Interesting Image
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A Rare Case of "Periportal Cuffing" as an Incidental Finding on ^{18}F-FDG PET/CT

^{18}F-FDG PET/BT'de İnsidental Olarak Saptanan Nadir Bir "Periportal Cuffing" Olgusu

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Abstract

A 7-year-old boy with known diagnosis of hereditary spherocytosis and ulcerative colitis was referred for ^{18}F-fluorodeoxyglucose (^{18}F-FDG) positron emission tomography/computed tomography after detection of a 28 mm lesion suspicious for malignancy in spleen on upper abdomen magnetic resonance imaging (MRI). As an incidental finding, a moderately increased uptake of ^{18}F-FDG was observed in periportal region with no definable mass. MRI revealed compatible findings with "periportal cuffing" as described on ultrasonography.

Keywords: Periportal cuffing, fluorodeoxyglucose, positron emission tomography, magnetic resonance imaging

Öz

Bilinen herediter sferositoz ve ülseratif kolit tanısı olan 7 yaşında erkek hastaya dalakta 28 mm boyutlu malignite şüpheli lezyon görülmesi sebebiyle ^{18}F-florodeoksiglukoz (^{18}F-FDG) pozitron emisyon tomografisi/bilgisayarlı tomografi uygulanmıştır. İnsidental bir bulgu olarak periportal bölgede karşılığında tanımlanabilen bir lezyon olmayan artmış ^{18}F-FDG tutulumu izlenmiştir. Manyetik rezonans görüntülemede ise aynı bölgede daha önce ultrasonografide tanımlanan "periportal cuffing" ile uyumlu bulgular saptanmıştır.

Anahtar kelimeler: Periportal cuffing, florodeoksiglukoz, pozitron emisyon tomografi, manyetik rezonans görüntüleme

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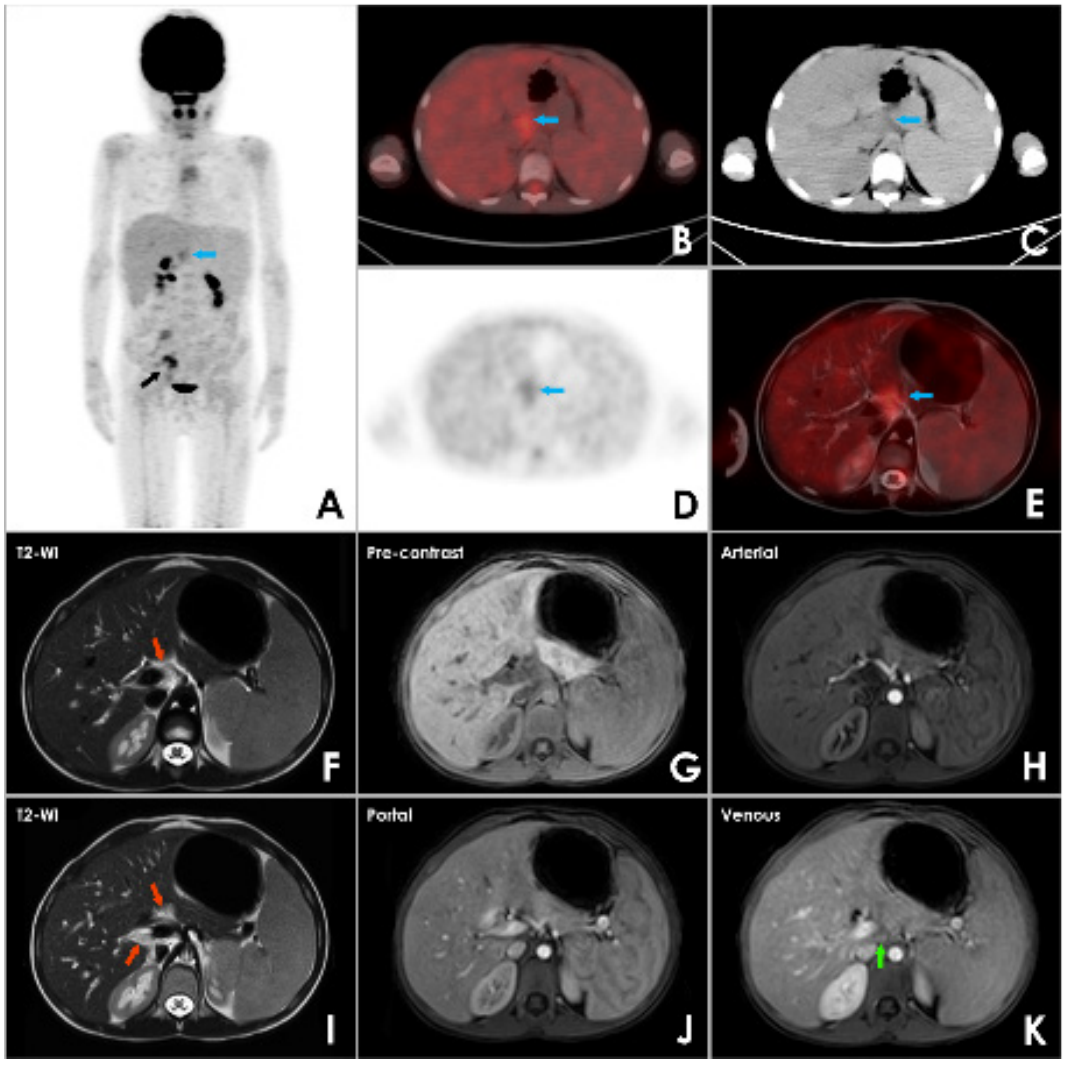

Figure 1. A 7-year-old boy with known diagnosis of hereditary spherocytosis and ulcerative colitis was referred for ^{18}F-fluorodeoxyglucose (^{18}F-FDG) positron emission tomography/computed tomography (PET/CT) after detection of a 28 mm lesion in spleen on upper abdomen magnetic resonance imaging (MRI). The lesion was hypointense on all MRI sequences and no pathological ^{18}F-FDG uptake was detected in PET/CT. Also, there was increased uptake localized to the right colon segment can be observed on MIP **(A)** in the right lower quadrant of abdomen (black arrow) which could be associated with ulcerative colitis. However, as an incidental finding, a moderately increased uptake (blue arrows) of ^{18}F-FDG was observed in periportal region on MIP **(A)** and transaxial **(B, C, D)** images with no definable mass. On the light of the ^{18}F-FDG PET/CT, retrospective evaluation of previous MRI revealed periportal hyperintensity (red arrows) on T2-weighted images **(F, I)** compatible with "periportal cuffing" as described on ultrasonography. Dynamic contrast-enhanced imaging **(G, H, J, K)** showed a progressive contrast enhancement (green arrow) in periportal area. Extrahepatic biliary system was normal and magnetic resonance cholangiopancreatography findings were negative for the primary sclerosing cholangitis. On fusion images of PET/CT and T2-weighted images **(E)** it can be clearly seen that increased ^{18}F-FDG uptake on periportal region corresponds to periportal hyperintensity on MRI.

Ulcerative colitis is a chronic inflammatory disease of bowel and is characterized by mucosal inflammation of colon and rectum (1). Also, it is known that ulcerative colitis is associated with primary sclerosing cholangitis and pericholangitis (2,3,4). Echo-rich periportal cuffing (ErPC) is a rare ultrasonographic finding which can be seen in patients with hepatitis, inflammatory bowel diseases (IBD) and liver transplants. It is theorized that ErPC is caused by lymphatic fluid obstructing periportal tissue but also can be a result of inflammation of periportal zones in patients with IBD (5,6). IBD can also cause aberrant cell migration from the intestinal mucosa into the portal system via enterohepatic circulation, which can result in hyperechogenic periportal cuffing (5,6). It is known that inflammatory and infectious pathologies can be imaged with ^{18}F-FDG PET/CT. Also, in literature there are studies that suggest ^{18}F-FDG PET/CT can be used for assessing disease activity in IBD (7,8,9,10). Even though there are multiple reports of ^{18}F-FDG PET/CT in IBD, to the best of our knowledge, there is no report of periportal cuffing associated with increased ^{18}F-FDG uptake in literature and it is not defined in benign conditions that exhibits increased ^{18}F-FDG uptake (11).

Ethics

Informed Consent: Patient consent was obtained.

Peer-review: Internally peer-reviewed.

Authorship Contributions

Surgical and Medical Practices: B.D., E.Ö., S.K.Ş., G.S., C.T.K., Ö.S.F., A.K.T., E.Ü., Concept: B.D., E.Ö., C.T.K., Ç.S., Ö.S.F., A.K.T., E.Ü., Design: B.D., A.K.T., E.Ü., Data Collection or Processing: B.D., S.K.Ş., G.S., Ç.S., Ö.S.F., Analysis or Interpretation: B.D., E.Ö., S.K.Ş., G.S., C.T.K., Ç.S., Ö.S.F., Literature Search: B.D., E.Ö., C.T.K., Writing: B.D., E.Ö.

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