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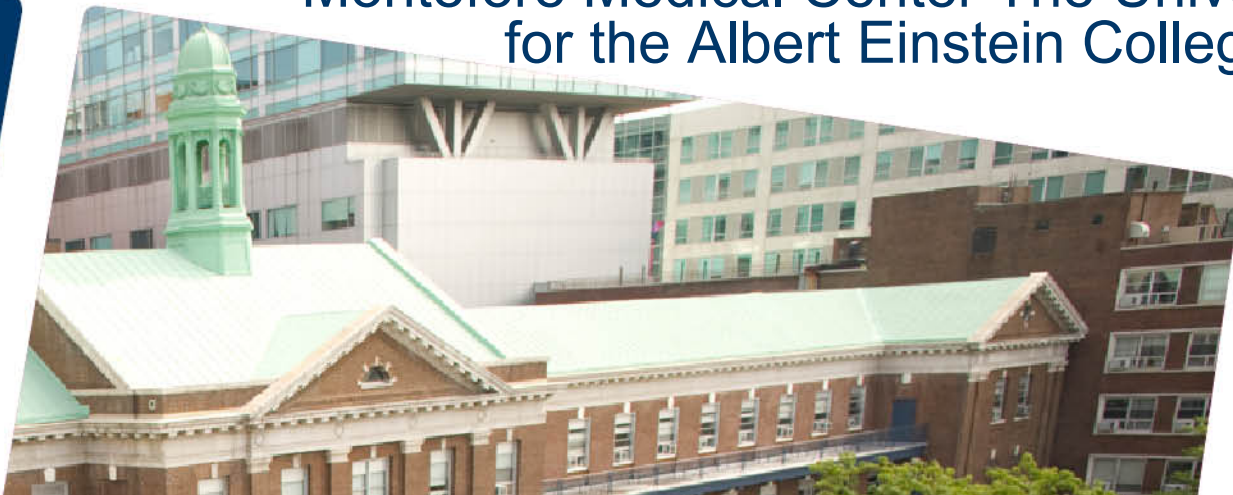
Common Bile Duct Stones Following Roux-en-Y Gastric Bypass

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- Nothing to Disclose

Cholelithiasis in the bariatric patient

- 8 times higher in patients with BMI > 40
- 30% of patients after RYGB have cholelithiasis
 - hypersaturation of bile
 - Gallbladder hypomotility
 - Biliary sludge and stone formation

Concomitant Cholecystectomy During Laparoscopic Roux-en-Y Gastric Bypass in Obese Patients Is Not Justified: A Meta-Analysis

- Patient with asymptomatic cholelithiasis only 18% will require cholecystectomy
- Ursodeoxycholic acid lowers incidence of cholelithiasis to 2-6%
- Only 4-8% require cholecystectomy after bariatric surgery.
- Only 0.2% of patients after RYGB develop choledocholithiasis

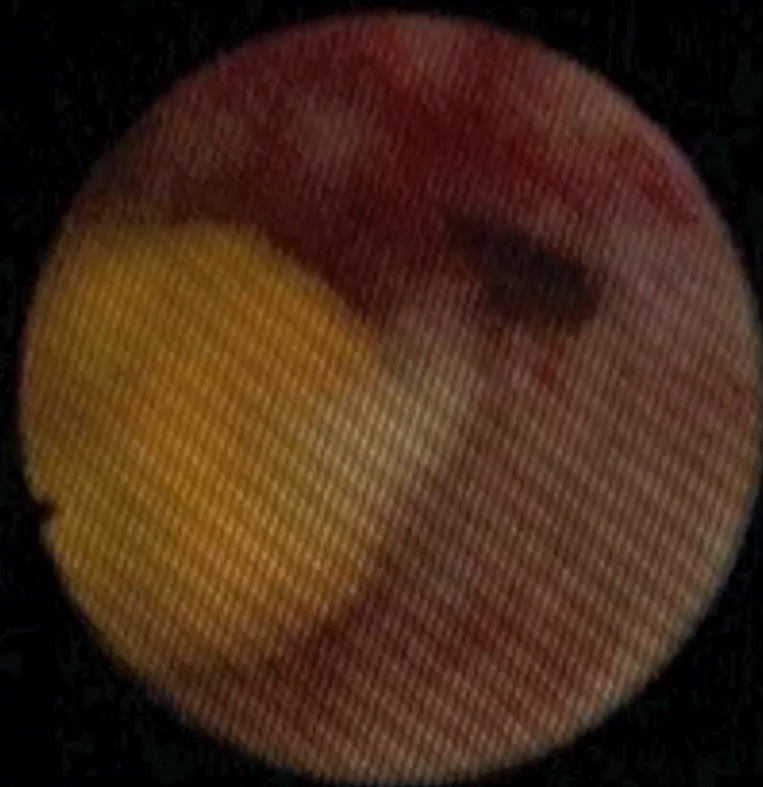
•Warschkow R et al. SOARD 2013

Cholecystectomy in RYGB

- It is recommended to do a cholangiogram at the time of cholecystectomy.
- It is recommended to examine the mesocolic defects
 - internal hernia could present with pain similar to biliary colic.

Choledocholithiasis after RYGB

- Incidentally during lap cholecystectomy
 - Flush w saline
 - IV glucagon
 - Fluoroscopic and endoscopic (66-89%)



Choledocholithiasis after RYGB

- In the patient with preoperative suspicion
 - Percutaneous transhepatic cholangiography
 - Balloon assisted endoscopy
 - Percutaneous transgastric ERCP
 - CBD exploration via Choledochotomy

Percutaneous transgastric ERCP

- Via remnant stomach
 - Gastrostomy tube
 - Laparoscopic assisted

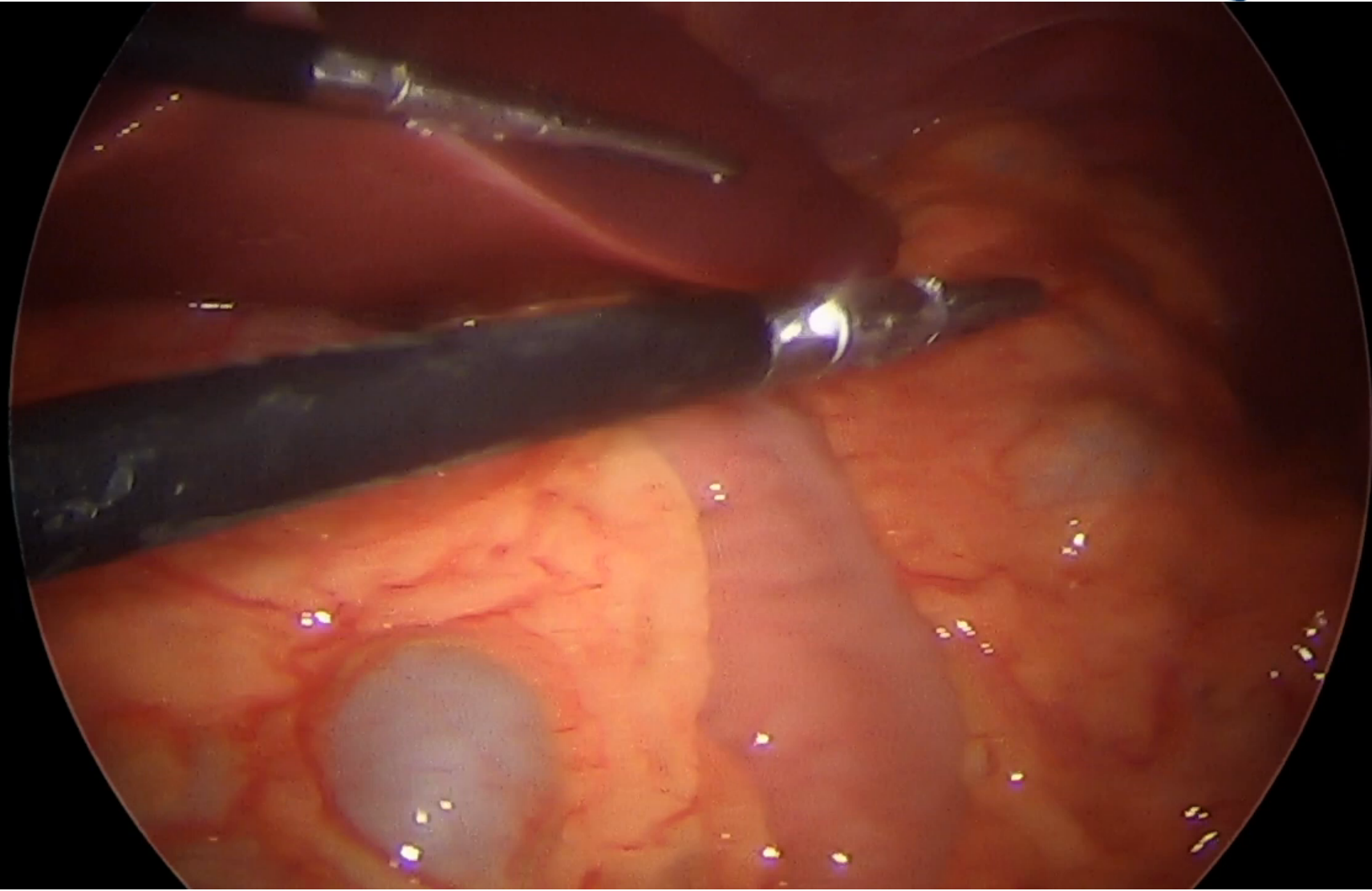
TABLE 2. Case Reports of Laparoscopic or Open Transgastric Endoscopy

Author	Year	Access	TG Endo 97	CBDc Attempts 84	CBDc Success 83 (98.8%)	Complications 7 (7.2%)	Complication Description
Pimentel et al. ³⁶	2004	L	1	1	1	0	
Ceppa et al. ²⁷	2007	L	10	5	4	0	
Nakao et al. ³²	2007	L	1	1	1	0	
Patel et al. ³³	2008	L, O	8	8	8	0	
Roberts et al. ³⁷	2008	L	6	6	6	0	
Dapri et al. ²⁸	2009	L	1	1	1	0	
Gutierrez et al. ²⁹	2009	L, O	32	28	28	4	Gastrostomy leak (n = 2), wound infection (n = 1), pancreatitis (n = 1)
Peeters and Himpens ³⁴	2009	L	1	1	1	1	Pancreatitis (n = 1)
Sebastián et al. ³⁸	2009	L	1	1	1	0	
Badaoui et al. ²⁵	2010	L	1	1	1	0	
Bertin et al. ²⁶	2011	L, O	22	20	20	2	Retroperitoneal perforation (n = 1), abdominal wall hematoma (n = 1)
Saleem et al. ³⁹	2012	L	15	15	15	0	
Current case series	—	L	13	11	11	0	

TG Endo, transgastric endoscopy; CBDc, common bile duct cannulation; L, laparoscopic access; O, open access.

Lap ERCP

- 31yo F
 - Lap RYGB 2013 at OH
 - Current BMI 25
 - Lap Chole 2 wks prior at OH uneventful
 - Readmitted for RUQ pain
 - 5.5mm stone on MRCP
 - TB 3.2 DB2.7
 - Transferred to MMC for management
- Taken to OR for Lap ERCP



Long-term results of laparoscopic common bile duct exploration by choledochotomy for choledocholithiasis: 15-year experience from a single center

- 96% lap success
- 98% after conversion to open
- 7.2% complication rate
- 4% leak rate

Table 2. Operative outcome of LCBDE

Variable	Value
LCBDE attempted	157
Open conversion	5 (3.2)
Stone clearance	149 (98.0)
Complications	11 (7.2)
Bile leakage	6 (3.9)
Bleeding	2 (1.3)
Pneumonia	2 (1.3)
Abscess	1 (0.7)
Choledochotomy repair	
T-tube placement	60 (39.5)
Primary closure	92 (60.5)
Mean operation time (min)	187.0 ± 67.0
Postoperation hospital stay (day)	11.0 ± 6.1

To summarize.

- No routine lap chole in RYGB
- When doing lap chole after RYGB if CBD stone
 - Flush
 - Glucagon
 - Endo/fluro exploration
- Suspicion of CBD stone preoperatively
 - Percutaneous ERCP
 - Choledochotomy