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Appendiceal diverticulosis: Asymptomatic positive FDG-PET uptake in the appendix should prompt operative management

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ABSTRACT

Appendiceal diverticulosis is rarely diagnosed and presentation mimics acute appendicitis. It has a documented high malignant risk and increased complication rate and excision is recommended if suspected preoperatively. We report a case of an incidental FDG avid appendiceal lesion on PET scan which was suspected to be an appendiceal neoplasm, however histologically was appendiceal diverticulosis. This is the first case of appendiceal diverticulosis detected via PET scan and we discuss the implications of this.

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Introduction:

Appendiceal diverticulosis (AD) is a rare diagnosis often identified only post-operatively with a presentation mimicking that of acute appendicitis¹. Findings of AD can be identified pre-operatively on computer tomography (CT)

and ultrasound imaging by practitioners familiar with the disease^{1, 2}. It is an important condition to identify due to high risk of associated neoplasm and increased complication rate^{3,4}. Consequently, current recommendations are for prophylactic appendectomy.

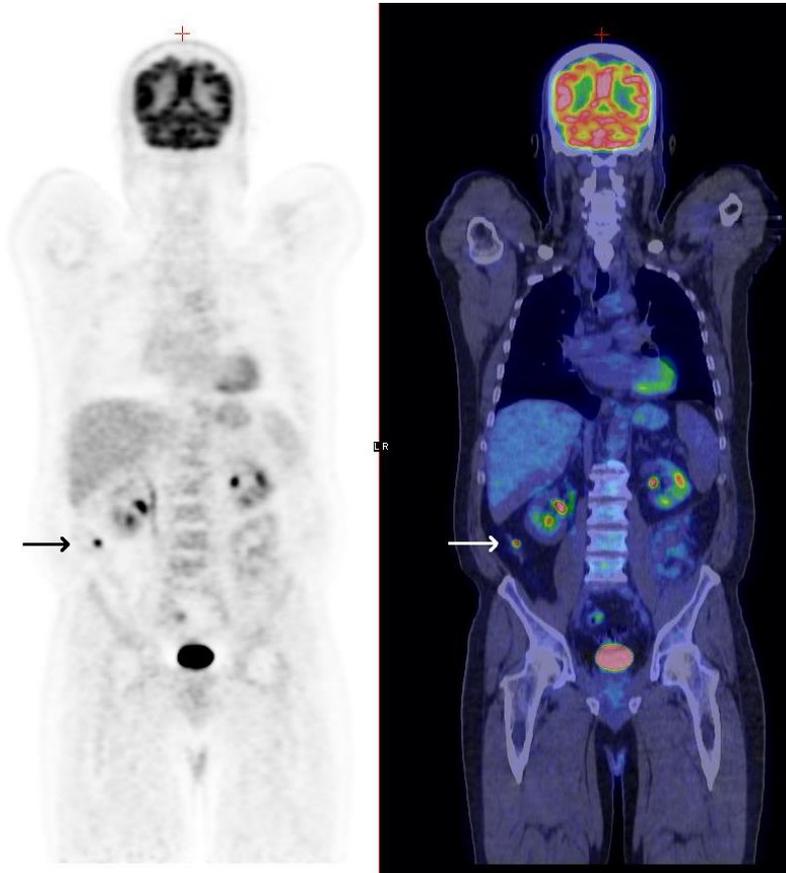


Figure 1. Coronal plane PET scan demonstrating FDG avid appendix (arrows)

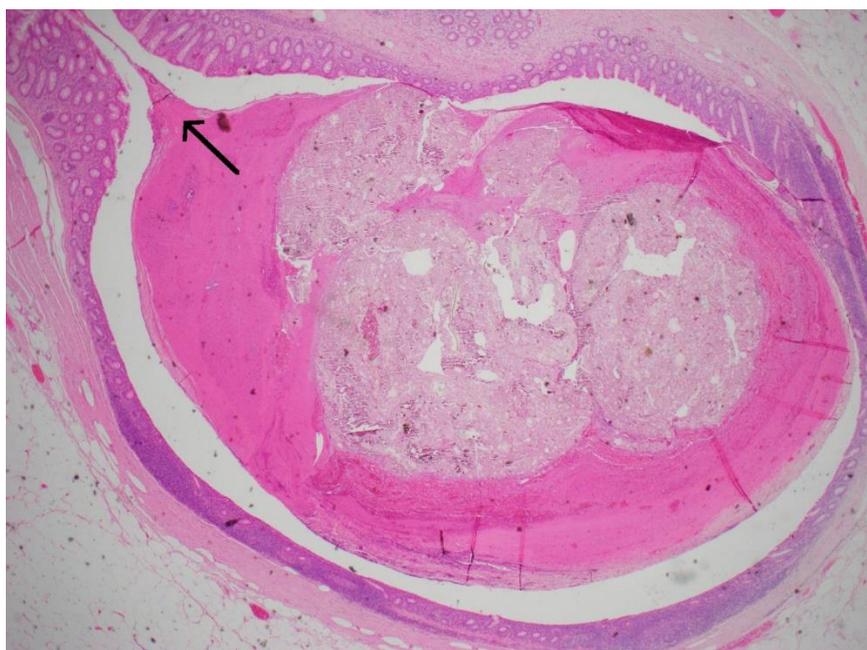


Figure 2. Appendix with diverticulum and central faecolith (arrow, diverticulum)

Case Report:

We describe a case of a 69 year old gentleman referred with an incidental finding of an FDG avid appendiceal lesion on PET (figure 1). PET was performed for workup of newly diagnosed Grade 1 Follicular Lymphoma. The patient had known diverticulosis of the right and sigmoid colon, and sigmoid tubulovillous adenoma with low grade dysplasia on recent colonoscopy. The patient was symptomatic with per rectal bleeding only. Elective appendicectomy and limited caecectomy was performed for the possibility of an appendiceal tumour. Intraoperative findings were of a widened appendiceal base and a hardened tip. Histology demonstrated multiple uncomplicated diverticular outpouchings of a dilated appendix, most distally containing a central faecolith (figure 2). There was no evidence of dysplasia or malignancy.

Discussion:

The rarity of AD is well described however reported incidence is variable within the literature, ranging from 0.004-2.1%^[4, 5]. AD can be classified into acquired versus congenital. Congenital AD is very rare, with diverticulum inclusive of all muscle layers and serosa^[4]. Most AD are acquired and pathogenesis is suggested to arise from obstruction of the lumen via inflammation, neoplasm or non-inflammatory causes such as a faecolith resulting in raised intra-luminal pressure^[5]. Herniation of the mucosa occurs through the regions of weakness in the wall such as vascular hiatus or muscle atrophy secondary to aging^[2].

To date, AD has been predominantly identified post-operatively as it is often missed on imaging due to unfamiliarity with the findings and low suspicion from practitioners^[2]. In the present case, AD was identifiable on pre-operative imaging as an FDG avid lesion on PET (figure 1). Suspicion for appendicular neoplasm was high, resulting in appendectomy and partial caecectomy. Dysplasia or malignancy, however, was not identified on histopathological examination of the specimen in this case. FDG avidity is not specific for neoplasm and while it

may have arisen from inflammation secondary to luminal obstruction from the central faecolith identified within the distal diverticulum, the patient was asymptomatic and increased metabolic activity in appendiceal diverticulosis may be a common finding on PET. The recent finding of a colonic tubulovillous adenoma maintains the link between appendiceal diverticulosis and colonic neoplasia, confirming more stringent treatment and surveillance is appropriate for these patients. Current recommendations are for elective appendectomy and thorough histopathological examination when AD is identified. Colonoscopy is advised post operatively due to higher incidence of polyps and to rule out malignancy^[6].

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