

## Juxtapapillary duodenal diverticular bezoar as an exceptional cause of biliary stent obstruction. Case report

G. GERACI, C. SCIUMÈ, F. PISELLO, T. FACELLA, E. ARNONE, G. MODICA

**SUMMARY:** Juxtapapillary duodenal diverticular bezoar as an exceptional cause of biliary stent obstruction. Case report.

G. GERACI, C. SCIUMÈ, F. PISELLO, T. FACELLA, E. ARNONE, G. MODICA

*Introduction: we describe the first case in literature of biliary stent obstruction by bezoar impaction in a juxtapapillary duodenal diverticulum.*

*Case report: this case illustrates an juxtapapillary duodenal diverticulum and bezoar in it causing obstructive jaundice in subject with two biliary stents for cholangiocarcinoma (Klatskin's tumor) in the absence of bile duct stones.*

*Result: successful treatment with endoscopic stent removal and diverticulum toilette. Obstructive jaundice was cured after endoscopic removal of the bezoar and stent substitution.*

*Discussion: the presence of a bezoar and its possible contribution to the pathogenesis of pancreatitis in the presence of periampullary extraluminal duodenal diverticula makes endoscopic intervention for removal of the bezoar necessary and effective.*

*Conclusions: biliary bezoar is a very rare but treatable cause of stents obstruction in patients with juxtapapillary duodenal diverticula. Endoscopic retrograde cholangiopancreatography is helpful in making diagnosis and for resolutive treatment.*

**RIASSUNTO:** Bezoario intradiverticolare iuxtapapillare: causa eccezionale di ostruzione di endoprotesi biliare. Case report.

G. GERACI, C. SCIUMÈ, F. PISELLO, T. FACELLA, E. ARNONE, G. MODICA

*Introduzione: descriviamo il primo caso in letteratura di ostruzione protesica da bezoario impattato in un diverticolo duodenale iuxtapapillare.*

*Caso clinico: ittero ostruttivo da ostruzione protesica biliare per bezoario impattato in un diverticolo duodenale iuxtapapillare in un paziente di 72 anni affetto da tumore di Klatskin.*

*Risultati: il paziente è stato trattato con successo mediante rimozione endoscopica dello stent, toilette del diverticolo e sostituzione protesica.*

*Discussione: la presenza di bezoario può essere causa di pancreatite da ostruzione in presenza di diverticoli duodenali. In tali casi il trattamento endoscopico può essere risolutivo con bassi tassi di mortalità e morbilità.*

*Conclusioni: il bezoario biliare va considerato tra le cause rare di ostruzione di protesi biliare in soggetti con diverticoli duodenali iuxtapapillari. La colangiopancreatografia retrograda per via endoscopica è in tali casi fondamentale per la diagnosi differenziale e il trattamento.*

**KEY WORDS:** Biliary bezoar - Biliary stent obstruction - Juxtapapillary duodenal diverticula.  
Bezoario biliare - Ostruzione protesi biliare - Diverticoli duodenali iuxtapapillari.

### Introduction

Food impaction in duodenal diverticula is frequent, but it is rare (never reported in literature) the obstruction of biliary stents inserted for Klatskin's tu-

mor by a juxtapapillary duodenal diverticulum (JDD) filled with a food bezoar.

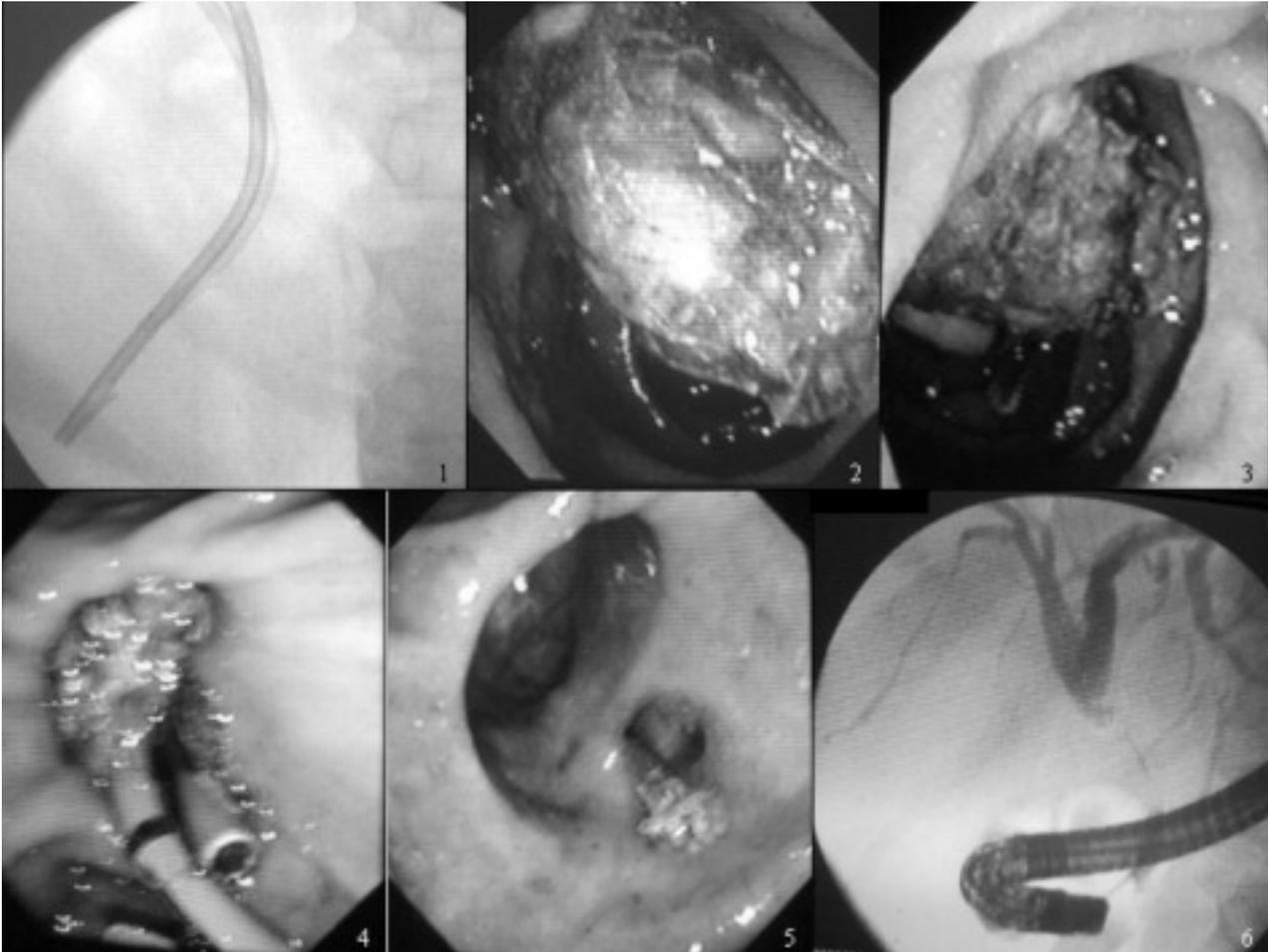
We describe the first case of stent obstruction by bezoar impaction in a juxtapapillary duodenal diverticulum, probably as a result of habitual ingestion of large amounts of vegetables.

### Case report

A 72-year-old man affected by Klatskin's tumor, stented after endoscopic retrograde cholangiopancreatography (ERCP) and endoscopic sphincterotomy 1 month ago, presented with fever,

Università degli Studi di Palermo  
Azienda Ospedaliero Universitaria Policlinico "Paolo Giaccone"  
Dipartimento di Chirurgia Generale, d'Urgenza e dei Trapianti d'Organo  
Unità Operativa di Chirurgia Generale ad Indirizzo Toracico  
(Direttore: Prof. G. Modica)

© Copyright 2007, CIC Edizioni Internazionali, Roma



**Figs. 1-6.** 1 - presence of two plastic stents (abdominal X-ray); 2-4 - distal part of plastic stents conglomeraed and obstructed by a food bezoar; 5 - aspect of ampulla of Vater after bezoar fragmentation; 6 - cholangiography.

epigastric pain, nausea and vomiting since 5 days. The pain was intermittent, not related to food and radiated to the back. He had not undergone any previous biliary surgery.

On examination the abdomen was neither tender nor distended and bowel sounds were normal. Initial plain abdominal X-ray confirmed the presence of two plastic stents (Fig. 1).

Blood chemistry confirmed cholestasis and abdominal ultrasonography (US) showed biliary tree dilatation. ERCP showed that the distal part of two plastic stents in left and right bile ducts was conglomerated and obstructed by a food bezoar filling a juxtapapillary duodenal diverticulum; the bezoar appeared as a green-yellowish pasty mass of concretions that protruded out into the duodenal lumen, obscuring the papilla and the distal part of stents (Figs. 2-4).

The bezoar was fragmented and removed by Dormia basket and the diverticulum was washed with saline solution (Fig. 5).

Cholangiography confirmed the hilar stenosis; there were no gallstones or other potential causes of obstruction stent (Fig. 6). The two prostheses were removed and substituted with two Amsterdam type plastic stents (10 French, 10 centimeters): the bile flow was restored (Figs. 7-10).

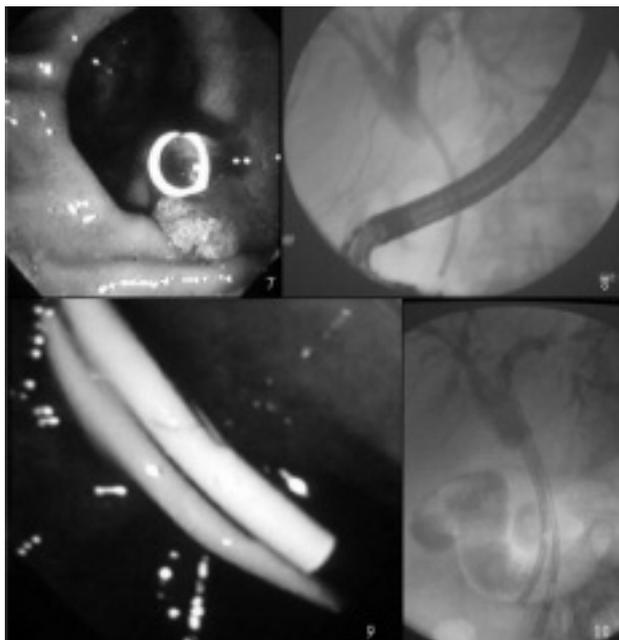
The ulterior course was uncomplicated and the patient was discharged.

He died after 1 year follow-up for neoplastic cachexia.

## Discussion

A duodenal diverticulum appears in 2.5% of upper gastrointestinal examinations and up to 22% of ERCP and autopsies. Most of these patients are asymptomatic, but the lesion is occasionally associated with bleeding, inflammation, perforation, obstruction of the duodenum or biliary-pancreatic duct (or both), fistula formation in the bile duct, and bezoar formation inside the diverticulum.

Great majority of duodenal diverticula are asymptomatic (1) and clinical presentation may be characterized by non-specific abdominal symptoms and less than 5% of patients have abdominal symptoms. Abdominal discomfort is usually located in epigastrium, right upper abdomen or umbilical area which is made worse or brought on by eating and relieved by vomiting, belching or assuming certain posture (2).



Figs. 7-10 - Stent positioning.

In literature, JDD are associated with advanced age, a technically more difficult ERCP, a higher bleeding rate after endoscopic sphincterotomy and a higher frequency of bile duct stones, recurrent com-

mon duct stones, and gallbladder stones; the presence of JDD was not noted to significantly increase the risk for developing acute or chronic pancreatitis, but it is not mentioned the relation between stent obstruction, bezoar formation and JDD (3, 4).

To date, most reports on the stent endoprosthesis in biliary cancer have described small series and stressed simply the initial success rate of the endoprosthesis insertion but, to our knowledge, no studies have systematically analyzed the nature, frequency, and treatment of complications (5, 6); the only 4 cases reported over 200 stent obstruction from 1998 to 2004 are based on observation that duodenal-choledochal reflux of solid food may cause a 'biliary bezoar' and lead to obstruction of metallic stents in subjects with vegetable diet and minimal water intake (7).

## Conclusions

Biliary bezoar is a very rare but treatable cause of stents obstruction in patients with juxtapapillary duodenal diverticulum. ERCP is helpful in making diagnosis and for resolutive treatment.

Recognition of this condition is important as stent obstruction occurs early.

We argue that it may be more common cause than is presently realized.

## References

1. Christoforidis E, Goulimaris I, Kanellos I, Tsalis K, Dadoukis I. The role of juxtapapillary duodenal diverticula in biliary stone disease. *Gastrointest Endosc* 2002;55:543-547.
2. Yildirgan MI, Baflolu M, Yilmaz I, Atamanalp SS, Balik AA, Aydinli B, Öztürk G. Periampullary diverticula causing pancreaticobiliary disease. *Digest Dis Sciences* 2004;49:1943-1945.
3. Hohnson D. Juxtapapillary duodenal diverticula and biliopancreatic disease. World literature review. *Am J Gastroenterol* 2002;97:1834-1838.
4. Mallery JS, Baron TH, Dominitz JA, Goldstein JL, Hirota WH, Jacobson BC, Leighton JA, Raddawi HM, Vargo II JJ, Waring JP, Fanelli RD, Wheeler-Harborough J, Eisen GM, Faige DO. Complications of ERCP. *Gastrointest Endosc* 2003;57(6):633-638.
5. Meyenberger Ch, Fantin AC. Biliary stents. *Ther Umsch* 2003;60(4):225-232.
6. van der Linde K, van der Linden GH, Beukers R, Cleophas TA. Food impaction in a duodenal diverticulum as an unusual cause of biliary obstruction: case reports and review of the literature. *Eur J Gastroenterol Hepatol* 1997;9(6):635-639.
7. Medina H, Venu RP, Brown RD. Biliary bezoar: a rare cause of bile duct obstruction in metallic stent patients. *Gastrointest Endosc* 2005;61(5):AB213.