

Duodenal Papillitis in an Elderly Male: A Case Report Highlighting Diagnostic Challenges and Radiological Findings

Dr. Aneeqa Qureshi¹, Dr. Dawar¹, Dr. Anam Hafeez², Husnain Abbas³, Huzafa Ali³, Umar Faizan^{3*}, Ehtesham Zahoor⁴

¹Aga Khan University and Hospital, National Stadium Rd, Aga Khan University Hospital, Karachi, Karachi City, Sindh 74800, Pakistan

²Patel Hospital, ST-18, Block 4 Gulshan-e-Iqbal, Karachi, Karachi City, Sindh 75300, Pakistan

³CMH Multan, 5CVQ+526 Ghaus ul Azam Road near Naseem Hayat Rd, Pia Colony, Multan, Punjab 60000, Pakistan

⁴Internal Medicine Resident at Baptist Health-UAMS, Pakistan

*Corresponding Author: Umar Faizan

CMH Multan, 5CVQ+526 Ghaus ul Azam Road near Naseem Hayat Rd, Pia Colony, Multan, Punjab 60000, Pakistan

Article History: | Received: 02.12.2024 | Accepted: 04.01.2025 | Published: 08.01.2025 |

Abstract: A rare inflammatory disease of the major duodenal papilla, duodenal papillitis is frequently linked to pancreatitis, infections, stones, or other biliary obstructions. This case study focuses on a 62-year-old male with a history of cholelithiasis and benign prostatic hyperplasia who presented with pain in the epigastrium. Radiological imaging revealed an enlarged and oedematous duodenal papilla, which suggested biliary obstruction and duodenal papillitis. The patient was started on intravenous antibiotics and analgesics, following which endoscopic stenting was performed, and the clinical outcome was promising. Due to its overlap with other illnesses, such as cancer of the papilla of Vater, duodenal papillitis can be difficult to diagnose. However, early discovery and suitable imaging are crucial for successful treatment. To differentiate this illness from other potential diseases, imaging methods such as Computerized Tomography scan (CT scan) and MRCP must be used correctly. This case highlights the potential for non-invasive treatments to improve patient outcomes while reducing the need for surgery. It also underscores the importance of combining multiple imaging techniques in diagnosing rare gastrointestinal disorders, which can lead to more accurate and timely management.

Keywords: Duodenal Papillitis, Major Duodenal Papilla, Biliary Obstruction, Endoscopic Retrograde Cholangiopancreatography (ERCP), Magnetic Resonance Cholangiopancreatography (MRCP), Common Bile Duct (CBD), Computed Tomography (CT), Inflammation Biliary Dilatation, Endoscopic Stenting.

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INTRODUCTION

Duodenal papillitis is a relatively rare condition characterized by inflammation of the major duodenal papilla (Papilla of Vater), which is the point where the dilated junction of the bile and pancreatic ducts enter the duodenum [1]. The obstruction of the ampullary region is due to papillary enlargement, which can arise in the setting of papillitis, periampullary and ampullary cancer, pancreatitis, and choledochocoele [2]. In the literature, these cases are most often seen in cattle [3] and, when reported in humans, is mostly due to parasitic infection [4] or viral in origin [5], which adds a unique dimension to our case as we are reporting in a 62-year-old male with no known parasitic or viral infectious etiology. Duodenal

papillitis is an inflammation that can present due to infection, parasites, recently passed stone, choledocholithiasis, impacted ampullary stone, periampullary diverticulum and can occur in conjunction with acute cholangitis, acute pancreatitis, or acute exacerbation of chronic pancreatitis. It is mainly diagnosed by Computerized Tomography (CT) scan, and Endoscopic Retrograde Cholangiopancreatography (ERCP) plays a role in treating and diagnosing this case. This case report describes the clinical presentation, imaging findings, and management of a patient with duodenal papillitis. The report highlights the importance of radiological imaging in diagnosing and assessing the severity of this condition.

Citation: Aneeqa Qureshi, Dawar, Anam Hafeez, Husnain Abbas, Huzafa Ali, Umar Faizan, Ehtesham Zahoor (2025). Duodenal Papillitis in an Elderly Male: A Case Report Highlighting Diagnostic Challenges and Radiological Findings; *SAR J Med Case Rep*, 6(1), 1-6.

CASE PRESENTATION

A 62-year-old male came in with the presenting complaint of epigastric pain for one month. The patient was already diagnosed with biliary colic, bladder outlet obstruction due to benign prostatic enlargement and cholelithiasis, and had undergone Laparoscopic Cholecystectomy and Transurethral Resection of the prostate. An elderly male patient presented with a clinical picture of being conscious, alert, and oriented to time, place, and person. On examination, there was no

apparent pallor, jaundice, edema, cyanosis, or clubbing. His vitals on admission were as follows: pulse rate of 100 beats per minute, blood pressure of 131/80 mmHg, respiratory rate of 17 breaths per minute, and a temperature of 36.5°C. Systemic examination revealed a soft, non-tender abdomen with an old scar, no visceromegaly, and audible gut sounds. The cardiovascular system examination was unremarkable, the central nervous system was grossly intact, and the respiratory examination showed normal vesicular breathing. The lab findings have been shown in Table 1.

Table 1:

Test	Result	Normal Range
Total Billirubin	2.7 mg/dL	0.1 - 1.2 mg/dL
Direct Billirubin	1.9 mg/dL	0 - 0.2 mg/dL
Indirect Billirubin	0.8 mg/dL	0.1 - 0.8 mg/dL
Gamma-glutamyl transferase (GGT)	743 U/L	5-40 U/L
Glutamic-Pyruvic/ Alanine Transaminase (SGPT/ALT)	64 U/L	7-56 U/L
Alkaline Phosphatase (ALP)	750 U/L	45 - 129 U/L
Glutamic-Oxaloacetic/Aspartate Transaminase (SGOT/AST)	129 U/L	5-40 U/L

The patient underwent a contrast-enhanced CT scan of the abdomen (Figure 1) to assess the biliary tree further. The scan revealed interval non-visualization of the gallbladder with cholecystectomy clips in the gallbladder fossa. Moderate dilatation of the common bile duct (CBD) till its lower end with no intraluminal stones on the basis and minimal central intrahepatic prominence. The duodenal papilla was enlarged and edematous. It showed target appearance with

submucosal edema and mild enhancement, protruding into the distal lumen of the common bile duct. Findings were suggestive of duodenal papillitis. Magnetic Resonance Cholangiopancreatography (MRCP) confirmed the dilatation of the CBD and revealed smooth tapering at the distal end of the CBD, near the major duodenal papilla, findings are consistent with duodenal papillitis, and no stone noted on MRCP examination (Figure 2).



Figure 1: CT abdomen with contrast demonstrates enlarged edematous duodenal papilla, giving target appearance on axial images

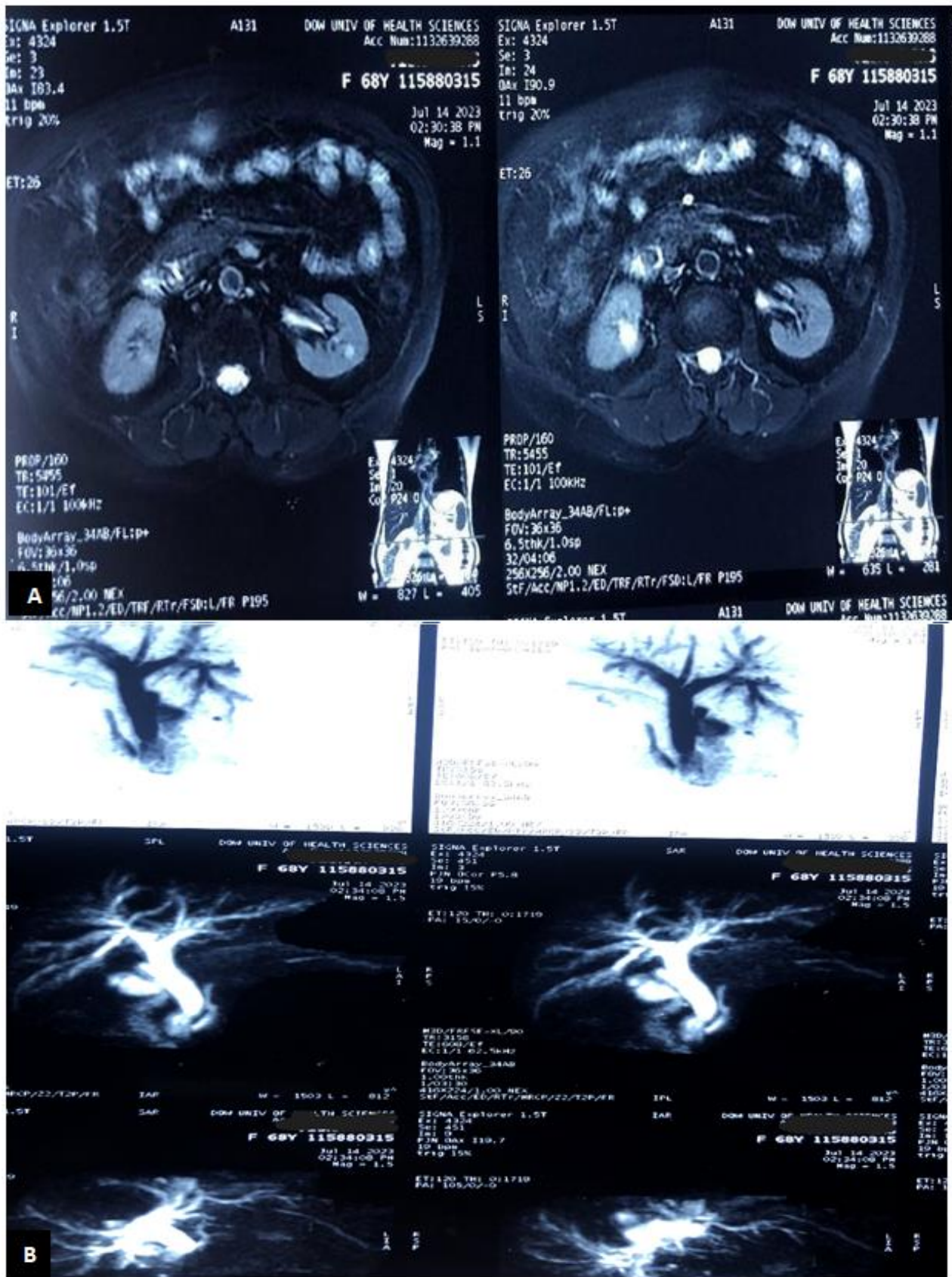


Figure 2: MRCP of the patient revealed biliary dilatation and thickening of the duodenal ampulla with smooth distal tapering

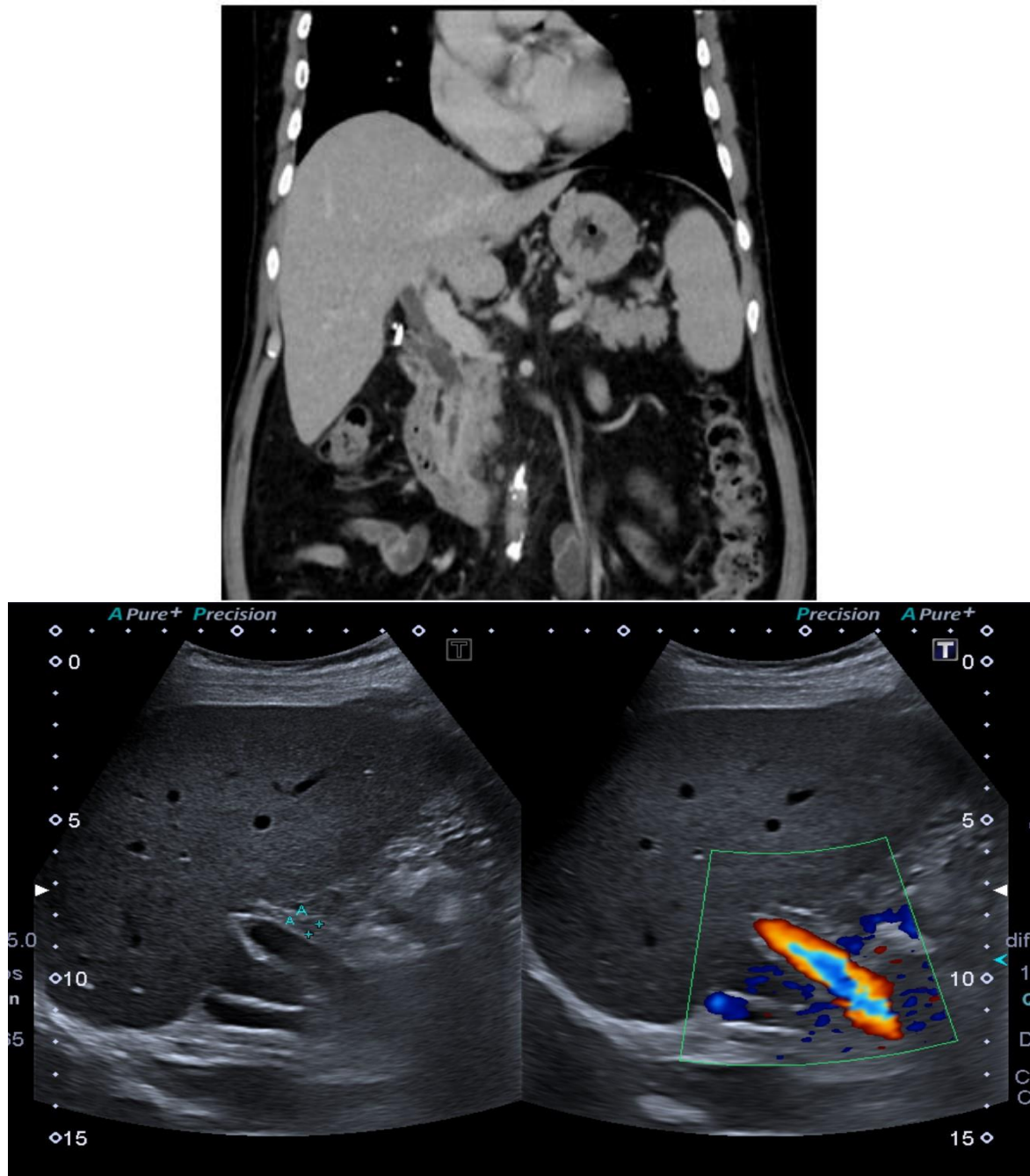


Figure 3: Post treatment patients ultrasound abdomen was performed which was normal. Normal CBD & intrahepatic ducts

Based on the clinical presentation and radiological findings, the patient was diagnosed with duodenal papillitis. The inflammation of the major duodenal papilla was likely obstructing the CBD, leading to jaundice and cholestasis. The patient was managed conservatively with Intravenous (IV) antibiotics, analgesics, and temporary endoscopic stent placement to relieve the biliary obstruction. He responded well to the treatment, and his symptoms gradually improved. A follow-up abdomen ultrasound showed normal CBD and intrahepatic ducts. The patient was discharged with instructions for close monitoring and follow-up.

DISCUSSION

Duodenal papillitis is an inflammatory condition affecting the mucosa covering the major duodenal papilla. Inflammation can be caused by recently passed stones, parasites, acute pancreatitis, or acute exacerbation of chronic pancreatitis [6]. It can also be caused by Cytomegalovirus (CMV) infection after a solid organ transplant, especially in the gastrointestinal tract [7]. Early recognition and prompt intervention can lead to successful management of this condition and improve the patient's overall prognosis. Usually, the inflamed papillae exhibit mural stratification of target-like enhancement, symmetric thickness (> 5-10 mm),

and uniform enhancement. This discovery aids in the differentiation of hypovascular malignant situations on CT from benign papillomastia [6]. Duodenal papillitis can cause bulging of the duodenal papilla, which can be observed on a CT. Duodenal papillitis can also mimic carcinoma of the papilla of the Vater due to a similar presentation of dilated biliary and pancreatic ducts that can be confirmed through pathology showing accessory gland, periductal gland, and smooth muscle hyperplasia [8].

Endoscopically evident papillitis is associated with elevated serum transaminase levels [9], as shown in the table. Radiological findings of duodenal papillitis may not always be specific, but certain features can be observed in imaging studies. Patients with upper abdomen pain and jaundice are frequently screened using ultrasound (US) as the initial modality. It is inexpensive, readily accessible, and radiation-free. A hypoechoic mass in the periampullary area, as well as intra and extrahepatic biliary and pancreatic ductal dilatation, can be observed on grayscale ultrasound [10]. Ultrasound can show dilation of the CBD and pancreatic duct due to obstruction caused by inflammation or edema around the papilla. Still, the post-treatment ultrasound performed on our patient showed normal CBD and intrahepatic ducts, as shown in Figure 3. Figure 1 shows how duodenal papillitis is confirmed through a CT scan that may reveal thickening and bulging of the ampulla, giving a target appearance with associated adjacent fluid and stranding, indicating inflammation and other biliary/pancreatic.

Like ERCP, MRCP is a non-invasive diagnostic imaging technique used to assess the pancreaticobiliary tract in patients with a range of biliary and pancreatic tract conditions [11]. It also plays a significant role in diagnosing duodenal papillitis. It normally shows mild dilatation of CBD (1cm) and central intrahepatic biliary ducts, with smoothly tapered distal third CBD and enlarged papilla showing submucosal edema without a distal stone or any other obstacle. Figure 2 of the patient shows the same findings that concluded duodenal papillitis. Although ERCP is primarily a therapeutic procedure, it can also provide diagnostic information by directly visualizing the papilla and detecting inflammation, edema, or other abnormalities [12], allowing for direct intervention such as sphincterotomy or stent placement to relieve obstruction.

Diagnosing duodenal papillitis was particularly challenging in this case due to the absence of typical infectious etiologies and underlying biliary conditions. This underscores the necessity for a high index of suspicion and comprehensive imaging to differentiate duodenal papillitis from other causes of biliary obstruction. The radiological findings, including the target appearance of the edematous papilla on CT and the smooth tapering of the common bile duct on MRCP, were pivotal in confirming the diagnosis. This highlights the importance of multimodal imaging approaches in

assessing biliary and pancreatic pathologies, particularly in atypical presentations. Furthermore, our case illustrates the potential for successful conservative management strategies, including endoscopic stenting, in mitigating symptoms and resolving the inflammatory process without invasive surgery. Such approaches can significantly improve patient outcomes while minimizing the risks of more invasive procedures.

CONCLUSION

Differentiating duodenal papillitis from other biliary obstructions and cancers requires a high degree of suspicion and thorough imaging. Accurate evaluation and diagnosis depend on multimodal imaging, such as CT, MRCP and endoscopy. This case reveals how endoscopic stenting and other alternative therapies can effectively reduce inflammation and discomfort, minimize the demand for invasive surgery and improve patient outcomes

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