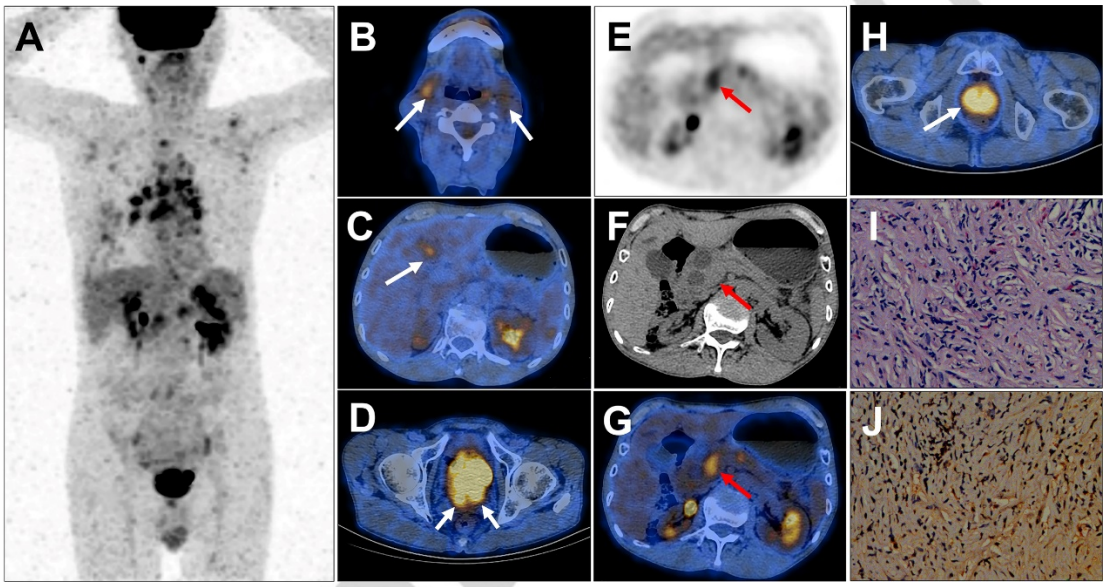

Fig.1. ^{18}F-FDG PET/CT showed multiple FDG-avid lesions in the maximum intensity projection image (A). Axial fusion images showed increased metabolism in the submaxillary saliva gland (B, SUVmax = 3.2, white arrows), intrahepatic bile ducts (C, SUVmax = 4.0, white arrows), and seminal vesicle glands (D, SUVmax = 5.9, white arrows). Axial CT, PET and fusion images showed circular cystic-solid lesion with metabolic heterogeneity was observed in the head of the pancreas, accompanied by visible dilatation of the pancreatic duct (E-G, SUVmax = 4.5, red arrows), with metabolic hyperintensities in the remaining pancreatic parenchyma (SUVmax = 3.1). Axial fusion images showed increased metabolism in the prostate (H, SUVmax = 12.3). Pathologic image of FNA biopsy of prostatic lesion (I), with positive expression of IgG4 (J).