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# Endoscopic Treatment of Cystic Duodenal Duplication

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**Keywords:** Abdominal pain; Duodenal duplication; Endoscopic marsupialization.

## Abstract

Duodenal duplication cyst is a rare congenital entity. The treatment has classically involved surgical resection. We report the case of a 61 year old women who presented with upper abdominal pain and vomiting related to a cystic duodenal duplication. She was treated with endoscopic marsupialization in the cyst roof. The patient remained asymptomatic during 4 years follow-up. The endoscopic treatment of duodenal duplication cyst was a safe and effective technique, with excellent long-term results.

## Introduction

Duodenal duplication are a rare congenital anomalies, representing 2%-12% of gastrointestinal tract duplications [1]. They can be cystic or tubular, and they may communicate with the duodenal lumen, the pancreatic duct, or rarely the biliary system [2]. Most Duodenal Duplication Cysts (DDC) are detected in children and fewer than 30% of them are diagnosed in adults [3].

Treatment has classically involved total surgical resection, which can be complex because of the close proximity of the cysts to the papilla and the bilio-pancreatic confluence. Endoscopic therapy has been used as an alternative to surgery in a few selected cases [4].

We report the case of 61-year old women with a symptomatic DDC treated endoscopically.

## Patient and observation

A 61−year−old woman was admitted to our department because of a several years history of intermittent non radiating upper abdominal pain. She reported a recent exacerbation of the symptoms, associated with nausea and vomiting. Physical examination revealed no abnormalities.

Laboratory data including hematology, blood chemistry, were within the reference limits.

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The upper endoscopy showed a depressible submucosal bulge in the first part of duodenum (Figure 1). It was located 2 cm of the major papilla

The Abdominal computed tomography revealed a 5,5 cm bilobated cystic mass that protruded inside the first and second duodenum lumen (Figure 2). The biliary tract and the pancreatic duct were normal without any communication with the cystic mass. The diagnosis of Duodenal Duplication Cyst (DDC) was assumed. An endoscopic management was proposed to the patient, consisting on an endoscopic marsupialization of the cyst roof.

The procedure was performed with standard, adult, side-viewing duod enoscope.

An incision was made with a needle–knife papillotome on the cyst. Then, we opened a large portion of the luminal cyst wall with a standard sphincterotome. The incision was extended until an opening of 1.5 cm was obtained (Figure 3). The histologic examination of biopsy, taken from the open cyst cavity, confirmed normal-appearing duodenal mucosa.

Eight weeks after the procedure, A second upper endoscopy showed a duplication cavity totally collapsed.

Our patient remained asymptomatic during a 4-year follow-up with an annual endoscopic control. The biopsy of the cavity mucosa were performed et showed normal duodenal mucosa.

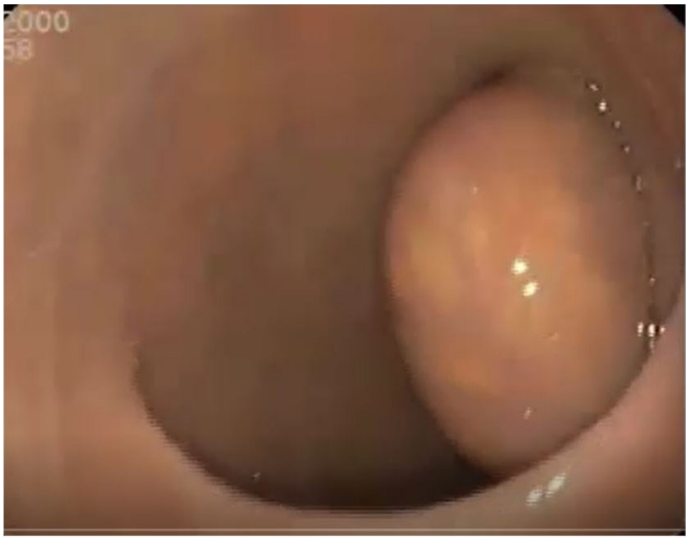

**Figure 1:** intra luminal duodenal cystic lesion

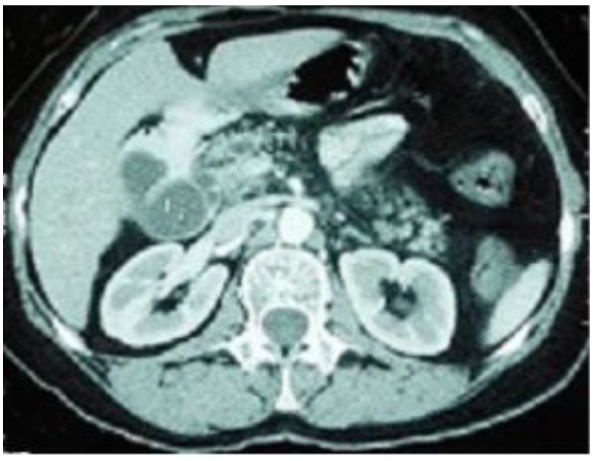

**Figure 2:** Computed tomography image of a cystic lesion in the first duodenum with a “double-layered wall.

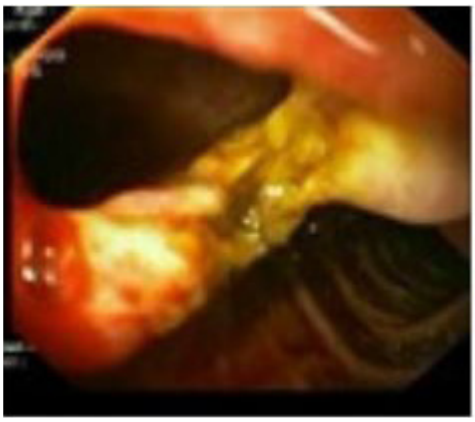

**Figure 3:** A large marsupialization in the cystic roof.

## Discussion

DDC is a rare congenital entity .It is mostly occurring in the first and second parts of the duodenum and rarely in the third and fourth parts [5]. The DDC presents a well-developed smooth muscle coat and share a common wall with the native duodenum. Luminal communication was occurred in 25% of cases [6].

The most commonly presenting symptoms are non specific abdominal pain, nausea and vomiting. Rarely, symptoms included gastrointestinal hemorrhage, intussusception, obstruction, jaundice, and pancreatitis [1,7].

The diagnosis of DDC was generally suspected on characteristic radiologic imaging findings: “double-layered wall” consisting on an outer hypoechoic muscular layer and an inner echogenic mucosal layer [4]. The main differential diagnoses include: Choledochoceles, cystic tumors of the pancreas and mesenteric cysts [1].

Histological features of DDC may showed ectopic pancreatic and gastric mucosa predisposing to ulceration, bleeding, and perforation [6]. Few cases of malignant transformation have been reported in the literature [8,9].

The duodenal duplication cyst treatment has classically involved complete surgical resection which can be associated with a high morbidity.

A complete surgical resection of duodenal cyst may require pancreatico- duodenectomy if the cyst is located near the biliary-pancreatic duct. Therefore, less-invasive approaches have been proposed like trans duodenal marsupialization and partial resection and internal derivation [10].

Recently, an endoscopic management was proposed as an alternative to surgery. Usually, the endoscopic procedure was consisting on a marsupialization of the cyst roof, performed with a standard duodenoscope.

Several techniques have been used: Resection of the cyst roof by using a standard poly pectomy snare/papilotome snare or a large marsupialization in the roof using needle knife sphincterotomy [4,10].

The endoscopic treatment of symptomatic intraluminal duodenal duplication showed a high efficacity [4,10]. The most frequent complication was bleeding, usually minimal and treated endoscopically But, the main disadvantage of endoscopic man-

agement of DDC, still the partial resection of the cystc with a persistent risk of malignant transformation.

## Conclusion

The endoscopic approach to DDC provides a minimal invasive alternative to the traditional trans duodenal access with an excellent long-term outcome. It should be considered in all patients with regular follow up.

### Authors' contributions

- Substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data: Mouna Medhioub, Mahdi Bouassida, Amal khsiba, Moufida Mahmoudi, Asma Ben Mohamed, Khaled Bouzaidi, Lamine. Hamzaoui , Mohamed Moussadek Azouz.
- Drafting the article or revising it critically for important intellectual content: Mouna Medhioub
- Final approval of the version to be published: Mohamed Moussadek Azouz

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