Choledocholithiasis following Roux-en-Y Gastric Bypass: why reinvent the wheel?

Amber Shivarajan, Hiba Shanti, Ameet G. Patel
Department of Minimal Access Surgery, King's College Hospital, London

King's College Hospital NHS Foundation Trust

Introduction

Patients post Roux- en-Y gastric bypass (RYGB) are high risk for development of gallstones in the absence of prophylactic Ursodeoxycholic acid (35-38%)[1]

The Altered anatomy in patients following Roux-en-Y gastric bypass (RYGB) poses a challenge to performing traditional endoscopic retrograde cholangiopancreatography (ERCP).

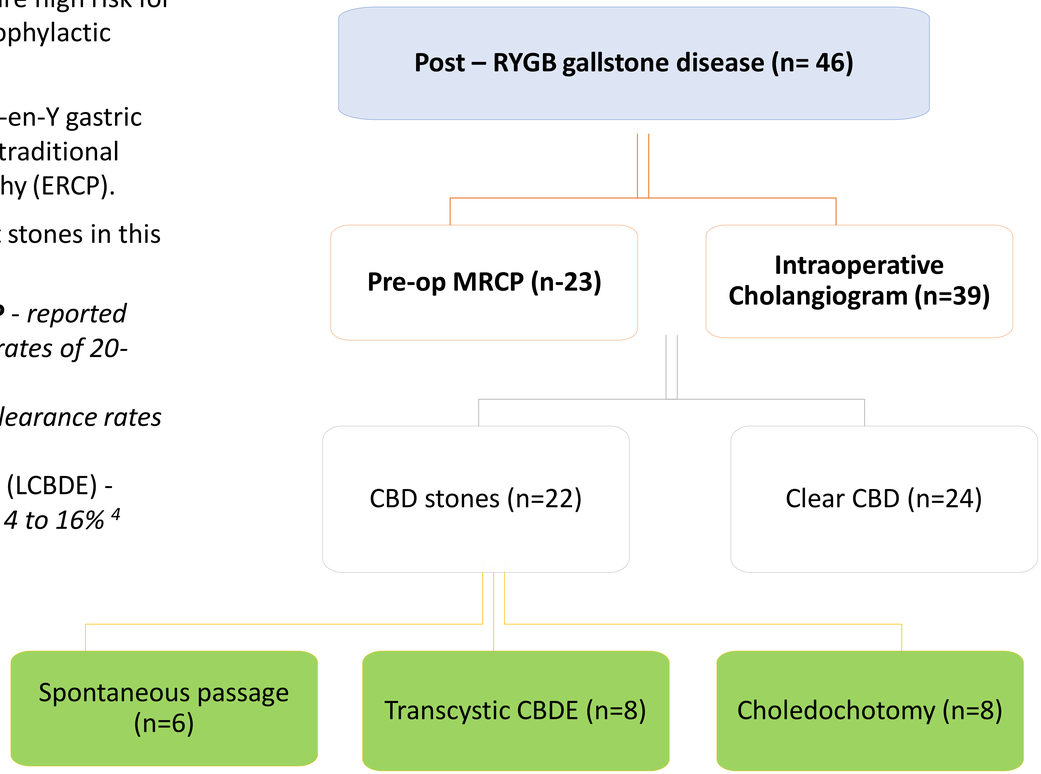
The best approach to the treatment of bile duct stones in this group of patients remains debatable:

- **Laparoscopic assisted transgastric (TG) ERCP** - *reported clearance rates of up to 98%, and morbidity rates of 20-30%* [2-3]
- **Enteroscopy assisted (EA) ERCP** – *reported clearance rates of 73%, and morbidity rates of 7%* [2]
- **Laparoscopic common bile duct exploration** (LCBDE) - *clearance rates of 85-100% and morbidity of 4 to 16%* [4]

Aim

Review of safety and efficacy of Laparoscopic common bile duct exploration post- RYGB.

Results



Patient cohort	n=46
Median Age (Y, range)	49 (18-69)
Gender (M:F)	12 (26%): 34 (74%)
Median BMI (Kg/m^2, range)	31.7 (16.7 - 52.1)
Pre-attempted cholecystectomy (n,%)	1 (2%)
Previous cholecystostomy insertion (n,%)	1 (2%)

Operative outcomes	n=46
Emergency (n,%)	12 (26%)
Hospital stay (days)	2 (1-15)
90–day Morbidity (n,%)	2 (4%)*
90-day Mortality (n,%)	0
Ductal clearance (n,%)	100%
Stone Recurrence (12 month follow up)	0

**One patient developed a surgical site infection (Clavien-dindo grade I), and one patient developed a chest infection post operatively (Clavien-dindo grade II).*

Methods

Between 2005 to 2020, we retrospectively reviewed a single surgeon's experience of laparoscopic cholecystectomy (LC) in patients following RYGB.

Conclusions

This small series does suggest that laparoscopic clearance of the CBD can be achieved with low morbidity and mortality, especially when compared to the published results for TG or EA ERCP. The one-stop laparoscopic cholecystectomy and bile duct clearance may be a preferred approach in this cohort, due to the physical barrier to ERCP that the RYGB imposes.

References

1. Talha, A., Abdelbaki, T., Farouk, A., Hasouna, E., Azzam, E. and Shehata, G. (2019). Cholelithiasis after bariatric surgery, incidence, and prophylaxis: randomized controlled trial. *Surgical Endoscopy*, 34(12), pp.5331–5337.
2. Ayoub, F., Brar, T.S., Banerjee, D., Abbas, A.M., Wang, Y., Yang, D. and Draganov, P.V. (2020). Laparoscopy-assisted versus enteroscopy-assisted endoscopic retrograde cholangiopancreatography (ERCP) in Roux-en-Y gastric bypass: a meta-analysis. *Endoscopy International Open*, 08(03), pp.E423–E436.
3. Koggel, L.M., Wahab, P.J., Robijn, R.J., Aufenacker, T.J., Witteman, B.P.L., Groenen, M.J.M. and Vrolijk, J.M. (2020). Efficacy and Safety of 100 Laparoscopy-Assisted Transgastric Endoscopic Retrograde Cholangiopancreatography Procedures in Patients with Roux-en-Y Gastric Bypass. *Obesity Surgery*, 31(3), pp.987–993.
4. Shojaiefard, A., Esmaeilzadeh, M., Ghafouri, A. and Mehrabi, A. (2009). Various Techniques for the Surgical Treatment of Common Bile Duct Stones: A Meta Review. *Gastroenterology Research and Practice*, 2009, pp.1–12.