

A case of duodenal diverticulum misdiagnosed as a pancreatic cystic neoplasm

Ahmet Aslan(*), Ismet Gulmez(*), Emrah Duman(*), Aysenur Buz(*), Nesrin Gunduz(*)

SUMMARY

A duodenal diverticulum results from prolapse of mucosa or the entire duodenal wall. The correct diagnosis may be challenging because duodenal diverticulum can mimic pancreatic neoplasms. In this case report, we aimed to share our experience about a recent misdiagnosed duodenal diverticulum case and highlight the importance of precise diagnosis of duodenal diverticula.

Key words: Duodenum, diverticulum, radiology, magnetic resonance imaging, computed tomography.

Introduction

A duodenal diverticulum results from prolapse of mucosa or the entire duodenal wall and duodenum is the second most common place for the formation of diverticula within the gastrointestinal tract following the colon (1). To establish the correct diagnosis may be challenging because duodenal diverticulum is usually asymptomatic and radiographic features can mimic pancreatic neoplasms (2,3). Herein we present a case of duodenal diverticula mimicking cystic pancreas neoplasm (CPN) in the light of current literature.

Case report

A 74-year-old female patient was admitted to emergency department with epigastric pain. The patient had epigastric pain for one year. Physical examination revealed tenderness in epigastrium. Her complete blood count (CBC) and biochemical parameters were all within normal ranges. Abdominal sonography was performed to exclude the intraabdominal pathologies but sonographic findings were normal. Then intravenous contrast-enhanced abdominal computed tomography (CT) was performed and reported as normal findings. After that, the patient was discharged with dietary recommendations and pain killers. After five months the patient admitted to emergency department with the same symptoms. Her CBC and serum AST, ALT, CRP, GGT levels were normal. Therefore, to explain the epigastric pain and exclude pancreatic diseases, magnetic resonance imaging (MRI) was ordered and MRI displayed a 12 mm cystic lesion located at the head of the pancreas (Figure 1a,b). The lesion was misinterpreted as an intraductal papillary mucinous neoplasm (IPMN). Patient was scheduled for follow-up imaging. One year later, on control MRI, lesion size and shape were different from the previous MRI (Figure 1c). Patients former CT and MRIs were reviewed retrospectively. On CT, the cystic lesion had air inside and a close relation with the duodenum (Figure 1d). The patient was diagnosed as duodenal diverticulum, which was confirmed by upper gastrointestinal system endoscopy consequently. The patient was treated with proton pump inhibitors and scheduled for follow-up.

Discussion

Duodenal diverticulum may be misinterpreted as a CPN. Imaging features of duodenal diverticulum should be known to prevent unnecessary surgery. Radiologic features such as variation in size and internal content on follow-up CT or MRI should suggest and raise the possibility of the duodenal diverticulum. On CT and MRI, the presence of air, air fluid level or contrast residue in the lesion are characteristics (4). On MRI, the size and signal intensity may alter even several sequences of the same examination. Demonstrating the continuity of the

* Istanbul Medeniyet University, Goztepe Training and Research Hospital, Radiology, Istanbul, Turkey

Corresponding Author: Ahmet Aslan
Istanbul Medeniyet University, Goztepe Training and Research Hospital, Radiology, Istanbul, Turkey
E-mail: aslahmet@gmail.com

Date submitted: Dec 03, 2017 • Date accepted: Dec 08, 2017 • Online publication date: December 15, 2017

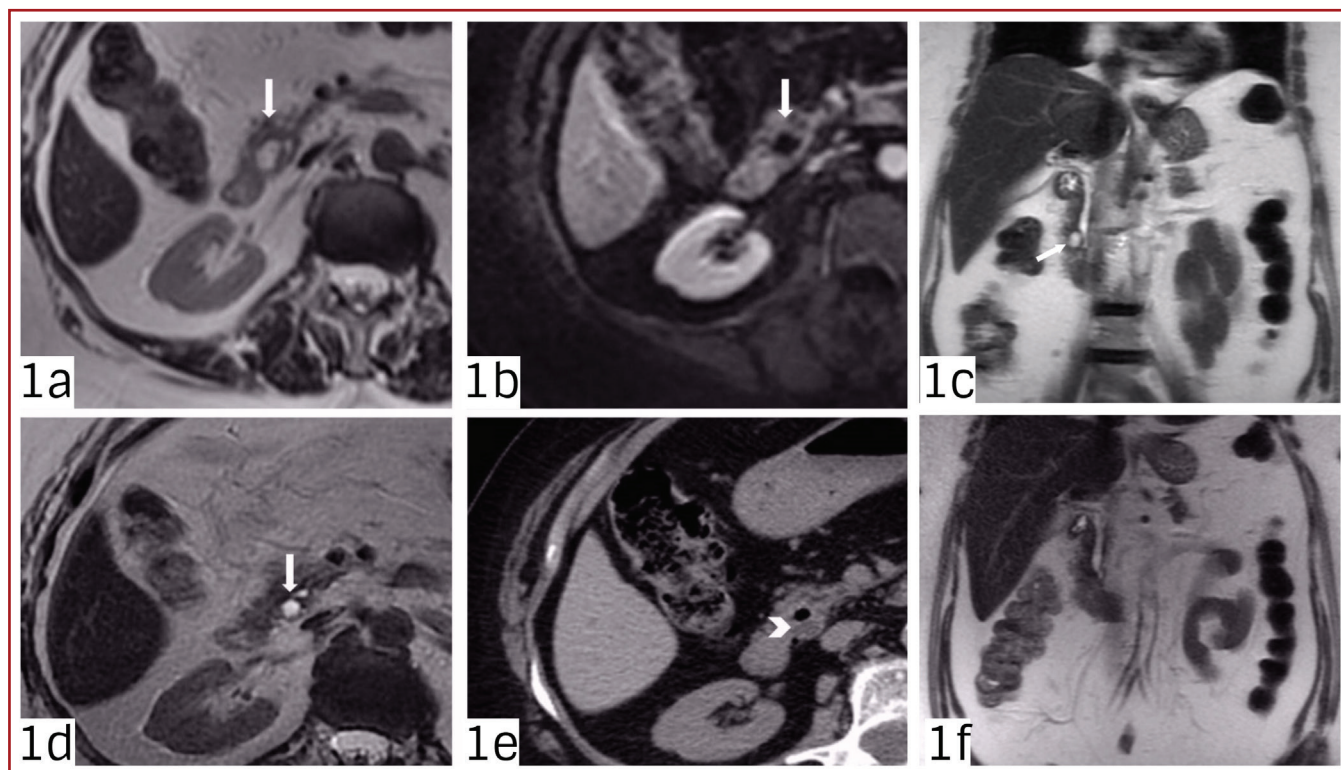


Figure 1a-f: Axial T2-weighted MR image shows a duodenal diverticulum mimicking a pancreatic cystic lesion at the level of pancreatic head (Figure 1a) and on axial enhanced T1-weighted MR image lesion does not enhance with contrast medium (Figure 1b). At follow-up imaging, after one year, change in size and shape of the lesion is seen on axial T2-weighted MRI (Figure 1d). On axial contrast-enhanced CT image, air-fluid level is seen within the lesion (Figure 1e). Coronal T2-weighted MR images demonstrates duodenal diverticulum localized adjacent distal choledocus (1c). One year later, duodenal diverticulum could not be demonstrated on coronal images due to decreased size of the diverticulum and thick slices of MRI.

lesion with duodenal wall on consecutive thin-sectioned CT and MRI can be helpful to distinguish it from a CPN, premalignant cystic pancreatic lesions like pancreatic intraepithelial neoplasia (PanIN) and rare benign pancreatic lesions called acinar cell cystadenoma (ACC) (5). For further investigation, endoscopy and endoscopic ultrasonography reveals detailed information about lesion characteristics and relation with adjacent structures (3). In our case, the lesion was mistakenly regarded as an IPMN for a long time. However, endoscopic assessment of upper gastrointestinal tract should have been considered as modality of choice in this conditions. To avoid misdiagnosis, it's vital to use oral contrast media or hepatobiliary specific MR contrast agents during the assessment of duodenal and pancreatic cystic lesions with CT or MRI (6). Imaging of duodenal diverticula via endoscopic retrograde cholangiopancreatography (ERCP) and percutaneous transhepatic cholangiography is challenging and increased complication risk such as perforation was reported previously. Due to risk of biliary duct blockage, duodenal diverticula also have major clinical importance (7). Systematic approach is essential while managing radiological and clinical discordant patients. We interpreted the previous examinations retrospectively and achieved accurate diagnose eventually.

Conclusion

In cystic lesions, adjacent to the duodenum and pancreatic head, duodenal diverticulum should be considered in the differential diagnosis. Proper imaging modalities should be chosen gradually. Radiological assessment of current and previous images of the patients with elaborated anamneses will contribute to the definitive diagnosis.

References

1. Bittle MM, Gunn ML, Gross JA, Rohrmann CA. Imaging of duodenal diverticula and their complications. *Curr Probl Diagn Radiol* 2012; 41(1):20-9.
2. Ng CH, Lee CH. Periapillary diverticula misdiagnosed as cystic pancreatic lesions: A review of 3 cases. *Am J Case Rep* 2016; 7;17:224-30.
3. Mallappa S, Jiao LR. Juxtapapillary duodenal diverticulum masquerading as a cystic pancreatic neoplasm. *JRSM Short Rep* 2011; 2(11):89.
4. Macari M, Lazarus D, Israel G, Megibow A. Duodenal diverticula mimicking cystic neoplasms of the pancreas: CT and MR imaging findings in seven patients. *AJR Am J Roentgenol* 2003; 180(1):195-9.
5. Gumus M, Ugras S, Algin O, Gundugdu H. Acinar Cell Cystadenoma (Acinar Cystic Transformation) of the Pancreas: the Radiologic-Pathologic Features. *Korean J Radiol* 2011;12(1):129-134
6. Algin O, Ozmen E, Ersoy P E, Karaoglanoglu M. Periapillary localized pancreatic intraepithelial neoplasia-3 (PanIN-3): evaluation with contrast-enhanced MR cholangiography (MRCP). *Radiol Oncol* 2011; 45(4): 300-303.
7. Altonbary A Y, Bahgat M H, Endoscopic retrograde cholangiopancreatography in periampullary diverticulum: The challenge of cannulation *World J Gastrointest Endosc* 2016 March 25; 8(6): 282-287