

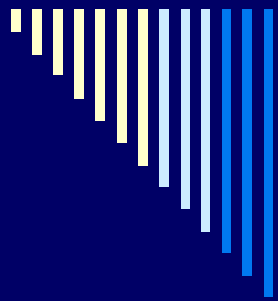
Laparoscopic Cholecystectomy



First View

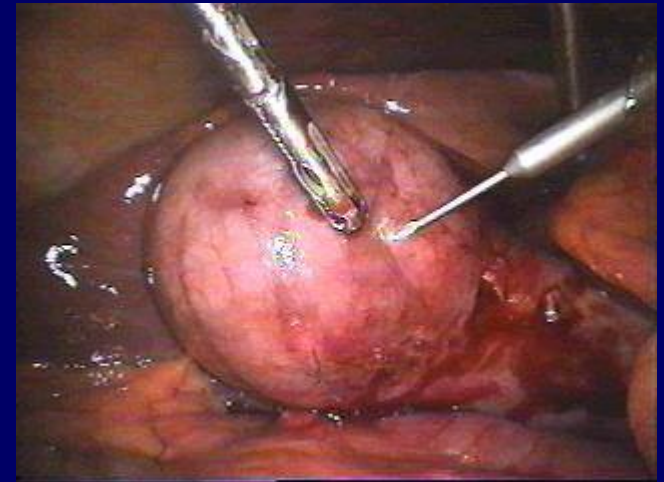
R. K. Mishra





INTRODUCTION :

- Laparoscopic cholecystectomy is now the gold standard for the treatment of gallstones.
- Most commonly performed Minimal Access Surgery by General surgeons
- Gall stone disease affects 23.3% population worldwide



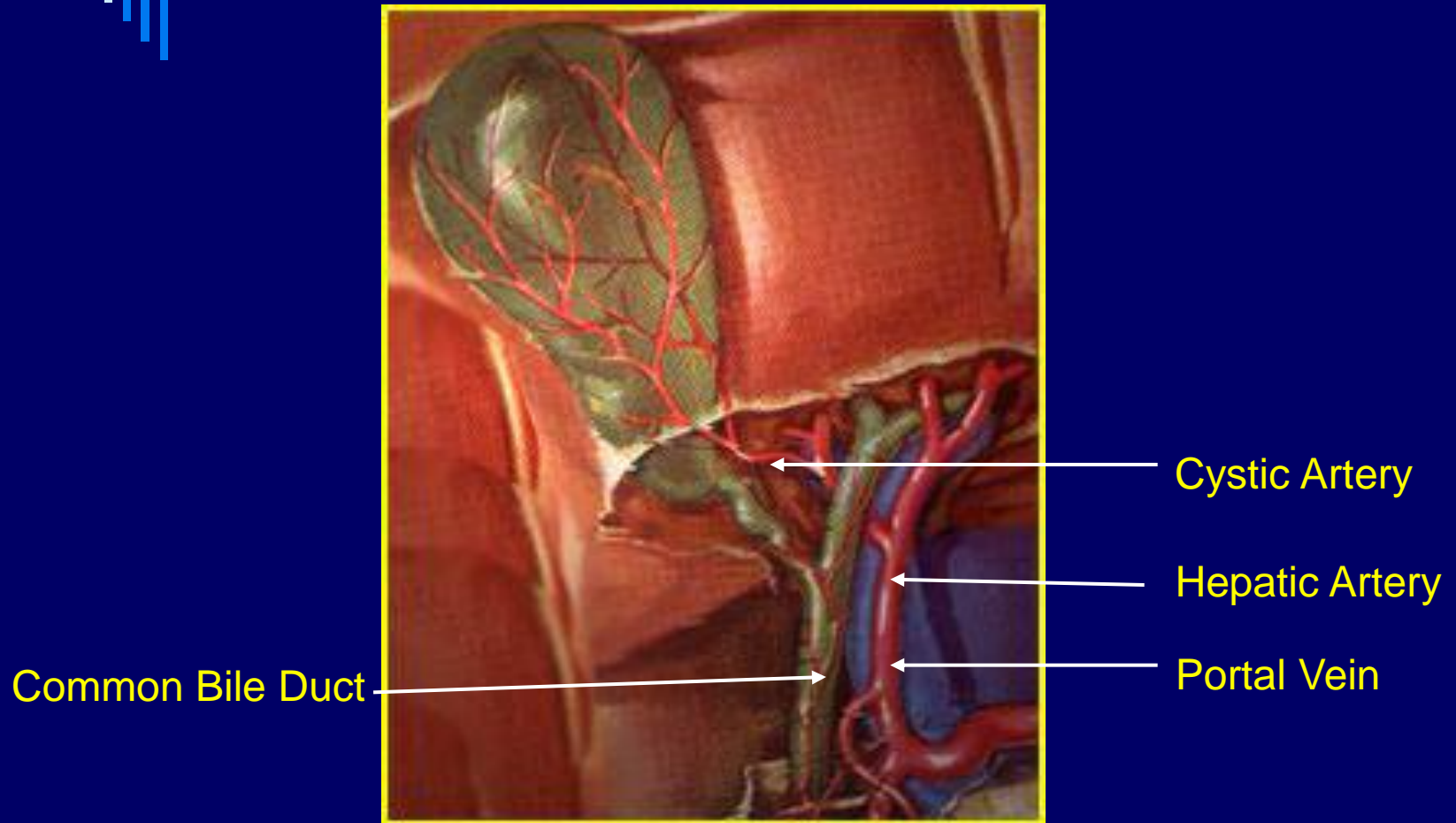


INDICATIONS

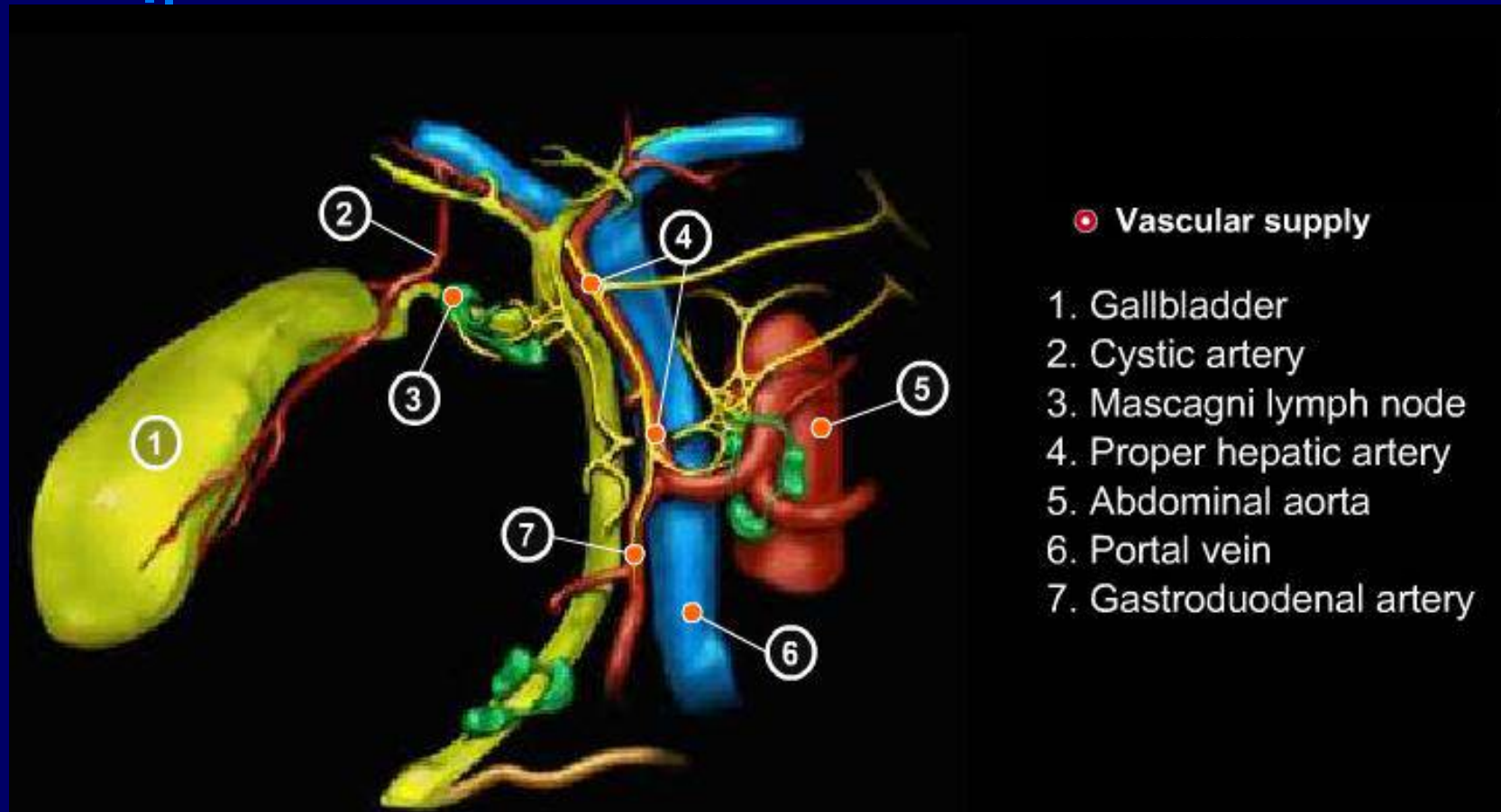
- ☐ Cholelithiasis
- ☐ Mucocele
- ☐ Empyema gall bladder
- ☐ Cholesterosis
- ☐ Typhoid carrier
- ☐ Porcelain gallbladder
- ☐ Acute cholecystitis
- ☐ Adenomatous gall bladder polyps
- ☐ As part of Whipple's procedure



Surgical Anatomy



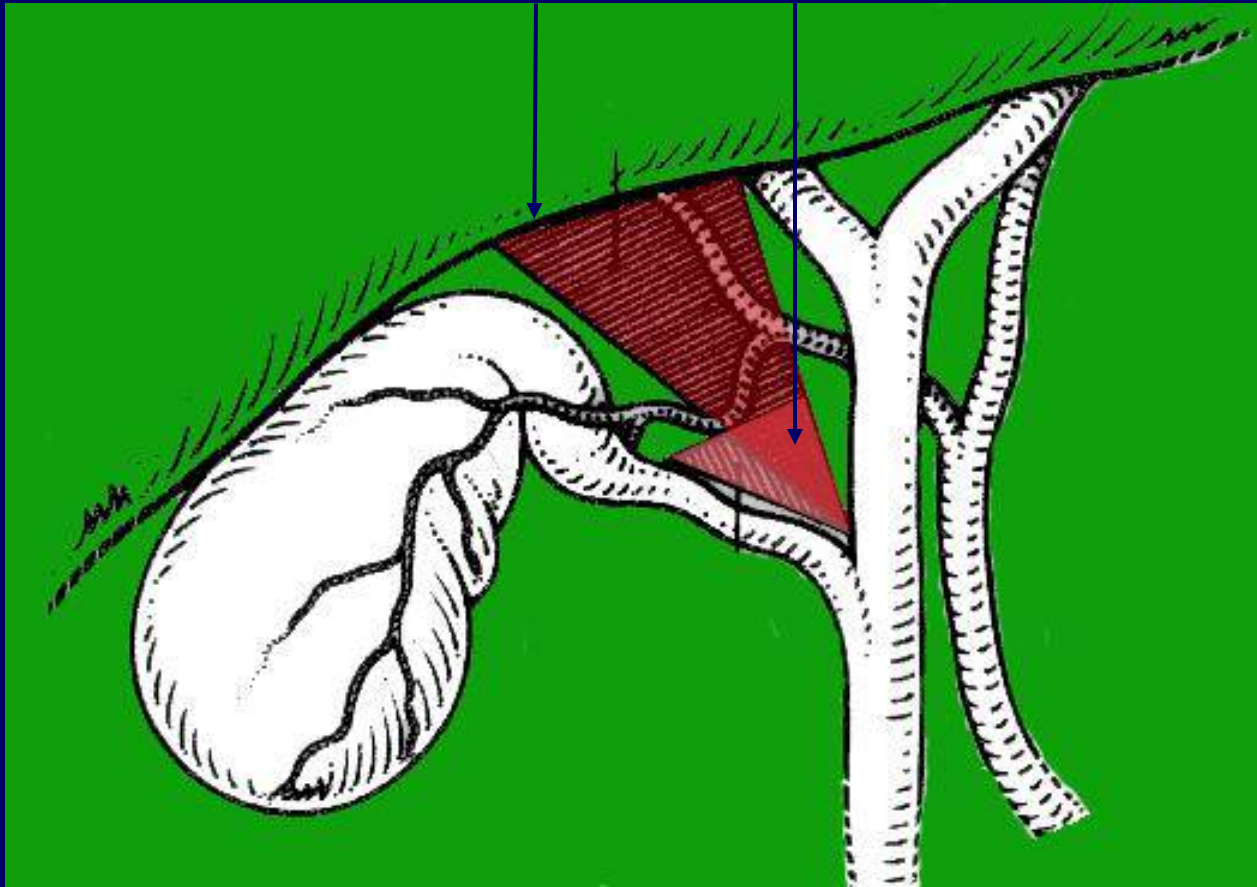
Topographic Anatomy



Surgical Anatomy

▲ of Cholecystectomy

▲ Calot's



American School Position



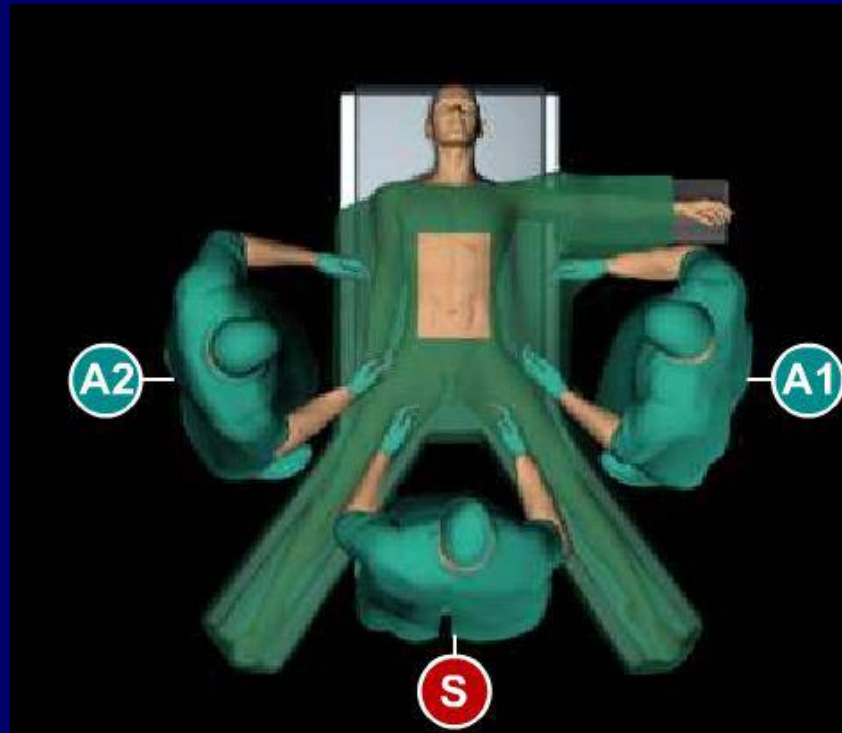
In American Position Surgeon stand left to patient



American Position



French Position

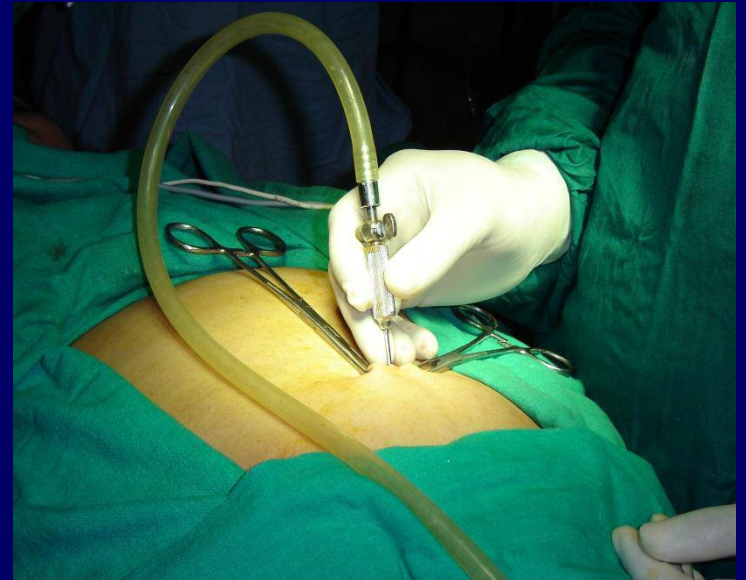


In French Position Surgeon stand between the leg of the patient



Creation of Pneumoperitoneum

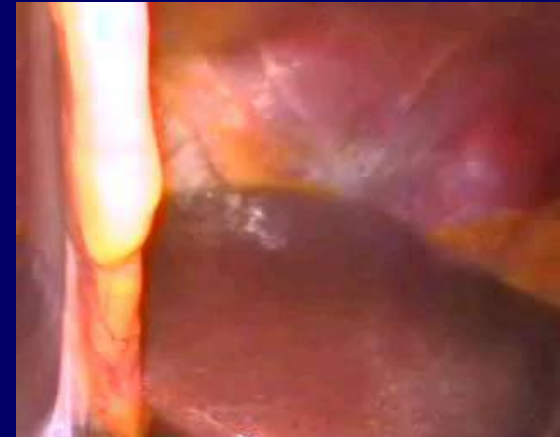
- ❑ 10-20 degree head down
- ❑ 10 mm trans-umbilical incision
- ❑ Lift abdominal wall & insert Veress needle at 45 degree elevation angle
- ❑ Start insufflation at 1litre/minute



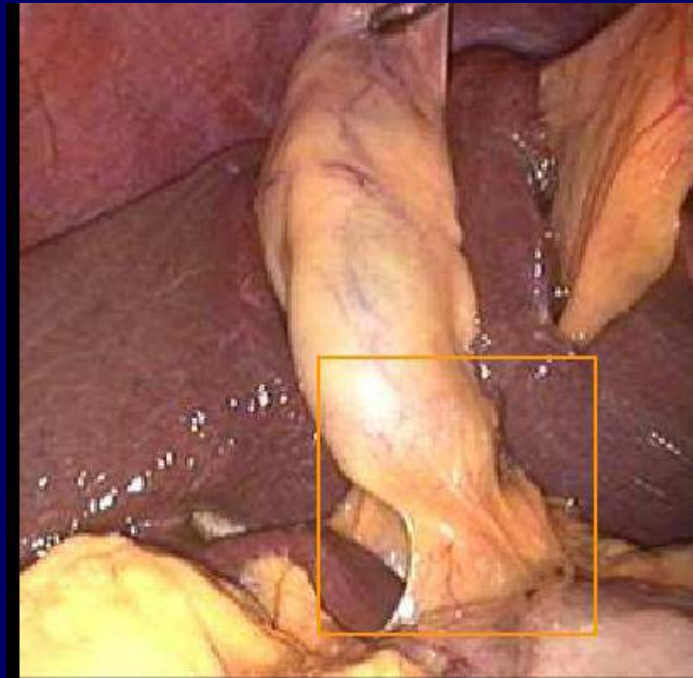
Port insertion

□ Position:

- 1st 10mm Umbilical for telescope
- 2nd 10mm Left Epigastric
- 3rd 5mm right hypochondriac for operating instrument
- 4th 5mm port in right hypochondrium 5 cm lateral to third port for Fundus traction



Retraction of Gallbladder



Proper exposure of Cystic Pedicle is required



Traction & Lysis of Adhesion

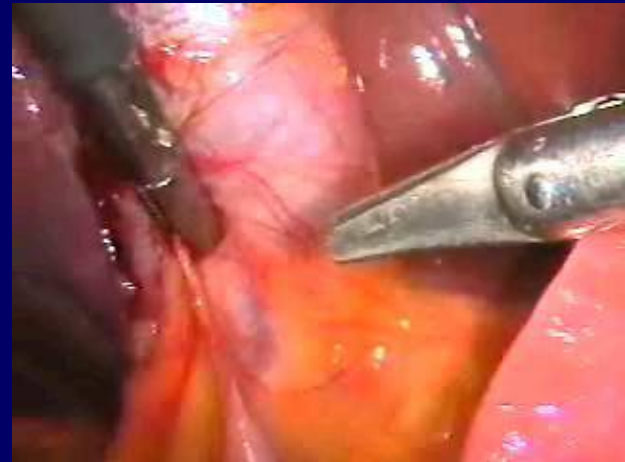


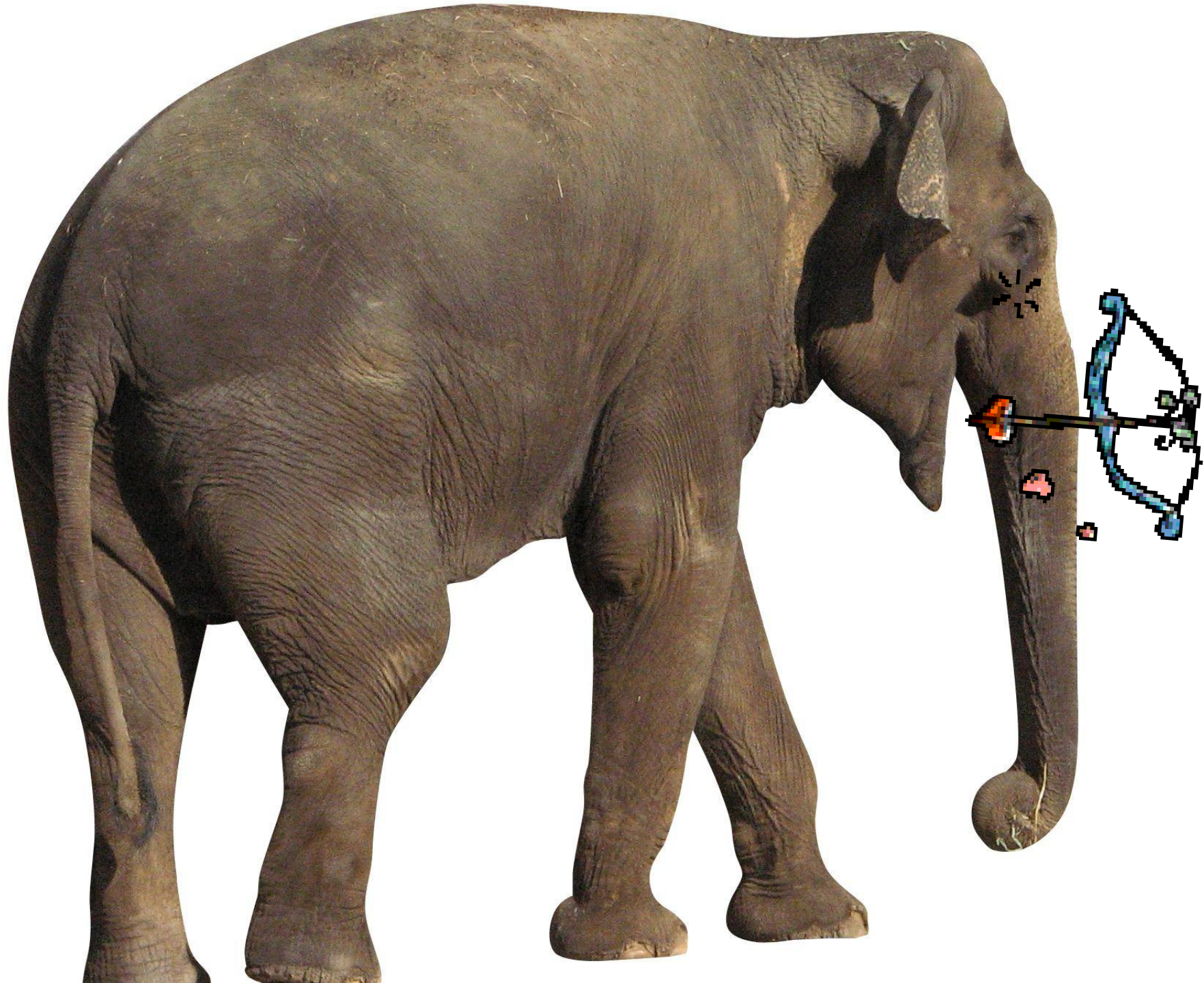
Hook can be used for adhesiolysis



Traction & Lysis of Adhesion

- Dissection starts on the anterior edge of Hartmann's pouch
- Peritoneum of the superior leaf of the cystic pedicle is divided superficially as far back as the liver by pledget, Scissors, Hook or Maryland.





Traction & Lysis of Adhesion

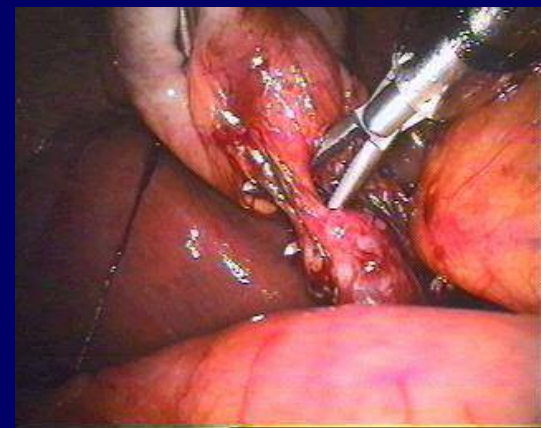
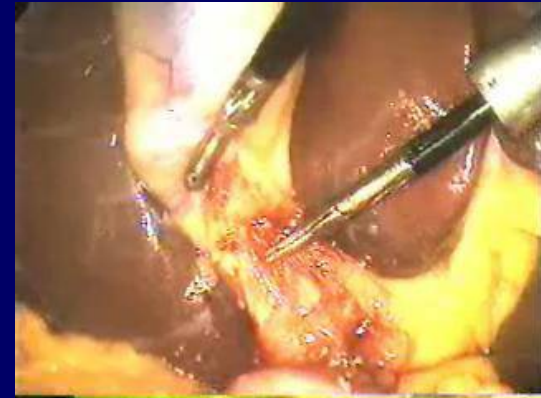


Scissors Dissection with Monopolar current



Dissection of Cystic Pedicle

Separation of the cystic duct anteriorly from the cystic artery performed by opening the jaw of Maryland.



Overshooting is dangerous

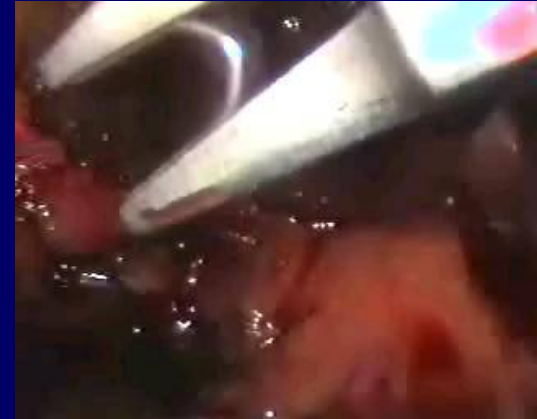


During hook dissection principles of electrosurgery should be kept in mind

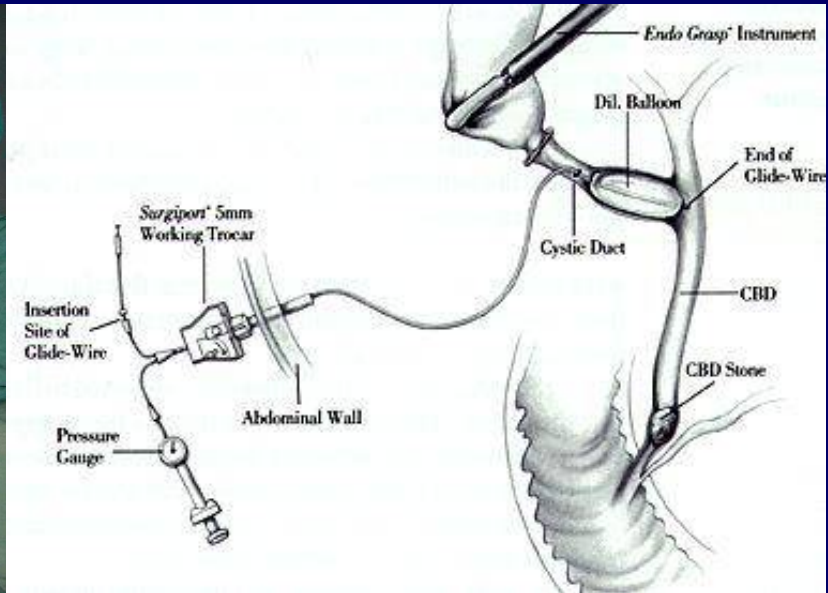


Clipping of cystic artery

- Two clips are placed proximally on the cystic artery
- Cystic artery is clipped and then divided by hook scissors
- Artery is then grasped with a grasper on the gallbladder wall and then divided distal to the clips



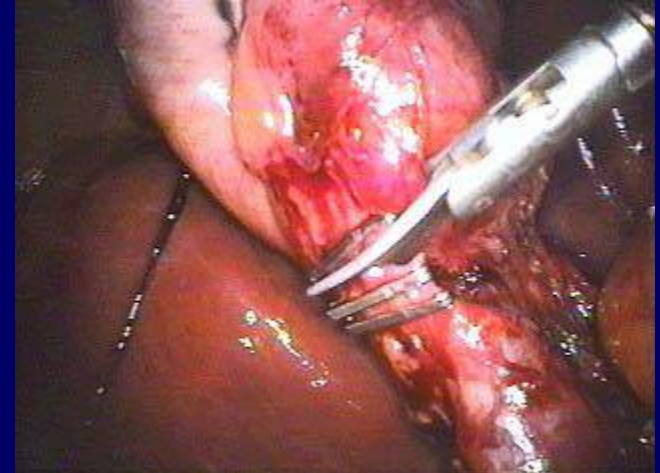
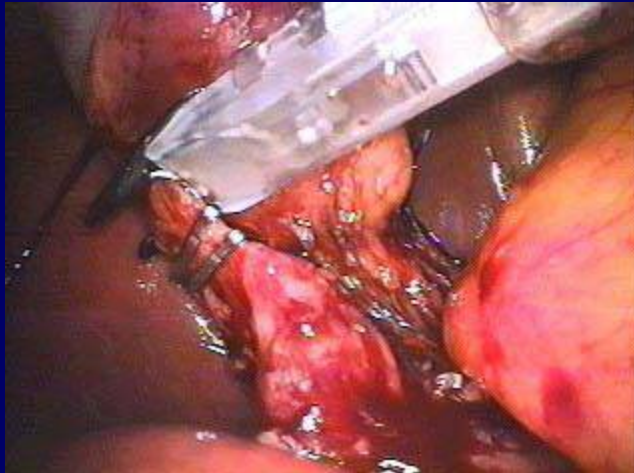
Operative Cholangiogram



Operative Cholangiogram should be routine



Clipping of cystic duct & artery



Clipping of cystic duct followed by dissection

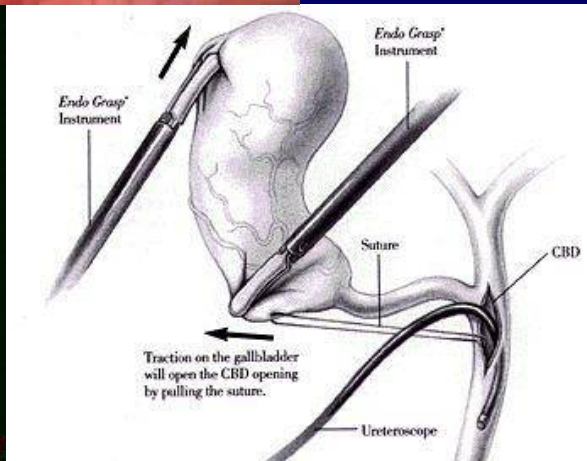
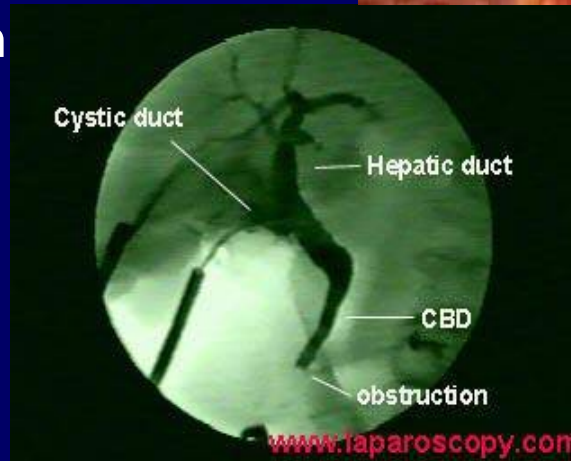


Operative Cholangiogram

Cholangiography Should Be Routine, Not Selective

(JAMA. 2003;289:1639-1644, 1691-1692)

- Insertion of ureteric catheter by correct alignment of cystic duct and saline infusion
- Contrast medium injected & the patient should be in trendelenberg position

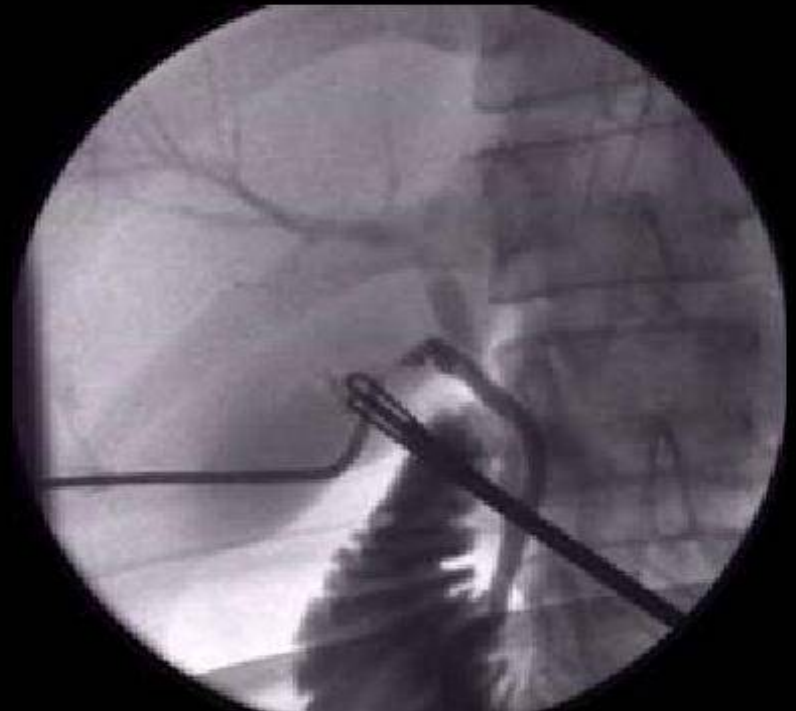


Intra-operative Cholangiogram

CBD stones



Obstruction of CBD



Normal Cholangiogram

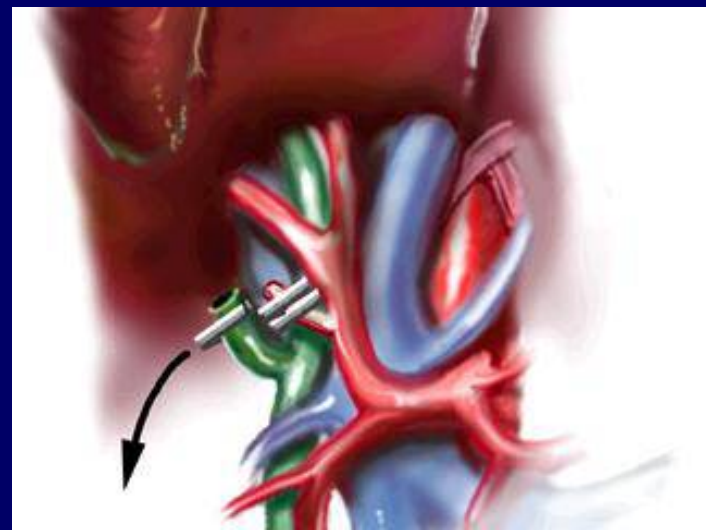
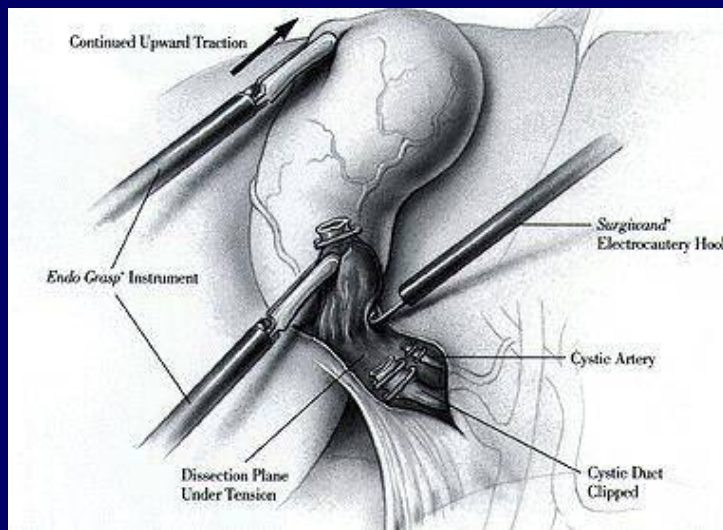


Ligation of Cystic Duct

- Roeder or Meltzer extracorporeal slip knot is used
- *Clipping though easy but unsafe because of reports of internalization of clip and formation of Cat eye stones*



Dissection of Gallbladder from Bed



Anterolateral traction helps in proper dissection
of gallbladder from gallbladder bed

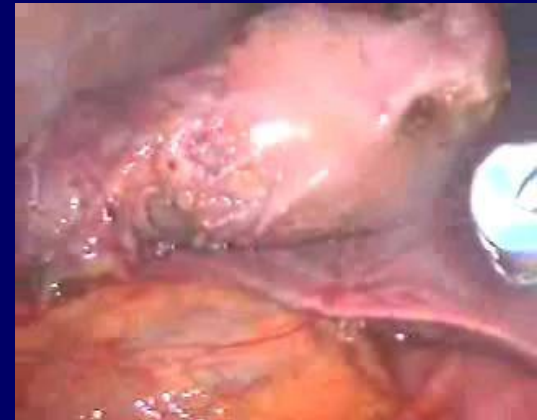
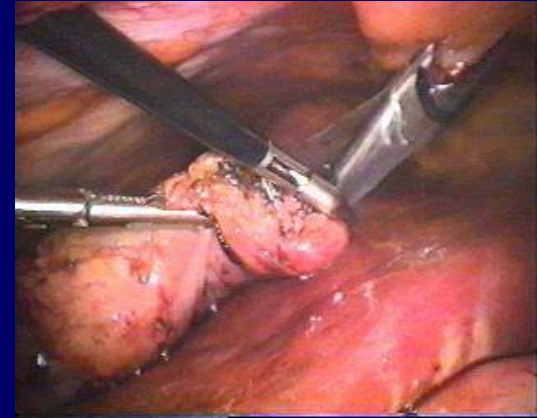


Dissection of Gallbladder



Extraction of Gallbladder

- The gallbladder is extracted through the 11.0mm operating port inside a bag
- Extraction inside a bag is recommended as a safeguard against stone loss and contamination of the exit wound



Extraction of Gallbladder with
gentle traction



Extraction of Gallbladder



Incision of neck of GB to suck the bile for Extraction of Gallbladder



Extraction of Gallbladder

Suction of Gallbladder to empty it helps in extraction of gallbladder



Extraction of Gallbladder

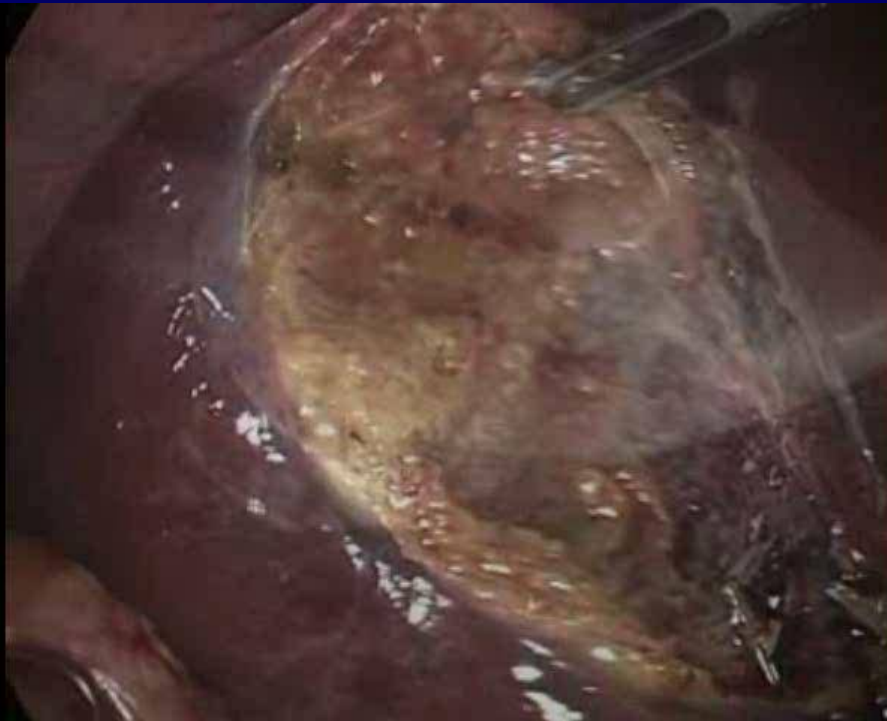
Ovum forceps
should be used
to extract stones
from inside the
gallbladder



Extracted Gallbladder



Extracted gallbladder with stones



Endobag for taking stone out

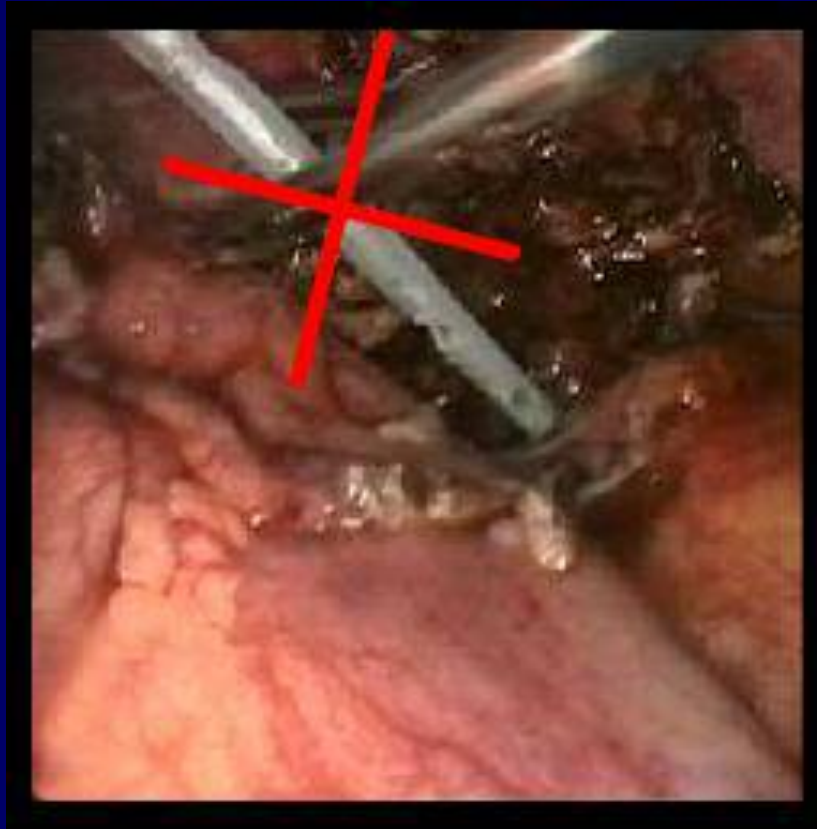


Ending of the operation

- ❑ Abdomen should be examined for any possible bowel injury or haemorrhage
- ❑ Remove the Instrument and then port
- ❑ Remove telescope leaving gas valve of umbilical port open
- ❑ Remove port carefully and close the port wound



Routine application of drainage tube is not required



Laparoscopic Cholecystectomy



Video of laparoscopic cholecystectomy



Two port Cholecystectomy



Two port cholecystectomy is possible
in the hand of experienced surgeon



Two port Cholecystectomy



We have developed new two port technique, First time telecasted on our National News Channel.



Two Port Cholecystectomy



Strategically passed extracorporeal knot helps in two port laparoscopic cholecystectomy



Two Port Cholecystectomy



The suture can be pulled from outside to give proper exposure during dissection of gallbladder from bed.



Two Port Cholecystectomy



Gallbladder can be taken out from 10 mm epigastric port



Two Port Cholecystectomy



Video of two port cholecystectomy



Thank You



R.K. Mishra's Course in Istanbul, Turkey