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Editorial Board Member of *World Journal of Gastroenterology*, Madhusudana Girija Sanal, MBBS, PhD, Academic Fellow, Assistant Professor, Department of Molecular and Cellular Medicine, Institute of Liver and Biliary Sciences, New Delhi 110070, Delhi, India. sanalmg@gmail.com

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Gallbladder biliary lithotripsy: A new rationale applied to old treatment

Lorenzo Dioscoridi, Massimiliano Mutignani

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Lorenzo Dioscoridi, Massimiliano Mutignani, Digestive Endoscopy Unit, ASST Niguarda, Milan 20100, Italy

Corresponding author: Lorenzo Dioscoridi, MD, PhD, Surgeon, Teacher, Digestive Endoscopy Unit, ASST Niguarda, Piazza dell'Ospedale Maggiore 3, Milan 20100, Italy.
dioscoridi.lorenzo@virgilio.it

Abstract

Pure endoscopic treatment of combined cholelithiasis and choledocholithiasis is possible due to the chance to use together both endoscopic retrograde cholangiopancreatography (ERCP) and endoscopic ultrasound (EUS) approaches. This endotherapy permits to treat biliary stones in the main bile duct by standard ERCP and gallbladder stones by EUS-guided cholecystoduodenostomy eventually associated to intracorporeal lithotripsy to achieve optimal results.

Key Words: Endoscopic ultrasound-guided gallbladder drainage; Biliary lithotripsy; Gallstone lithotripsy; Gallbladder biliary lithotripsy; New rationale

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Core Tip: Combining endoscopic approaches of endoscopic ultrasound (EUS) and endoscopic retrograde cholangiopancreatography (ERCP) let to treat simultaneously biliary stones both in the gallbladder and in the main bile ducts. ERCP standard approach can be associated to EUS-guided gallbladder drainage to avoid recurrences in patients unfit for surgery. To optimize this treatment, gallbladder stones can be fragmented by intracorporeal lithotripsy so their fragments can easily pass through the stent in place for cholecystoduodenostomy. This minimally invasive approach seems promising on the base of available literature.

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TO THE EDITOR

We read with interest the paper by Cianci and Restini[1].

The authors interestingly discussed on indications, advantages and disadvantages of laparo-endoscopic rendez-vous, pure laparoscopic common bile duct exploration and sequential laparoscopic-endoscopic retrograde cholangiopancreatography (ERCP) approach in combined cholelithiasis and choledocholithiasis.

We would like to focus on a totally endoscopic approach to this pathology.

We totally agree with Cianci and Restini[1] that ERCP cannot be considered definitive in the treatment of cholecysto-choledocholithiasis, even if associated with lithotripsy, since the genesis of the stones is secondary to the lithogenic bile in the gallbladder. Thus, can we act endoscopically also on gallbladder stones?

Recently, EUS-guided cholecystoduodenostomy was found comparable to laparoscopic cholecystectomy in terms of clinical outcomes[2]. Recurrent biliary events after EUS-guided gallbladder drainage can be even lowered by associated lithotripsy.

Historically, many studies demonstrated the ineffectiveness of the gallstone lithotripsy alone with high recurrence rate associated to high rate of adverse events, especially in case of multiple and large stones[3,4].

In the recent years, the role of this treatment was re-established because of the new endoscopic approaches described for acute cholecystitis; particularly, the increasing role of EUS-guided cholecystoduodenostomy[5,6] has two main interesting implications in this perspective.

Firstly, EUS-guided gallbladder drainage can be considered as definitive therapy especially in elderly patients unfit for surgery, differently from percutaneous cholecystostomy[4]. After endoscopic stable gallbladder drainage in the duodenum, the gallbladder loses its property to concentrate the bile and, so on, to form new gallstones.

In this setting, the opportunity to destroy the gallstones is interesting, on one hand, to avoid eventually obstruction of the biliary edge of the stent (and subsequent relapses of symptoms) or, on the other hand, further migration of biliary gallstones into the infundibulum or into the biliary tree (and subsequent obstruction of the main bile duct), especially in case of hard and large stones.

Intracholecystic lithotripsy can be theoretically performed as biliary standard lithotripsy because effectiveness and adverse events should not be different, as described in few first experiences[6-8]. On the other side, standard endoscopic treatment for lithiasis of the common bile duct can be provided in the same combined session.

The main limitations of EUS-guided gallbladder drainage are still the need of a sufficient loosening of the gallbladder (evaluated at the preliminary EUS) to guarantee a safe puncture and the absence of extraluminal pericholecystic fluid collection.

Moreover, intracorporeal lithotripsy in the setting acute cholecystitis can be associated with higher risk of perforation because of the acute inflammation of the gallbladder walls[7-9].

We encourage further studies on this focus to verify these first results and to improve the outcomes and indications of endoscopic treatments in this field, especially for patients unfit for surgery.

FOOTNOTES

Author contributions: Dioscoridi L and Mutignani M designed research; Dioscoridi L wrote the letter; Mutignani M revised the letter.

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Country/Territory of origin: Italy

ORCID number: Lorenzo Dioscoridi 0000-0003-4975-018X; Massimiliano Mutignani 0000-0002-1272-4888.

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