Minimally Invasive Bile Duct Exploration During Cholecystectomy SHOULD BECOME THE STANDARD OF CARE for Management of Choledocholithiasis

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CASE SERIES BY A MID CAREER SURGEON WITH NO PRIOR CBDE TRAINING

DIGITAL SCOPE

EHL (with foot pedal)

SALINE PUMP (with foot pedal)

INTRA-OP OUTCOMES

- **134** consecutive patients (2022-2025)
- **93%** successful trans-cystic choledochoscopy and CBD clearance
- **73%** of scope cases used lithotripsy (EHL)
- **15** balloon sphincteroplasties (no scope)
- **0** choledochotomies
- **0** conversions to open surgery
- **2 hour** average case length for the last 50 cases

POST-OP OUTCOMES

- **70%** discharged from PACU
- **5.2%** readmissions
- **5.8%** minor complications
- **0** unexpected bile leaks (**4** cystic duct leaks with surgical drain, all sealed with post op ERCP)

PEARLS

- Position **Steep Reverse Trendelenburg** for the entire case, gravity is an essential advantage
- **Lock the Dome Grasper** to the drapes
- Stand on the patient's **Right Side for MIS CBDE**
- **Routinely Dilate the Cystic Duct** with a 6 mm balloon or 11 French sheath over a wire
- **Liberal Use of Pedal Controlled Saline Irrigation** (to lubricate + dilate the cystic duct and power flush the CBD)
- **Liberal use of EHL** if stone doesn't push into duodenum
- Give 1 mg **Glucagon** to relax sphincter
- Give 100 mg rectal **Indomethacin** if you dilate the sphincter

MIS CBDE SUPPLIES

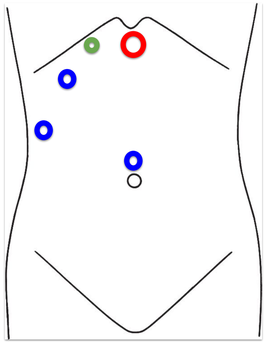
- **Veress needle with open tip** or **18g spinal needle** or **>18g IV** for wire access across abdominal wall and stabilized cystic duct access
- **0.035 wire** nitinol with hydrophilic tip = floppy tip, ~150cm length
- **IOC supplies** 5Fr ureteral stent (or bigger to push/flush), IV tubing, 3 way stop cock, 2 syringes, saline and 50:50 contrast)
- **Sheath with dilator for abdominal wall working port** 11Fr + 10cm length is ideal (vascular access sheaths work well)
- **Dilation balloon** 6mm x 40mm x 40cm is good for cystic duct and sphincter
- **Digital, single use scope with video processor** choledochoscope or ureteroscope
- **Pedal controlled saline irrigation** pump + foot pedal + single use tubing
- **EHL** power generator + foot pedal + extender cable + single use probe

HOW TO START TOMORROW

- Book choledocho cases for **SURGERY FIRST** (many stones pass spontaneously by the time you get into the OR)
- Do more selective IOCs with **floppy tip wire and 5Fr catheter**
- Ask ER to **CALL SURGERY FIRST** for choledocholithiasis, gallstone pancreatitis, cholangitis
- Apply for a **fluoro license** (if your state requires it)
- Scrub some cases with **GI, URO, IR** or invite them to join your cases

HOW TO VIDEOS

SCAN ME



PORT PLACEMENT

Red:
12mm port

Blue:
5mm ports

Green:
11Fr sheath
working port for CBDE