American Journal of Medical Case Reports, 2020, Vol. 8, No. 7, 187-188
Available online at http://pubs.sciepub.com/ajmcr/8/7/7
Published by Science and Education Publishing
DOI:10.12691/ajmcr-8-7-7

A Case of Invasive Mucinous Adenocarcinoma of the Appendix

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Received March 04, 2020; Revised April 08, 2020; Accepted April 17, 2020

Abstract **Background:** Although mucinous neoplasms are primarily found within the colon, there are rare instances in which these tumors arise from within the appendix. The appendix is a small blind pouch located at the beginning of the large colon. The incidence of primary appendicular mucoceles found in appendectomies is a rare occurrence, common in those over 50. These tumors often present with the symptoms of appendicitis. Of the appendiceal tumors, invasive mucinous appendicular carcinoma is rare subtype. If improperly managed, this malignancy may present with adverse tumor burden outcomes upon local invasion. **Case Presentation:** An 83-year-old male with a past medical history of GERD and hyperlipidemia presented with clinical symptoms of appendicitis. CT imaging of the abdomen was consistent with a distended appendix, also consistent with appendicitis. However, upon excision of the appendix, pathology revealed a rare occurrence of primary mucinous adenocarcinoma of the appendix. **Conclusion:** We present a case of primary mucinous adenocarcinoma of the appendix successfully managed with urgent surgical removal. Given the vague presentation of mucinous adenocarcinoma of the appendix prior to appendiceal rupture and local metastasis, this case demonstrates the importance of a surgical approach regarding appendicitis in the elderly population, rather than medical treatment.

Keywords: *mucinous adenocarcinoma, appendix*

Cite This Article: Richmond Laryea, Aazim Arif, and Aja Adams, "A Case of Invasive Mucinous Adenocarcinoma of the Appendix." *American Journal of Medical Case Reports*, vol. 8, no. 7 (2020): 187-188. doi: 10.12691/ajmcr-8-7-7.

1. Introduction

Invasive mucinous adenocarcinoma is a rare malignant subtype of appendiceal carcinomas. These tumors consist of invasive glands, containing cells of high-grade atypia, and can potentially extend outside of the appendix [1]. Appendiceal mucinous carcinoma can invade adjacent structures resulting in high-grade pseudomyxoma peritonei (PMP) [2]. High-grade PMP refers to a condition in which appendiceal mucinous tumors disseminate into the peritoneum, causing mucinous ascites [3]. Appendiceal adenocarcinomas primarily present without any symptoms until localized rupture or peritoneal spread [1]. A better prognostic outcome involving invasive mucinous adenocarcinoma of the appendix is more likely upon early detection, and proper removal.

2. Case Presentation

An 83 year-old male with a past medical history of GERD and hyperlipidemia presented to the emergency department (ED) with a chief complaint of intermittent, severe abdominal pain for the past 2 days. The patient states pain was initially mild, lasting for 5-10 minutes roughly every 4 hours, but worsened upon arrival to the ED. The patient was unable to localize the pain, but does state primarily on the right side. He also reports nausea, but no episodes of vomiting. He denies any fever, chills, vomiting or diarrhea during the past two days. He also denies pain related to eating or any types of foods. He tried to take acetaminophen for pain, but according to the patient, it did not help at all.

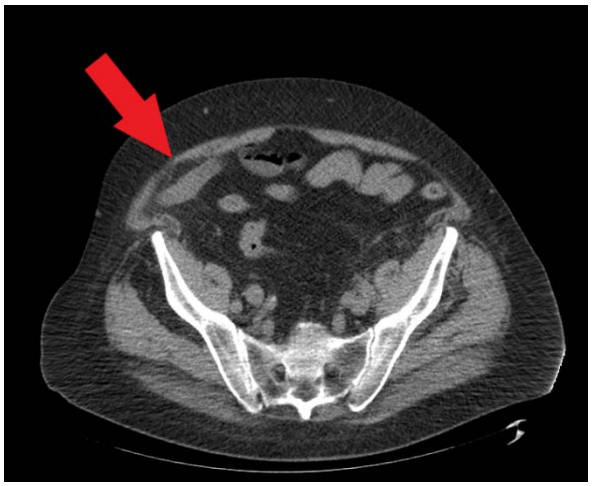

Figure 1. Cross sectiona of abdomenal computed tomography showing distended appendix

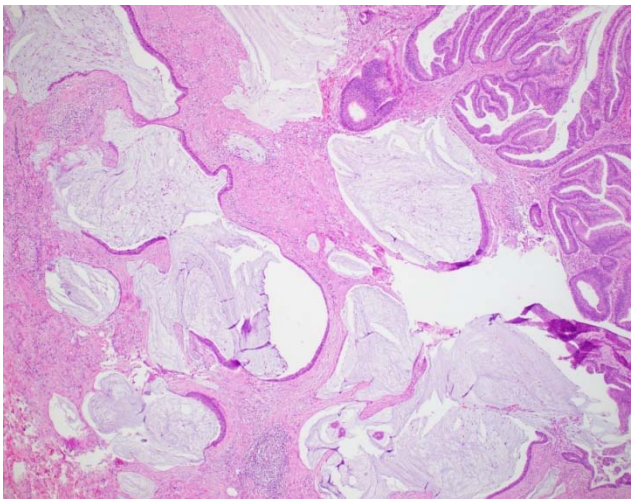

Figure 2. Pathology of appendix, showing diffuse mucinous adenocarcinoma

Physical examination was remarkable for tenderness in the right lower quadrant with positive Rosving's and McBurney's point. CT was performed, which did show a distended appendix in the right lower quadrant with peri-appendiceal stranding shown in, Figure 1. These findings are consistent with acute appendicitis. Pathology report of appendix showed invasive mucinous adenocarcinoma in the distal half of the appendix show in, Figure 2. As a result, the patient was told upon discharge to follow-up in 1 week with an oncologist as well as the surgeon in 2 weeks.

3. Discussion/Conclusion

Mucinous adenocarcinoma of appendix is a rare neoplasm, that presents in <1% of gastrointestinal neoplasms [4]. These neoplasms are typically observed in adults during the sixth or seventh decades of life, women are also affected four times more than men are [4]. Appendiceal mucinous carcinomas originate from pre-existing adenomas; and are associated with genetic defects and lifestyle factors [5]. The carcinoma may also be associated in patients with colonic polyps [5].

Mucinous adenocarcinoma of appendix commonly goes unnoticed, until diagnosed under a microscope by a pathologist after removal of the appendix [6]. Patients typically have an asymptomatic presentation; however, appendiceal mucinous adenocarcinoma is an indolent disease with potential to progress to PMP [2,7]. Once the progression of mucinous adenocarcinoma has progressed to PMP, patients usually require extensive surgical and chemotherapy interventions [8]. The literature shows the impact of PMP can vary, including gastrointestinal compromise due to obstruction. Death is often imminent unless radically treated [8].

Current literature leans towards treatment of mucinous adenocarcinoma of the appendix as surgical excision, including the base of the appendix and the mesoappendix [9]. Prompt removal during early stages allows generally good prognosis of mucinous adenocarcinoma of appendix and limits the need for repeat surgery or chemotherapy [10,11].

Given the esoteric presentation of mucinous adenocarcinoma of the appendix, and high incidence in those over 50, this case highlights caution in medically treating appendicitis rather than routine removal in this group. This case also highlights the potential benefit of routine removal of the mesoppendix, and base of the appendix during appendectomies for appendicitis in adults over 50. Lastly, this case displays how mucinous adenocarcinoma of the appendix may present as appendicitis on imaging, warranting further precautions during routine appendectomies in this age group.

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