

La gestione della litiasi del coledoco

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**Percorsi
diagnostico-terapeutici
in endoscopia digestiva**



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Aula Magna Ospedale di Cona (FE)

Epidemiologia

- Litiasi della colecisti interessa (7-20%) della popolazione occidentale
- Litiasi del coledoco è presente nel 5-15% di questi pazienti
- Può determinare ittero ostruttivo o colangite
- I casi asintomatici determinano complicanze nel 2-3% dei casi
- Dal 21 al 34% dei calcoli del coledoco migra spontaneamente

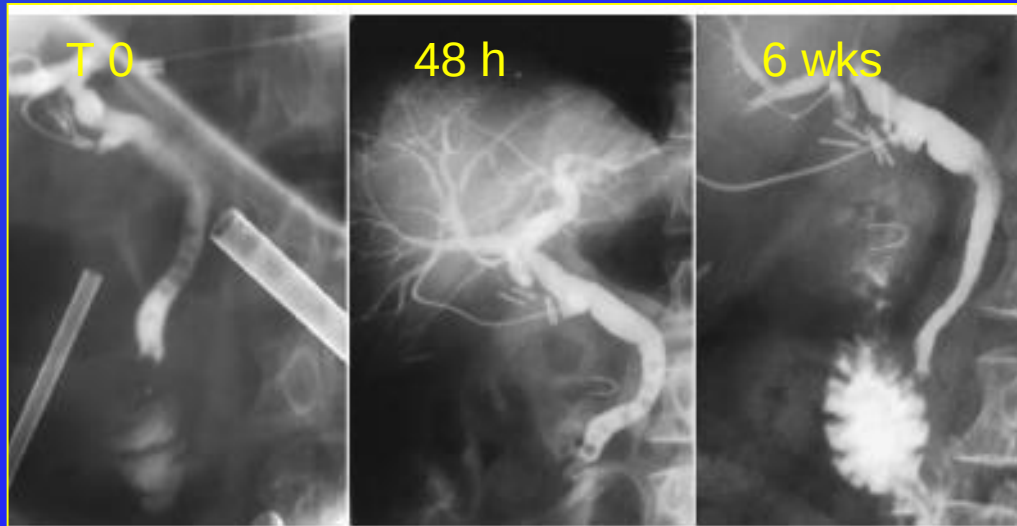
Collins C. et al *Ann Surg* 2004;239: 28–33

Fossard JL et al. *Gastrointest Endosc* 2000;51:157-9

A Prospective Study of Common Bile Duct Calculi in Patients Undergoing Laparoscopic Cholecystectomy

Natural History of Choledocholithiasis Revisited

Chris Collins, AFRCSI, Donal Maguire, MD, FRCSI,* Adrian Ireland, MCh, FRCSI,*
Edward Fitzgerald, MB, FRCR,† and Gerald C. O'Sullivan, MCh, FRCSI**

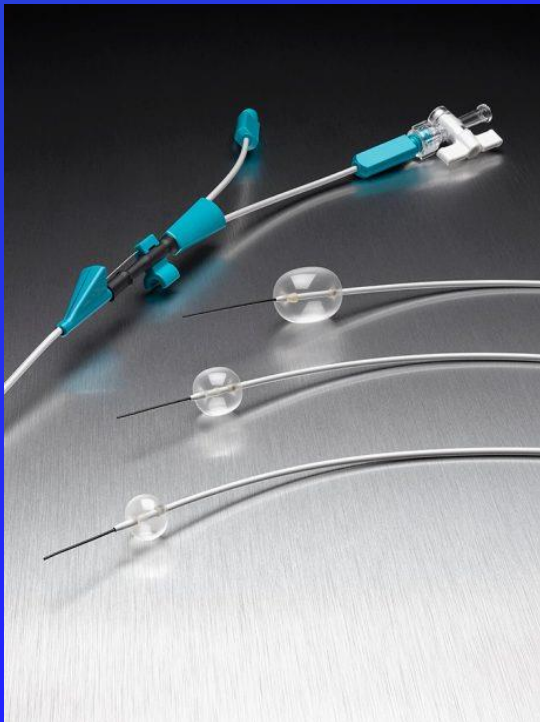


Ann Surg 2004;239: 28–33

- 962 pz sottoposti a colecistectomia
- 46 pz avevano calcoli nel coledoco (4.6%)
- Passaggio spontaneo nel 52% (24 pz) dei casi
- 22 pz presentavano calcoli nel coledoco dopo 6 wks e hanno eseguito ERCP (2.2% del totale)

ERCP

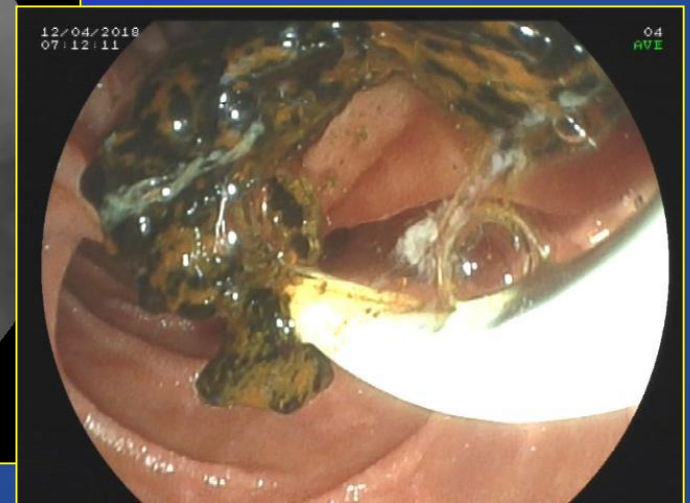
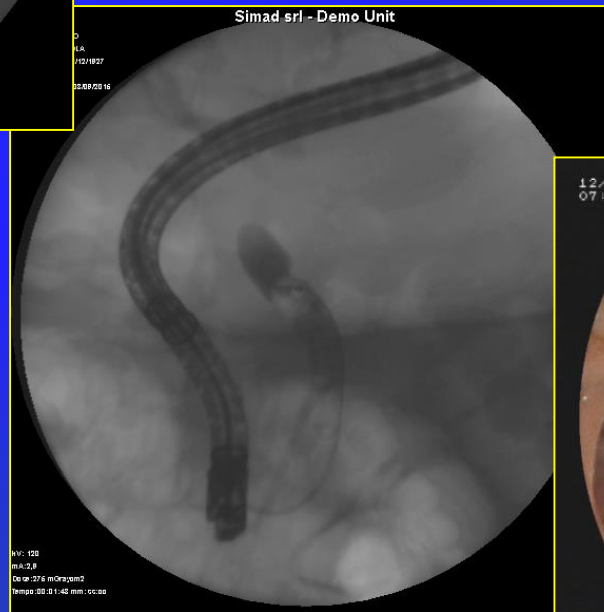
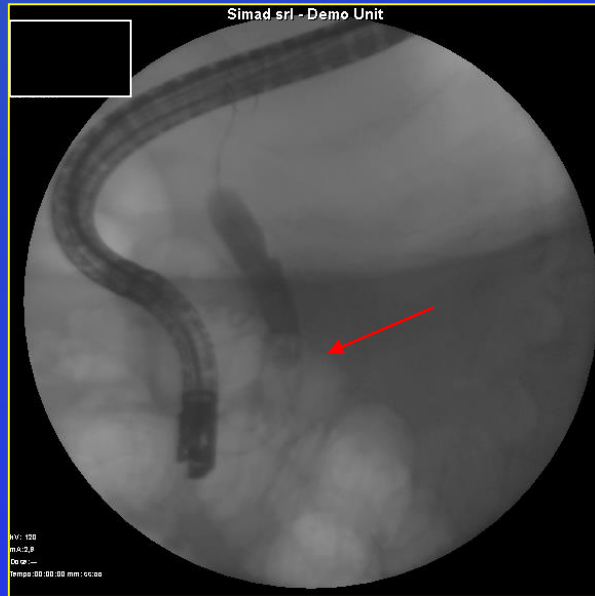
- La colangiopancreatografia retrograda endoscopica è considerato il trattamento scelta per la litiasi del coledoco con un % di successo tra 87 e 100% dei casi



Ponchon T et al Endoscopy 1989

Elfant AB Am j gastroenterol 1996

Litiasi del coledoco



PROSPECTIVE EVALUATION OF THE OUTCOME OF ERCP IN PATIENTS ADMITTED IN A GASTROENTEROLOGY UNIT

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#Gastroenterology Unit S. Anna Ferrara; *Department of Surgery Messina Hospital.

Background: The outcome of ERCP is a balance between technical success, avoidance of complications and efficacy of the procedure in achieving its intended therapeutic goal. Other possible outcomes are length of hospital stay and need for surgery in case of failure. The aim of our study was to evaluate the outcome of ERCPs performed in our unit.

Methods: We prospectively assessed the outcomes of ERCP in patients admitted in our unit from April 2000 to January 2002. Pre ERCP, patients were evaluated by US (77%), by TC (15%) and by RMN (8%). Indications for ERCP were always checked by a component of medical staff. All but one had therapeutic goals. A dedicated data base was created modifying the model proposed by Freeman ML. (1). We also evaluated the rate of major complications within 10 days and the need for surgery. Finally we calculated the mean length of hospital stay and the stay after the procedures.

Results: We performed 121 ERCP in 104 patients (60 male, mean age 71,3 yrs): in 90 (74,3 %) cases we obtained complete technical success; partial therapeutic success (incomplete stone clearance or stricture drainage despite duct access) was achieved in 19 pts, the procedure was repeated in 14 of them with success in all cases. In 11 patients ERCP was unsuccessful (9%); in 3 of them a second attempt was successful. Altogether, technical success was reached in 88,4 % of cases. Surgery was performed in 25 pts, scheduled in 20 and as a consequence of failure in 5 (4,1%). Percutaneous approach was done in 5 pts (4,1%).

Procedure related complications occurred in 19 cases (15%): 7 pancreatitis (6 mild, 1 severe) (5,9%), 2 perforations (1,7%), 5 cholangitis (4,2%), 2 haemorrhages (1,7%), 3 cardiopulmonary (2,5%), 2 deaths occurred during a 30 day postprocedure period due to cardiopulmonary complications (1,7%).

The mean length of hospital stay was < 4 days in 10.1%, between 4 to 10 days in 67.2% and >10 days in 22.6% of pts. Patients were discharged after a mean of 3,4 days post-ERCP.

Conclusion: In our series ERCP is an effective and relatively safe procedure. Therapeutic ERCP can reduce the need of surgery and the length of hospitalisation.

1)Gastrointest Endosc Clin N Am 1999;4:639-47

Casistica di 9 mesi 2015

179 ERCP (indicazione litiasi 65% dei casi):
successo in 158 casi
(88%)

Dei 21 casi rimanenti,
10 pz sono stati
ritrattati con successo
ad un secondo
tentativo (successo
complessivo 94%)

Selezione dei pazienti per ERCP

- Precedenti studi riportano che dal 20-50% delle ERCP risultavano negative
- Corretta selezione dei pazienti
- Complicanze ERCP: pancreatite acuta (5-20%), emorragia (0.2-5%), perforazione (0.1-0.6%), complicanze cardiopolmonari (1%)
- Mortalità 0.4-0.5%

Fattori predittivi per la presenza di coledocolitiasi

- F. alcalina, gammaGT, bilirubina (sensibilità 25-50%, 75% se bili<4 mg/dl)
- Ø del coledoco <8 mm
- Età < 55 aa
- L'associazione di più fattori aumenta la probabilità di coledocolitiasi

TABLE 2. A proposed strategy to assign risk of choledocholithiasis in patients with symptomatic cholelithiasis based on clinical predictors

Predictors of choledocholithiasis^{13,14,20,31,32}

Very strong

- CBD stone on transabdominal US
- Clinical ascending cholangitis
- Bilirubin >4 mg/dL

Strong

- Dilated CBD on US (>6 mm with gallbladder in situ)
- Bilirubin level 1.8-4 mg/dL

Moderate

- Abnormal liver biochemical test other than bilirubin
- Age older than 55 y
- Clinical gallstone pancreatitis

Assigning a likelihood of choledocholithiasis based on clinical predictors^{12-14,28,29,31,32}

Presence of any very strong predictor	High
Presence of both strong predictors	High
No predictors present	Low
All other patients	Intermediate

CBD, Common bile duct

PREDICTING THE PRESENCE OF CHOLEDOCHOLITHIASIS IN PATIENTS WITH SYMPTOMATIC CHOLELITHIASIS

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S. Anna

Accurate preoperative prediction of choledocholithiasis (CBDS) is essential in order to minimize patient risk and curtail health care expenditure. Routine screening of all patients with invasive testing before laparoscopic cholecystectomy (LC) is no longer warranted, nor routine application of costly and sophisticated imaging modalities (MRC, EUS) is practicable. We aimed at identify independent predictors of CBDS. 108 consecutive patients (56 women, and 52 men) with symptomatic cholecystolithiasis were evaluated. Symptoms at presentation, laboratory values, postoperative course, and the diameter of the common bile duct (CBD) measured at preoperative ultrasound, were recorded. On the basis of the clinical suspicion, 72 patients underwent preoperative ERCP before surgery, and 36 underwent directly to LC. The gold standard for CBDS was ERCP, or intraoperative cholangiography in patients not submitted to preoperative ERCP. Ten candidate predictors of CBDS were analysed: patient age, CBD diameter, and maximum pre-ERCP (or preoperative) values for each of the following: body temperature, AST, ALT, amylase, alkaline phosphatase (AP), bilirubin, gGT, and white blood cell count. Overall, CBDS were found in 52 patients (48%); in 48/72 ERCP (67%) and in 4/36 LC performed without prior ERCP (11%). CBDS patients were older than patients without (the difference was significant only in the female group). Ultrasound detected dilated CBD (>6 mm) in 48 patients, and in 8 of them the CBDS were visualized. Univariate analysis identified dilated CBD, AP, gGT, bilirubin and age as predictors of CBDS. The best predictor was CBD diameter >6 (sensitivity 80%, specificity 81%; OR 14.2, 95% CI 6.6-44.5). For increased AP value sensitivity was 71%, specificity 80% (OR 6.6, 95% CI 3.9-23.6). At multivariate logistic regression, only dilated CBD ($p<0.0001$) and increased AP ($p<0.01$) were identified as independent predictors of CBDS. The sensitivity of the model was 74%, specificity 75%, and overall correct prediction was 0.75. In conclusion, preoperative accurate estimates of CBDS risk can be made noninvasively using AP level and CBD diameter assessed at ultrasound. Our results suggest that routine ultrasonography prior LC for symptomatic cholelithiasis should be recommended in order to determine the diameter of the CBD: in patients with a ductal diameter >6 mm, ERCP should be performed.

Diagnosi Strumentale di litiasi del coledoco

- Ecografia addominale: sensibilità 18-74%
- TC addome: 50-90%
- Colangio-RMN: 85-88%
- EUS:93-100%

Table 4

Sensitivity of EUS, MRCP and HCT-C for CBD stone according to diameter

	EUS	MRCP	HCT-C
Stone size 1–4 mm	100% (9/9)	67% (6/9)	67% (6/9)
Stone size >5 mm	100% (15/15)	100% (15/15)	100% (15/15)

Verna D et al. GIE 2006;64:248-54

Ainsworth AP et al Endoscopy 2003;35:1028-32

Kondo S et al Eur J Radiol 2005;54:271-75



**Cochrane
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Cochrane Database of Systematic Reviews

**Endoscopic ultrasound versus magnetic resonance
cholangiopancreatography for common bile duct stones
(Review)**

Giljaca V, Gurusamy KS, Takwoingi Y, Higgie D, Poropat G, Štimac D, Davidson BR

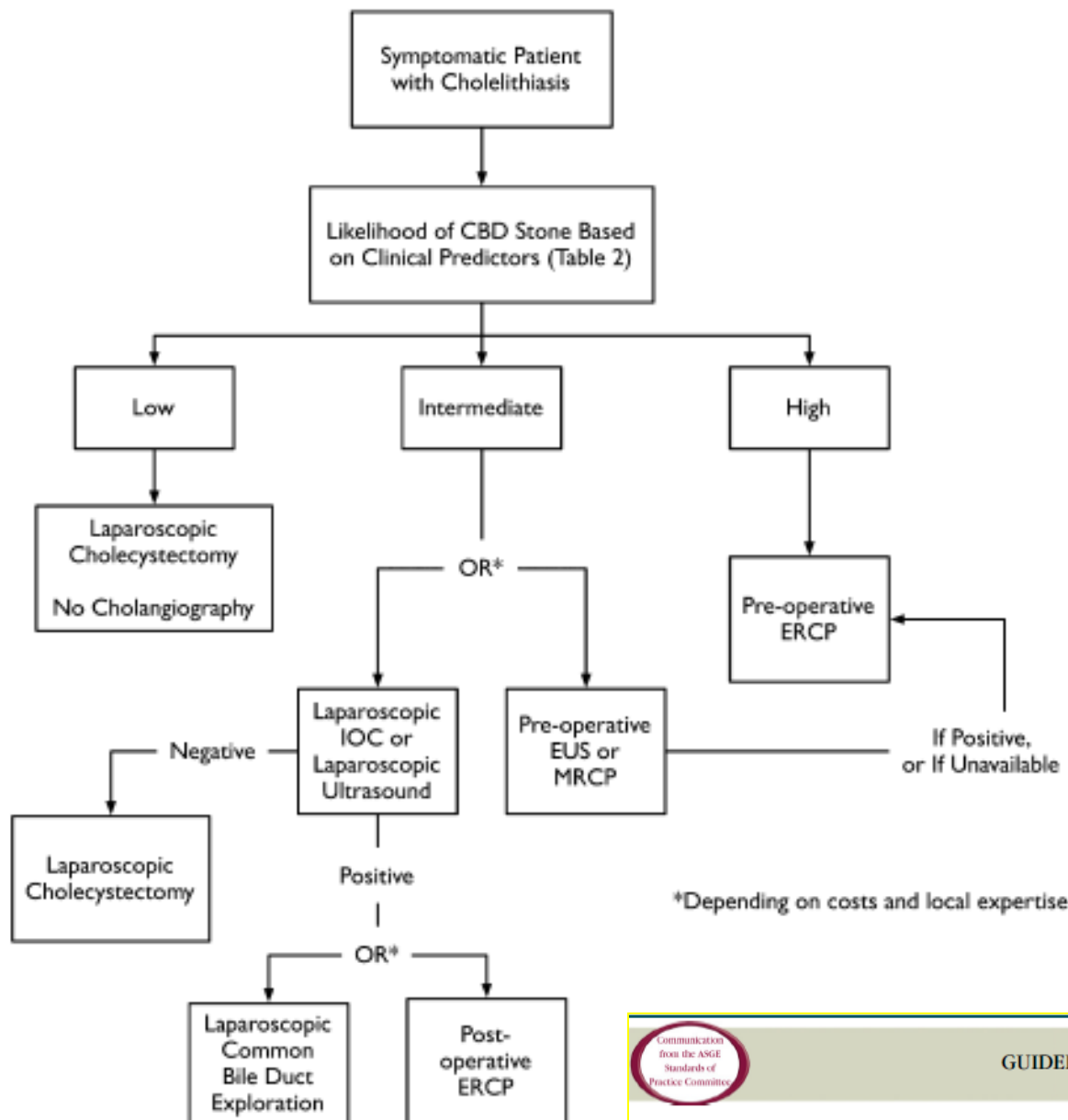
2015

- Nessuna differenza significativa in termini di sensibilità e specificità tra Colangio-RMN e EUS (EUS 95% e 97% vs MRCP 93% e 96%)

Possibili scenari:quale strategia?

- ERCP pre colecistectomia in caso di alta probabilità di litiasi del coledoco
- ERCP intraoperatoria in caso di riscontro di litiasi mediante colangiografia intraoperatoria
- ERCP post colecistectomia in caso di riscontro di litiasi mediante colangiografia intraoperatoria

Nessuna differenza in termini di outcome tra i differenti approcci



GUIDELINE



The role of endoscopy in the evaluation of suspected choledocholithiasis

Trattamento della litiasi colecisto-coledocica

- Chirurgia open
- ERCP+VLC
- Esplorazione laparoscopica del coledoco

Efficacy and safety of laparoscopic bile duct exploration versus endoscopic sphincterotomy for concomitant gallstones and common bile duct stones

A meta-analysis of randomized controlled trials

Ying-chao Gao, MM^a, Jinjun Chen, MM^b, Qiyu Qin, MM^b, Hu Chen, MM^b, Wei Wang, MM^b, Jian Zhao, MM^b, Fulong Miao, MM^b, Xin Shi, MM^{b,*}

Medicine 2017;96:37

- Nessuna differenza in termini di % di clearance dei calcoli del coledoco (88.6 vs 87.1)
- Nessuna differenza in termini di complicanze (10.2 vs 9.1)
- Maggior tasso di conversion nel gruppo chirurgia
- Maggior tempo operatorio (differenza 12 min) e degenza (1 giorno) nel gruppo endoscopico



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Cochrane Database of Systematic Reviews

Surgical versus endoscopic treatment of bile duct stones (Review)

Dasari BVM, Tan CJ, Gurusamy KS, Martin DJ, Kirk G, McKie L, Diamond T, Taylor MA

2013

- Minore % di calcoli ritenuti nel gruppo chirurgia (6 vs 16%)
- Nessuna differenza in termini di mortalità, morbidità e clearance dei calcoli

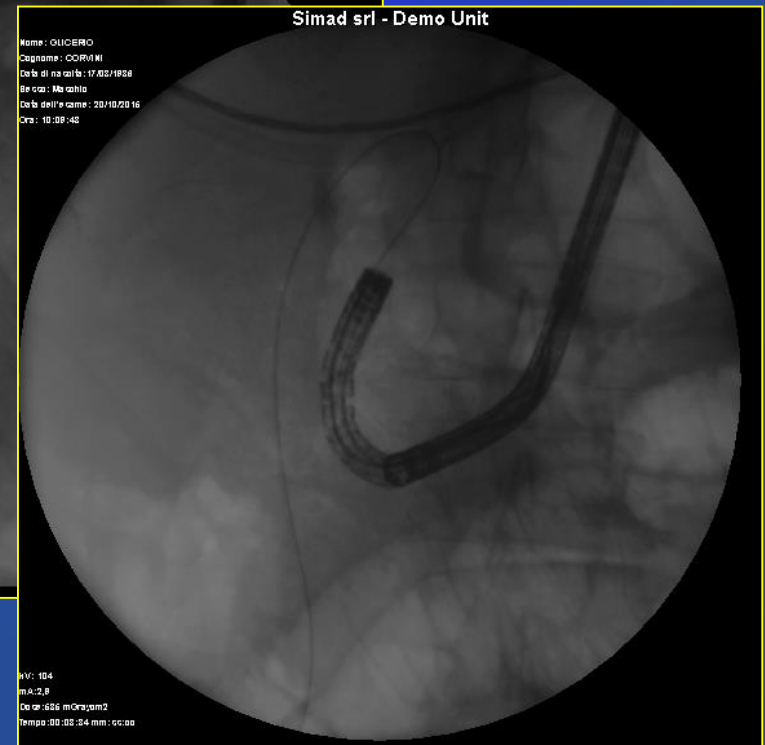
Laparoendoscopic rendezvous in the treatment of cholecysto-choledocholithiasis: a single series of 200 patients

Giuliano La Barba¹ · Andrea Gardini¹ · Elena Cavargini² · Alessandro Casadei² · Paolo Morgagni¹ · Francesca Bazzocchi¹ · Fabrizio D'Acapito¹ · Davide Cavaliere¹ · Roberta Curti¹ · Domenico Tringali¹ · Alessandro Cucchetti³ · Giorgio Ercolani^{1,3}

Surg Endosc febbraio 2018

- Casistica retrospettiva di 200 casi di litiasi colecisto-coledocica trattata con tecnica di rendezvous chirurgico
- 95% di successo tecnico
- Complicanze precoci 14.5%
- tasso di conversione 3%
- Degenza media 4 gg

Rendezvous radiologico-endoscopico



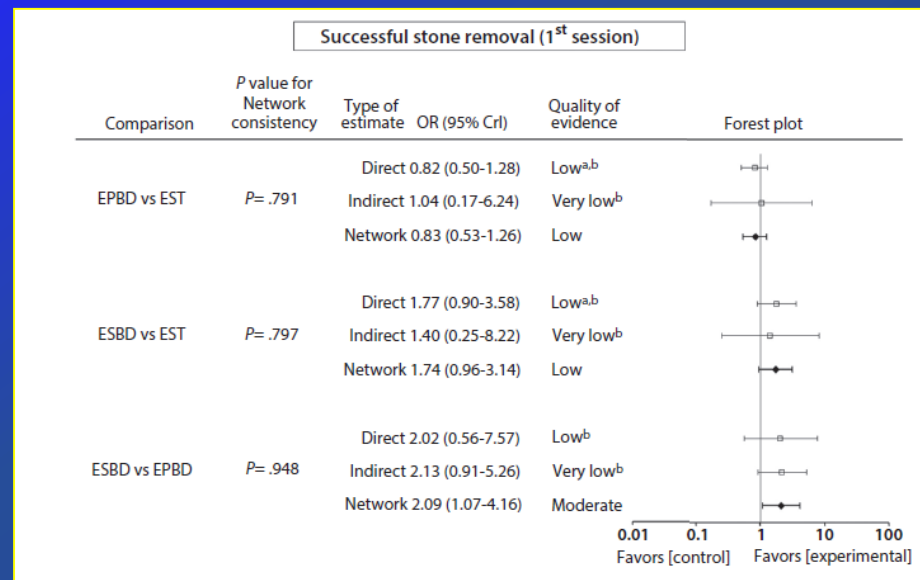
Comparative efficacy of various endoscopic techniques for the treatment of common bile duct stones: a network meta-analysis



Chan Hyuk Park, MD,¹ Jang Han Jung, MD,² Eunwoo Nam, PhD,³ Eun Hye Kim, MD,⁴ Mi Gang Kim, MD,² Jae Hyun Kim, MD,² Se Woo Park, MD²

Gyeonggi-do, Seoul, Korea

- Confronto tra dilatazione della papilla (EPBD), sfinterotomia (EST) e sfinterotomia con dilatazione (ESBD)
- Maggiore efficacia per ESBD, minore ricorso alla litotrissia, complicanze simili (non statisticamente significative)



Timing della colecistectomia

- La VLC dovrebbe essere eseguita entro 2 settimane dalla rimozione dei calcoli in coledoco
- Se posticipata aumenta in rischio di colecistite, recidiva di colica biliare e di litiasi del coledoco e pancreatite

Table 2. Conversion Rate and Reasons for Conversion in Patients Undergoing Early or Delayed LC After ES for Combined Choledochocystolithiasis

	Early LC (n = 47)	Delayed LC (n = 47)	<i>P</i> value
Conversion rate	2 (4.3)	4 (8.7)	.401
Unclear anatomy	1 (2.2)	2 (4.3)	
Adhesions	1 (2.2)	—	
Biliodigestive fistula	—	2 (4.3)	

NOTE. Data are numbers (%).

LC, laparoscopic cholecystectomy; Early LC, laparoscopic cholecystectomy within 72 hours after endoscopic sphincterotomy; Delayed LC, after 6–8 weeks after endoscopic sphincterotomy.

Table 3. Biliary Events Occurring After ES During a Follow-Up Period of 6 Months in Patients Undergoing Early or Delayed LC After ES For Combined Choledochocystolithiasis

	Early LC (n = 47)	Delayed LC (n = 47)	<i>P</i> value
Biliary events	1 (2.1)	18 (36.2)	<.001, LR = 20.623
Colic pain	—	13 (27.7)	
Acute cholecystitis	—	4 (8.5)	
Biliary pancreatitis	—	—	
Recurrent CBD stones	1 (2.1)	1 (2.1) ^a	

Conclusioni

- La litiasi colecisto-coledocica è un patologia di frequente riscontro e che richiede una gestione endoscopico-chirurgico
- Occorre selezionare bene i pazienti da sottoporre ERCP
- Gli avanzamenti tecnici chirurgici ed endoscopici permettono di affrontare con varie modalità la litiasi coledocica e con alte % di successo