Are There Any Identifiable Radiological Features to Distinguish Appendiceal Neuroendocrine Neoplasms from Acute Appendicitis Cases?

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INTRODUCTION

Appendiceal neuroendocrine neoplasms (ANEN) are found in 0.26% - 1.45% in appendectomy specimens, they account for roughly 50% of all primary tumors of the appendix and are among the most common gastrointestinal neuroendocrine neoplasms. In about 54% of cases the clinical presentation of these tumors is acute appendicitis.
In recent years the conservative management of acute appendicitis is becoming increasingly popular and can result in missing the diagnosis at an early and curable stage.

OBJECTIVES

To identify radiological features of appendiceal neuroendocrine neoplasms that will distinguish them from "regular" cases of acute appendicitis.

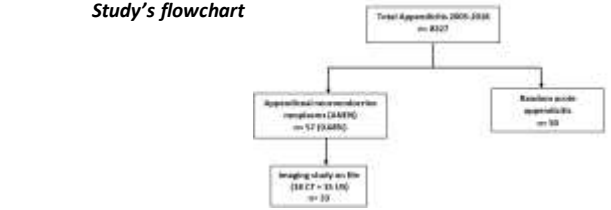
METHOD

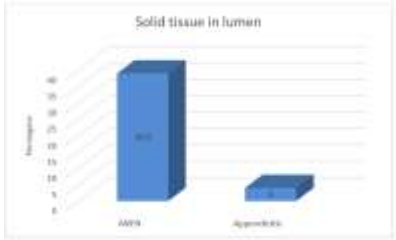
A retrospective study, utilizing a data base containing pathology reports from 8327 appendectomies performed in our hospital between 2005 and 2018. Imaging studies were reviewed by a single senior radiologist (without knowing which cases were ANEN and which were controls) and assessed for different radiographic features of ANEN.

RESULTS

A total of 57 ANEN cases were diagnosed, of which 33 cases had an imaging study on file (18 CT + 15 US), 50 random acute appendicitis cases were selected as controls. There were no significant differences between the ANEN and the control groups in terms of appendiceal diameter, number or size of regional lymph nodes. The only reliable and identifiable feature of ANEN in this study was the presence of solid tissue in the lumen of the appendix, noted in 7 out of 18 cases of ANEN in which a CT was done (38.9%) versus 2 out of 50 acute appendicitis controls.

Study's flowchart





Presence of solid tissue in the lumen of the appendix

No solid tissue in the lumen of the appendix

CONCLUSIONS

Conservative management of acute appendicitis may result in missed diagnosis of appendiceal neuroendocrine neoplasms of the appendix presenting as acute appendicitis. The presence of solid tissue in the lumen of the appendix should be considered a contraindication to conservative management