

Usefulness of Direct Cholangiopancreatography for Management of Pancreatic Calculi: Case Study (with video)

Martín Alonso Gómez,^{1*} Óscar Fernando Ruiz,² Hernando Marulanda Fernández.³

¹ Internist and Gastroenterologist in the Gastroenterology and Echoendoscopy Unit (UGEC) at the National University Hospital and Professor of Medicine at the National University of Colombia in Bogotá, Colombia

² Internist and Gastroenterologist in the Gastroenterology and Echoendoscopy Unit (UGEC) at the National University Hospital in Bogotá, Colombia

³ Internist and Gastroenterology Fellow in the Gastroenterology and Echoendoscopy Unit (UGEC) at the National University Hospital and the National University of Colombia in Bogotá, Colombia

*Correspondence: martinalonsogomez@gmail.com.

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Abstract

We present the case of a patient with chronic pancreatitis. After finding a cystic lesion in the main pancreatic duct, the patient underwent direct cholangioscopy using the SpyGlass DS System. A large impacted calculus and pseudocyst formation was found in the head of the pancreas. Laser lithotripsy was used to extract the entire calculus and symptomatic remission was achieved.

Keywords

Cholangioscopy, Spyglass, pseudocyst, lithotripsy.

INTRODUCTION

Spyglass direct cholangioscopy has revolutionized the treatment of biliopancreatic diseases by facilitating approaches to multiple pathologies previously considered eminently surgical. These pathologies include difficult calculi, biliary and pancreatic stenoses, and assessment and drainage of cystic pancreatic lesions. (1, 2) The SpyGlass DS System not only allows selective cannulation and direct visualization of the bile duct or pancreatic duct, but also provides options of a laser probe that can fracture stones and biopsy forceps for taking samples. (3)

Treatment of chronic pancreatitis is very complex, especially when a patient has pancreatic stones which are very difficult to treat. (4) Although the most commonly recommended treatment is extracorporeal lithotripsy, it is not frequently used in our environment because it is only available

for pathologies of the urinary tract. (5, 6) Consequently, endoscopic retrograde cholangiopancreatography (ERCP) is usually chosen. This procedure has success rates of close to 60% for extraction of pancreatic stones, (7) and both success and complications are closely related to the particular characteristics of a stone such as its shape and location. (8)

CLINICAL CASE

The patient was a 38-year-old man with a history of chronic pancreatitis whose main symptoms were abdominal pain and diarrhea and for whom pancreatic enzymes, neuromodulators and opioids had failed. During follow-up, a 15 mm calculus associated with sacral dilation of the proximal portion of the duct of Wirsung was documented with magnetic resonance cholangiopancreatography (MRCP) (Figure 1 and Video 1). Surgical management was initially proposed

but was rejected by the patient who was referred to our hospital where we decided to use Spyglass direct pancreatoscopy and laser lithotripsy.



Figure 1. Pseudocyst formation secondary to impacted calculus in the main pancreatic duct.



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Video 1. The video shows magnetic resonance cholangiopancreatography of a patient with severe dilation of the duct of Wirsung within which was a calculus. <https://youtu.be/u7rG7WG50To>

For this purpose, ERCP with selective cannulation of the pancreatic duct was performed. A 3 cm sack-shaped dilation associated with a 15 mm calculus in the head of the pancreas was observed. A hydrophilic guide was placed in the pancreatic duct, and then a pancreatic sphincterotomy was performed. The papillotome was removed, and the Spyglass catheter was mounted on the guide. Upon reaching the pancreatic duct, a large dilation and a whitish ovoid stone were observed (Figure 2). A Holmium laser probe was passed over the guide (Figure 3), and the stone was fractured into many fragments so that it could be extracted with the basket. A 7 f stent was left to guarantee drainage of additional residues. It was maintained in place for 24 hours of observation during which the patient's evolution was adequate. During outpatient follow-up, the patient symptoms appeared to be adequately controlled with no need for analgesics and no pain.

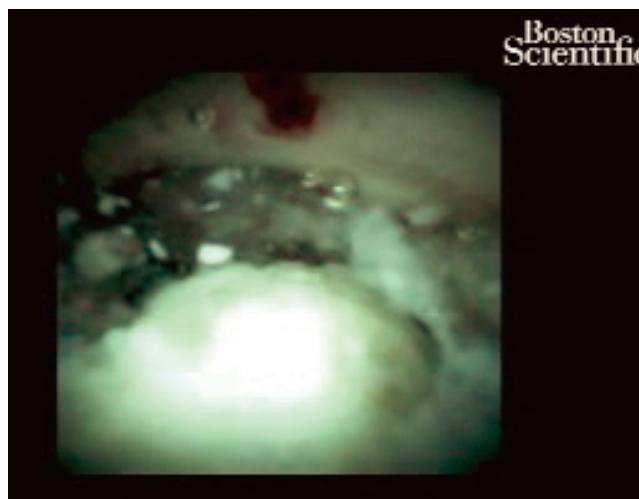


Figure 2. Whitish pancreatic calculus.

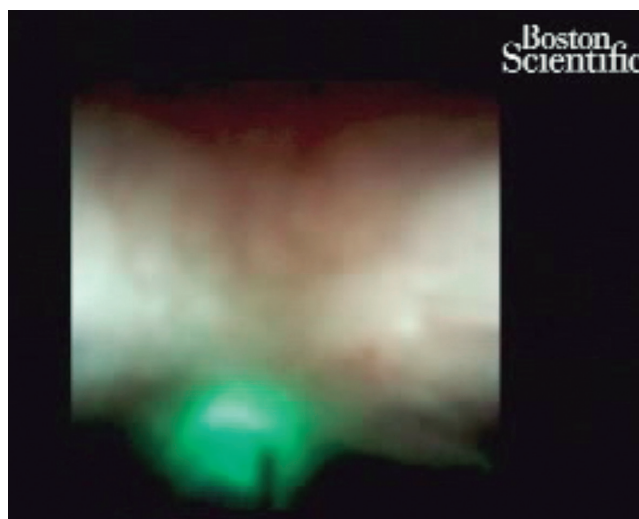


Figure 3. The laser (green light) points in the direction of the calculus to be fractured.

DISCUSSION

Pancreatotomy is a novel procedure that allows endoscopy within the pancreatic duct for diagnostic and therapeutic purposes. (9) It is especially effective for pancreatic pathologies such as chronic pancreatitis, recurrent pancreatitis and fluid collections that are difficult to diagnose and treat in their early stages. (10) At present, there are few centers in Colombia that can offer pancreatoscopy which is why we consider it essential to publicize the possibility of using this type of intervention. This is the first case of successful management of a patient with chronic pancreatitis and a

pancreatic calculus using Spyglass direct cholangiopancreatography reported in Colombia.

We believe that the most appropriate therapeutic approach for our country, taking into account the inherent economic limitations on health services, is to first attempt extraction of pancreatic calculus with perform ERCP using conventional accessories of basket or balloon. After this, a pancreatic stent should always be left in place to avoid development of later complications, especially pancreatitis. (11) Only when this procedure is unsuccessful should pancreatoscopy and laser lithotripsy through the Spyglass system be considered.

CONCLUSION

We present the first case reported in Colombia of the use of the Spyglass DS system to treat a patient with a large pancreatic calculus associated with a pseudocyst. We agree that this method, although very expensive, is useful for treating this type of difficult-to-manage case.

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