

# Protocolo anestésico en cirugía de vías biliares

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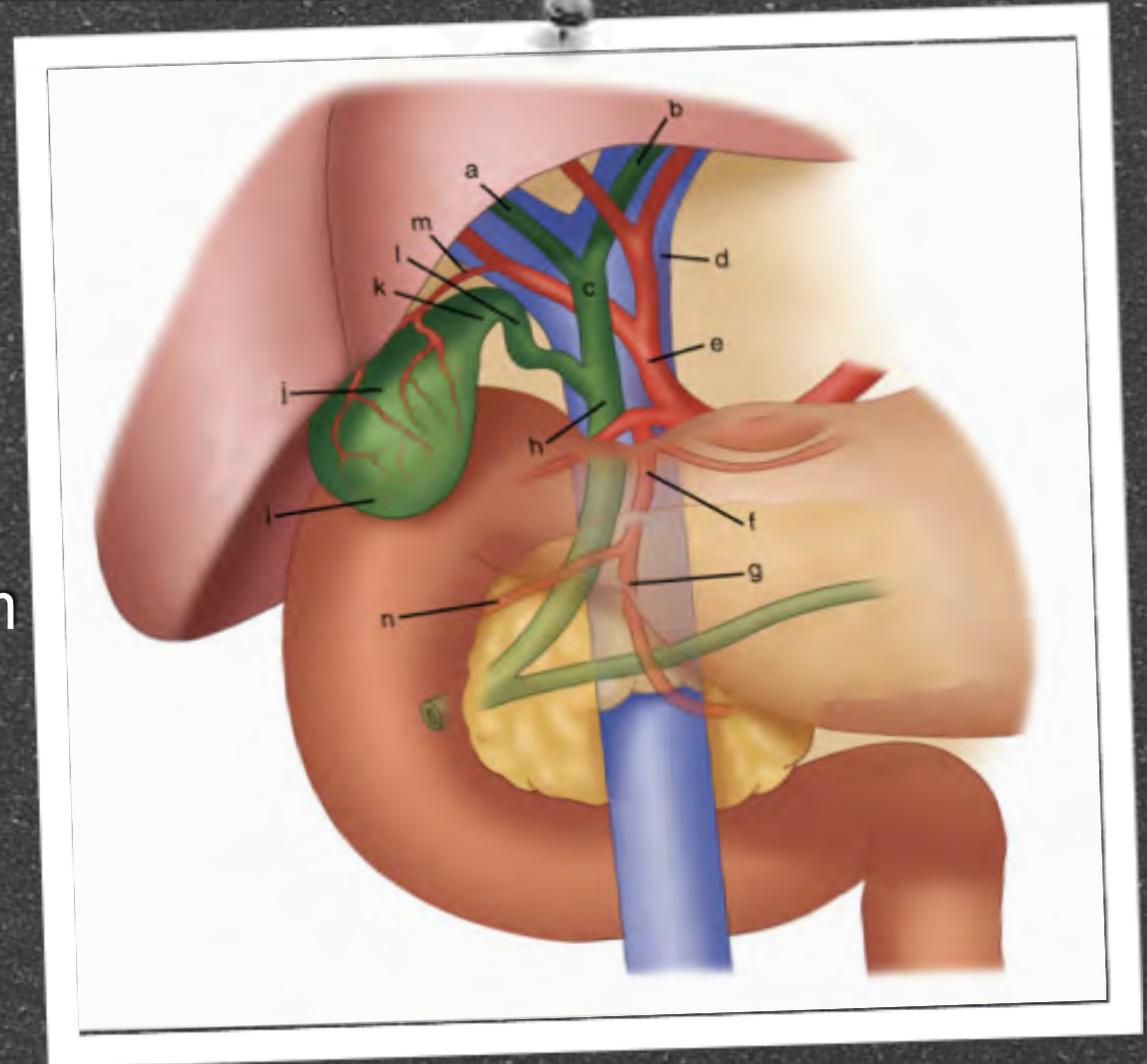
Servicio de Anestesia Reanimación y Tratamiento del Dolor  
Consorcio Hospital General Universitario de Valencia



# Anestesia en cirugía de vías biliares

## Anatomía

- Conductos hepáticos derecho e izquierdo
- Conducto hepático común
- Conducto cístico
- Colédoco



# Anestesia en cirugía de vías biliares

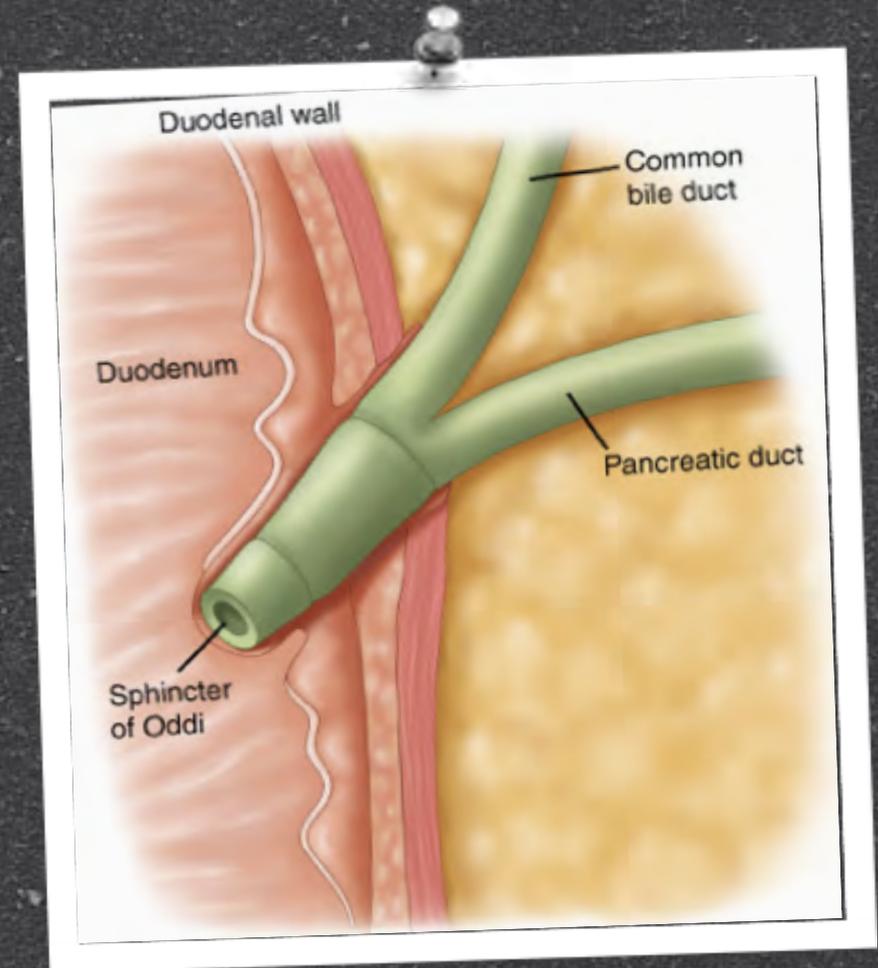


# Anestesia en cirugía de vías biliares

- Fisiología

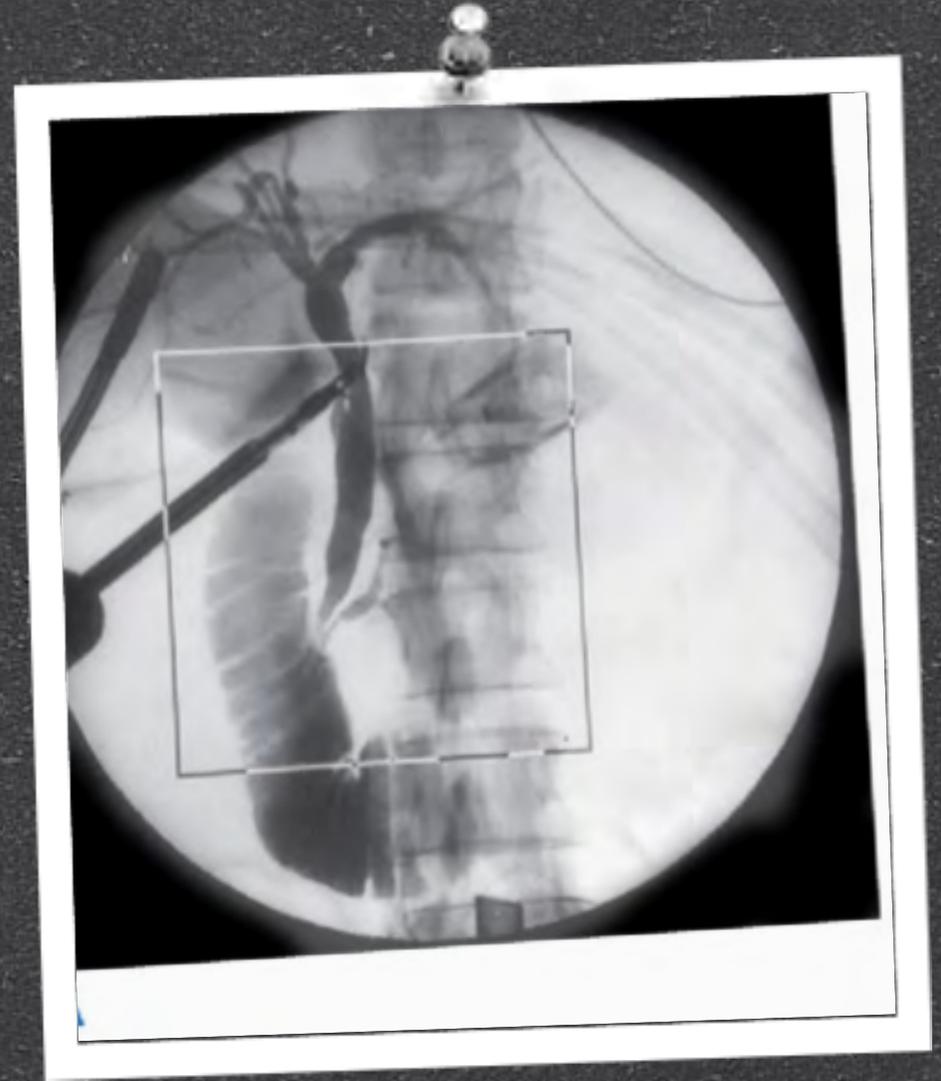
- Producción aproximada de 500 a 1000 ml de bilis al día

- Secreción: estímulos neurógenos, humorales y químicos



# Anestesia en cirugía de vías biliares

- Diagnóstico de patología biliar
- Ultrasonografía
- TAC y RMN
- CPRE y ultrasonido endoscópico
- Colecistografía oral, gammagrama HIDA, colangiografía transhepática percutánea



# Anestesia en cirugía de vías biliares

- Cálculos biliares
- Prevalencia: 11-36% en necropsias y varía con edad, sexo, obesidad, dieta, embarazo...
- ♀:♂ → 3:1



# Anestesia en cirugía de vías biliares

- Colecistitis crónica

- Dolor en hipocondrio derecho recurrente.
- Tratamiento: colecistectomía laparoscópica.

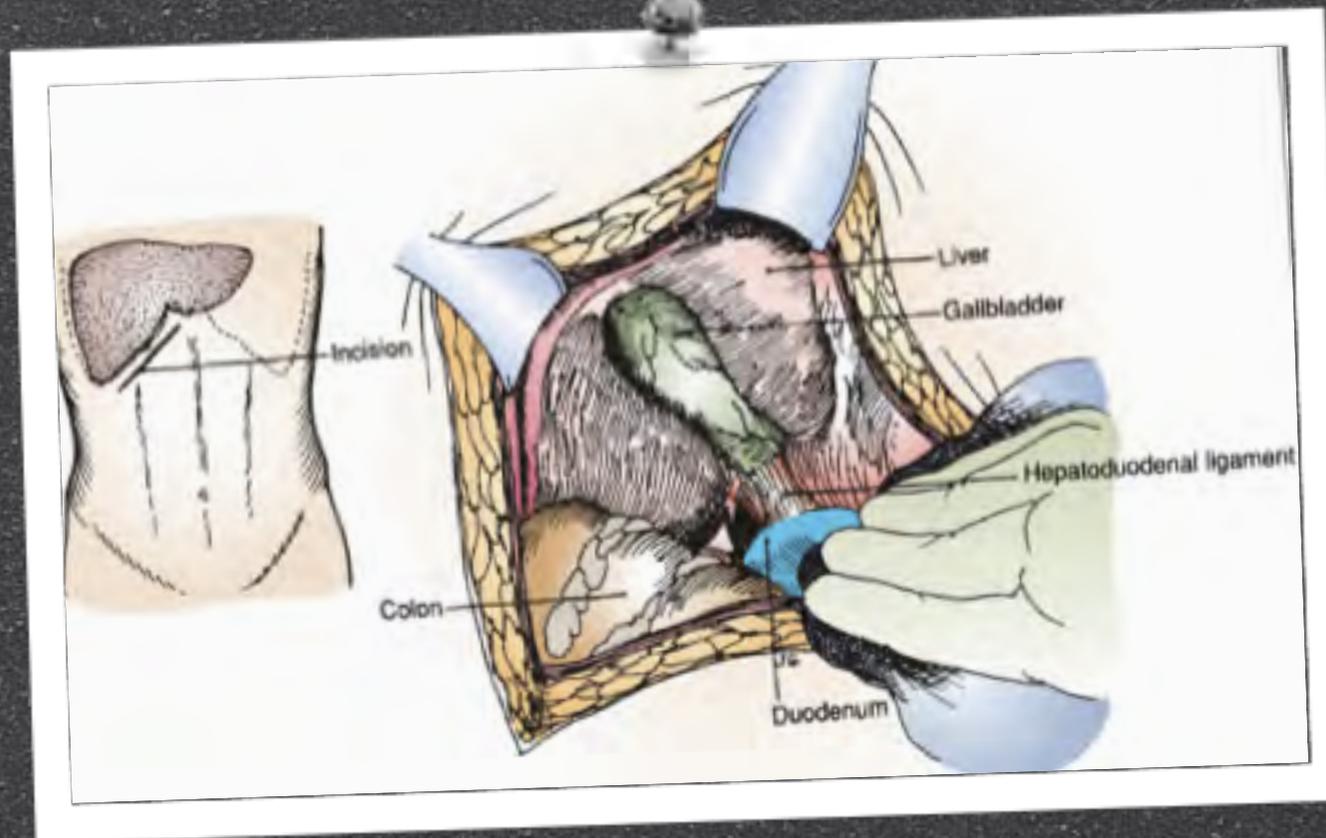
- Colecistitis aguda

- 90-95% secundaria a obstrucción del conducto cístico, produciendo distensión de la vesícula, inflamación y edema de pared.
- Dx: ecografía (sensibilidad y especificidad del 95%).
- Tto: colecistectomía de urgencia, preferiblemente laparoscópica.
- Colecistostomía percutánea.



# Anestesia en cirugía de vías biliares

- Colecistectomía abierta



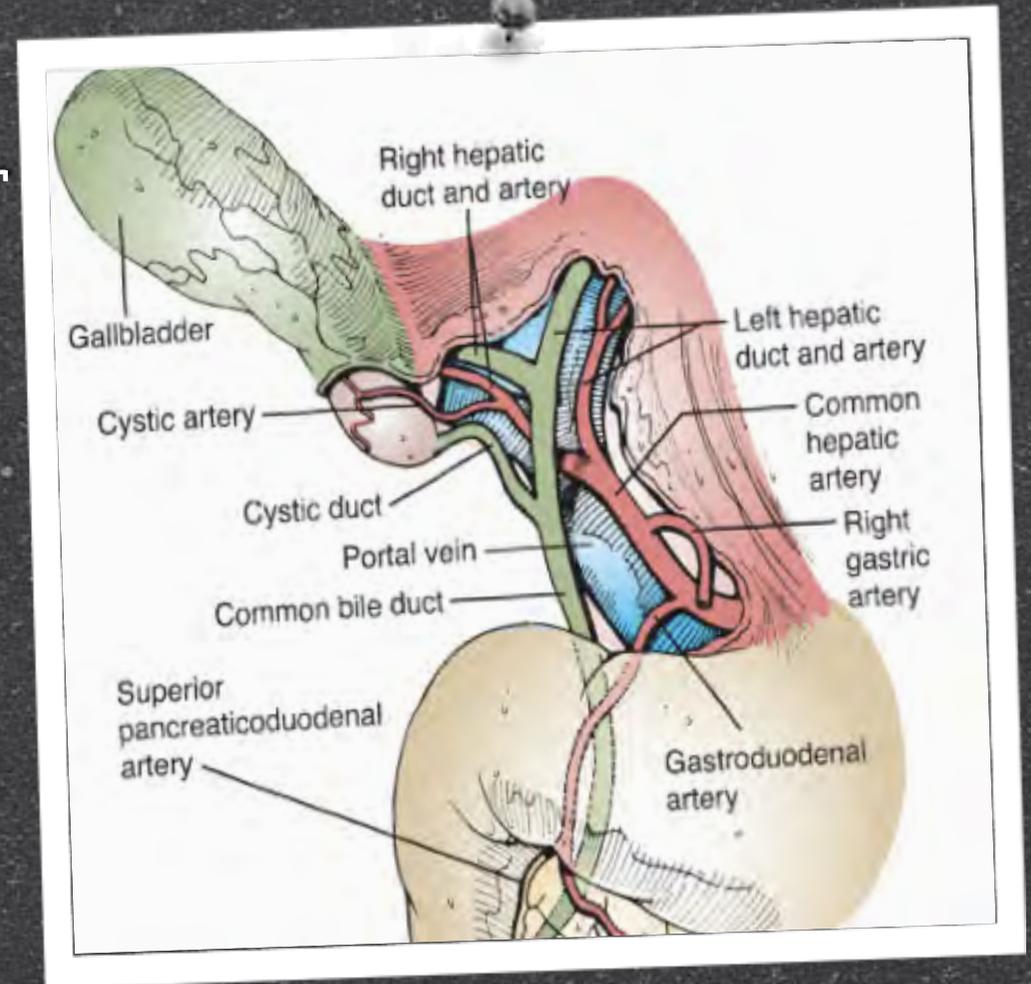
# Anestesia en cirugía de vías biliares

- Colecistectomía laparoscópica

- Porcentaje de reconversión menor del 5% en procedimientos electivos y menor de 10% en colecistitis aguda y abdomenes con intervenciones previas.

- Colangiografía intraoperatoria electiva.

- Consideraciones propias de la laparoscopia.



# Anestesia en cirugía de vías biliares

Consideraciones anestésicas

Colecistectomía abierta

Colecistectomía laparoscópica

Posicionamiento

Supino

Supino, anti-Trendelenburg y lateral izquierdo

Incisión

Subcostal derecha

Umbilical y supraumbilicales

Dolor postoperatorio

6

3

Consideraciones especiales

Mayor morbimortalidad

Propias de cirugía laparoscópica



# Anestesia en cirugía de vías biliares

Consideraciones anestésicas

Colecistectomía abierta

Colecistectomía laparoscópica

Respiratorias

Aumento de complicaciones respiratorias postoperatorias como atelectasias y neumonías

↓CRF, ↑Presión pico, atelectasias basales, ↑PaCO<sub>2</sub> y ↓PaO<sub>2</sub>

Hemodinámicas

Propias de la anestesia

↑Postcarga y ↓Precarga con ↓GC

Sangrado intraoperatorio

<500 ml

<250 ml



# Anestesia en cirugía de vías biliares

*Anaesthesia*. 2011 Aug;60(8):723-8. Epub 2011 Feb 26.

## **Different anesthesia methods for laparoscopic cholecystectomy.**

Liu X, Wei C, Wang Z, Wang H.

Department of Anesthesiology, 309th Hospital of PLA, Beijing, China. sci2002@163.com

**Objectives.** The aim of the study was to compare the possibility of performing laparoscopic cholecystectomy using two different anesthesia procedures (spinal anesthesia versus general anesthesia).

**Methods.** The study included 68 patients with symptoms of cholelithiasis examined in the 309th Hospital of PLA from 2006 to 2009. Patients were randomly selected to undergo laparoscopic cholecystectomy with low tension pneumoperitoneum with CO<sub>2</sub> under general anesthesia (n=33) or spinal anesthesia (n=35). The study used propofol, fentanyl, rocuronium, sevoflurane and tracheal intubation for general anesthesia and hyperbaric 15 mg bupivacaine and 20 µg fentanyl were used to achieve a sensorial level of T<sub>3</sub> for spinal anesthesia. Intraoperative parameters, postoperative pain, complications, recovery,

**Results.** All surgical procedures were completed with the chosen method with the exception of one case, in which spinal anesthesia was converted to general anesthesia. Shoulder pain was significantly less frequent in the spinal anesthesia group (6%) compared with the general anesthesia group (24%). The level of pain at 2, 4, and 6 h after the procedure under spinal anesthesia was significantly lower than that under general anesthesia. At 12 h both groups had the same evaluation in the visual analogue scale. In the spinal anesthesia group all patients recovered 6 h after surgery, while patients in the general anesthesia group spent more time in recovery. All patients were discharged from hospital after 24 h. In the postoperative



## Experience of Laparoscopic Cholecystectomy Under Spinal Anesthesia with Low-pressure Pneumoperitoneum - Prospective Study of 300 Cases

Manoranjan Kar, Jugal K. Kar,<sup>1</sup> and Bibhas Debnath<sup>2</sup>

**MATERIALS AND METHODS:** In a private rural health set-up, 300 patients were selected prospectively for laparoscopic cholecystectomy under low-pressure (8 mm) pneumoperitoneum under spinal anesthesia in a span of three years. Only 3.5 ml of 0.5% bupivacaine was used for spinal anesthesia. Fourth port positioned at lower than usual at the level of umbilicus, change of position of the table with different stages of operation, massaging of right shoulder in cases of shoulder pain, removal of smoke if formed during dissection to diminish shoulder pain and holding the body of the gallbladder by the fourth port grasper at the level of lower margin of the liver in cases of long gallbladder were some modifications of standard laparoscopic cholecystectomy made in this study.

**RESULTS:** We successfully performed the operations in 291 patients without major complications. Four patients denied operation under spinal anesthesia. Spinal anesthesia was converted to general anesthesia in two patients due to severe shoulder pain. The operation was converted to open cholecystectomy in three patients. Mean age was 34.6 years (range 21-82 years). Mean BMI was -23.1 (range 20.8-28.3). Mean duration of operation was 39.6 min (range 18-78 min). Mean O<sub>2</sub> saturation was 97.6%. Mean peak respiratory rate was 23.4 (range 16-38). 90.08% patients complained of right shoulder pain—most of them managed by shoulder massage alone. All patients were satisfied on follow up.

## General anesthesia versus spinal anesthesia for laparoscopic cholecystectomy.

Imbelloni LE, Fornasari M, Fialho JC, Sant'Anna R, Cordeiro JA.

Hospital Rio Laranjeiras, Rio de Janeiro, RJ.

**METHODS:** Between July 2007 and September 2008, 68 patients with symptoms of cholelithiasis were included in this study. Patients with physical status ASA I and II were randomly divided to undergo laparoscopic cholecystectomy with low-tension pneumoperitoneum with CO<sub>2</sub> under general anesthesia (n = 33) or spinal anesthesia (n = 35). Propofol, fentanyl, rocuronium, sevoflurane, and tracheal intubation were used for general anesthesia. Hyperbaric bupivacaine 15 mg, and fentanyl 20 microg to achieve a sensorial level of T(3) were used for the spinal anesthesia. Intraoperative parameters, postoperative pain, complications, recovery, patient satisfaction, and cost were compared between both groups.

**RESULTS:** All surgical procedures were completed with the chosen method and spinal anesthesia was converted to general anesthesia only in one patient. Pain was significantly lower at 2, 4, and 6 hours after the procedure under spinal anesthesia. The cost of the spinal anesthesia was significantly lower than that of the general anesthesia. All patients were discharged after 24 hours. In the postoperative evaluation, all patients were satisfied with the spinal anesthesia and would recommend this procedure.



# Anestesia Neuroaxial??

*Kathmandu Univ Med J (KUMJ)*, 2009 Oct-Dec;7(28):360-8.

## Spinal anaesthesia for laparoscopic cholecystectomy: a feasibility and safety study.

Gautam B.

Department of Anaesthesiology and Intensive Care, Kathmandu Medical College, Sinamangal, Nepal. bsurifambhior1@hotmail.com

*J Laparoscopic Adv Surg Tech A*, 2010 Jul-Aug;20(6):515-20.

## Laparoscopic cholecystectomy under spinal versus general anesthesia: a prospective, randomized study.

Bessa SS, El-Sayes JA, El-Salehi MK, Abdel-Baki NA, Abdel-Maksoud MM.

Department of General Surgery, University of Alexandria, Alexandria, Egypt. samerbessa@gmail.com

*Rev Bras Anestesiol*, 2010 May-Jun;60(3):217-27.

## General anesthesia versus spinal anesthesia for laparoscopic cholecystectomy.

Imbelloni LE, Formassari M, Fialho JC, Sant'Anna R, Condeiro JA.

Hospital Rio Laranjeiras, Rio de Janeiro, RJ.

*Saudi J Gastroenterol*, 2011 May-Jun; 17(3): 203-207.  
doi: 10.4103/1319-3767.80365

PMCID: PMC3122062

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## Experience of Laparoscopic Cholecystectomy Under Spinal Anesthesia with Low-pressure Pneumoperitoneum - Prospective Study of 300 Cases

Manoranjan Kar, Jugal K. Kar,<sup>1</sup> and Bibhas Debnath<sup>2</sup>

*J Coll Physicians Surg Pak*, 2011 Nov;21(11):654-8.

## Thoracic epidural anaesthesia for open cholecystectomy.

Zahoor MU, Masroor R, Khurshid T, Azhar R, Amljad Yasin MM.

Department of Anaesthesia and Intensive Care, Combined Military Hospital (CMH), Skardu.

*Soc East J Anaesth*, 2011 Nov;13(11):611-4.

## Effective awake thoracic epidural anesthetic for major abdominal surgery in two high-risk patients with severe pulmonary disease—a case report.

Abd Elmazek E, Thomson M, Lannigan A.

## Clinical Research Article

*Korean J Anesthesiol* 2010 December 59(6): 383-390  
DOI: 10.4097/kjae.2010.59.6.383

*Anaesthesia*, 2011 Aug;60(8):723-8. Epub 2011 Feb 26.

## Different anesthesia methods for laparoscopic cholecystectomy.

Liu X, Wei C, Wang Z, Wang H.

Department of Anesthesiology, 309th Hospital of PLA, Beijing, China. sci2002@163.com

## Laparoscopic cholecystectomy under epidural anesthesia: a clinical feasibility study

Ji Hyun Lee<sup>1</sup>, Jin Huh<sup>2</sup>, Duk Kyung Kim<sup>2</sup>, Jea Ryoung Gil<sup>3</sup>, Sung Won Min<sup>3</sup>, and Sun Sook Han<sup>1</sup>

Department of Anesthesiology and Pain Medicine, <sup>1</sup>Seoul National University Hospital, <sup>2</sup>Konkuk University Hospital, <sup>3</sup>Boramae



# Anestesia en cirugía de vías biliares

- Pacientes que no toleren anestesia general bajo laparoscopia (broncopatía y cardiopatía) ????
- Nivel sensitivo T3
- Disnea
- Dolor hombro derecho



**The analgesic effect of the ultrasound-guided transverse abdominis plane block after laparoscopic cholecystectomy**

Yoon Suk Ita, Chi Hyo Kim, Gae Yong Lee, and Jong In Han

Department of Anesthesiology and Pain Medicine, School of Medicine, Yonsei University, Seoul, Korea

**Methods:** Fifty-four patients undergoing laparoscopic cholecystectomy were randomized into three groups. The patients in Group Control did not receive the US-TAP block. The patients in Group B<sub>0.25</sub> and Group B<sub>0.5</sub> received the US-TAP block with 0.25% and 0.5% levobupivacaine 30 ml respectively. After the general anesthesia, a bilateral US-TAP block was performed using an in-plane technique with 15 ml levobupivacaine on each side. Intraoperative use of remifentanyl and postoperative demand of rescue analgesics in PACU were recorded. The postoperative verbal numerical rating scale (VNRS) was evaluated at 20, 30, and 60 min, and 6, 12, and 24 hr. Postoperative complications, including pneumoperitoneum, bleeding, infection, and sleep disturbance, were also checked.

**Results:** The intraoperative use of remifentanyl, postoperative VNRS and the postoperative demand of rescue analgesics were lower in the groups receiving the US-TAP block (Group B<sub>0.25</sub> and Group B<sub>0.5</sub>) than Group Control. There were no statistically or clinically significant differences between Group B<sub>0.25</sub> and Group B<sub>0.5</sub>. No complications related to the US-TAP block were observed.

Acta Anaesthesiol Scand, 2010 May;54(5):529-35. Epub 2010 Feb 17.

**The transversus abdominis plane block: a valuable option for postoperative analgesia? A topical review.**

Petersen PL, Mathiesen O, Torup H, Dahl JB.

Department of Anaesthesia, Copenhagen University Hospital, Ndr. Ringvej, DK-2600 Glostrup, Denmark. perille.lykke.petersen@dadnet.dk

The transversus abdominis plane (TAP) block is a newly described peripheral block involving the nerves of the anterior abdominal wall. The block has been developed for post-operative pain control after gynaecologic and abdominal surgery. The initial technique described the lumbar triangle of Petit as the landmark used to access the TAP in order to facilitate the deposition of local anaesthetic solution in the neurovascular plane. Other techniques include ultrasound-guided access to the neurovascular plane via the mid-axillary line between the iliac crest and the costal margin, and a subcostal access termed the 'oblique subcostal' access. A systematic search of the literature identified a total of seven randomized clinical trials investigating the effect of TAP block on post-operative pain, including a total of 364 patients, of whom 180 received TAP blockade. The surgical procedures included large bowel resection with a midline abdominal incision, caesarean delivery via the Pfannenstiel incision, abdominal hysterectomy via a transverse lower abdominal wall incision, open appendectomy and laparoscopic cholecystectomy. Overall, the results are encouraging and most studies have demonstrated clinically significant reductions of post-operative opioid requirements and pain, as well as some effects on opioid-related side effects (sedation and post-operative nausea and vomiting). Further studies are warranted to support the findings of the primary published trials and to establish general recommendations for the use of a TAP block.



# Anestesia en cirugía de vías biliares

Manejo anestésico

Laparoscopia

Colecistectomía x colecistitis aguda  
Monitorización según condiciones del paciente

Abierta

Analgesia  
IV / TAP  
Block

Inducción de secuencia rápida

Profilaxis PONV

Consideraciones especiales en pacientes cardiopatas y broncópatas

Mantenimiento estándar con agentes inh o IV, RM

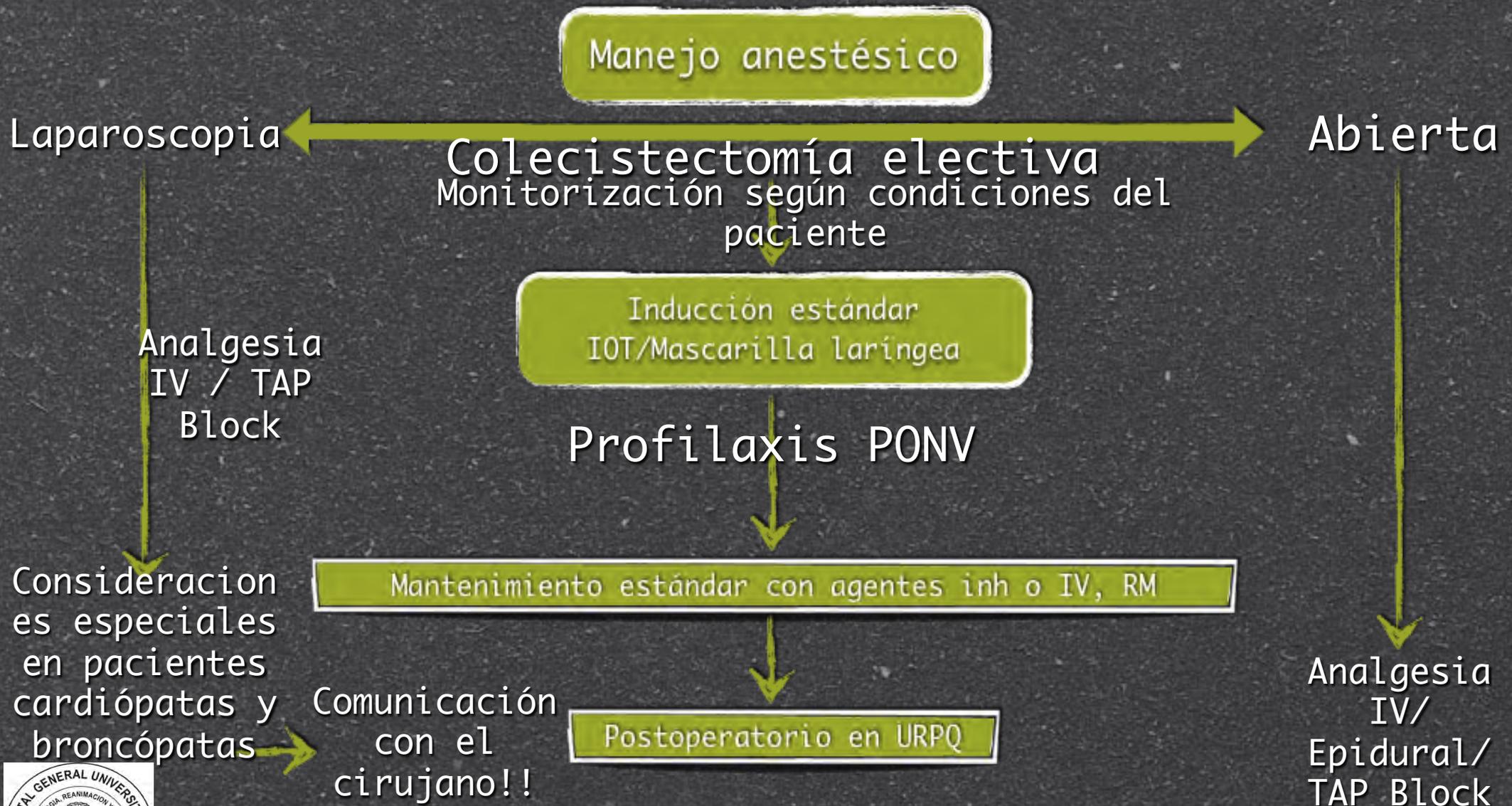
Comunicación con el cirujano!!

Postoperatorio en URPQ

Analgesia  
IV/  
Epidural/  
TAP Block



# Anestesia en cirugía de vías biliares



# Anestesia en cirugía de vías biliares

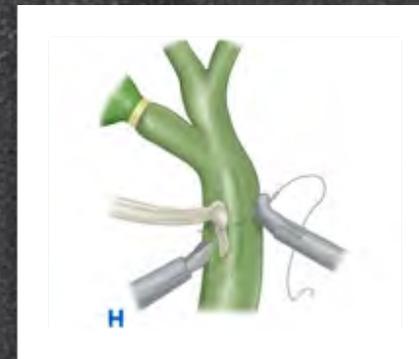
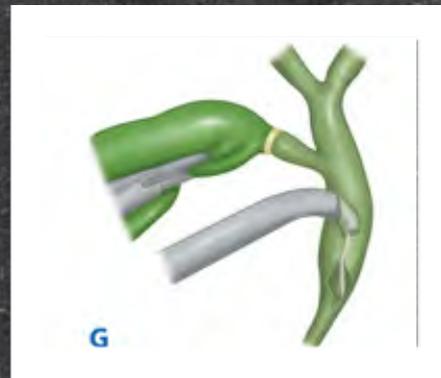
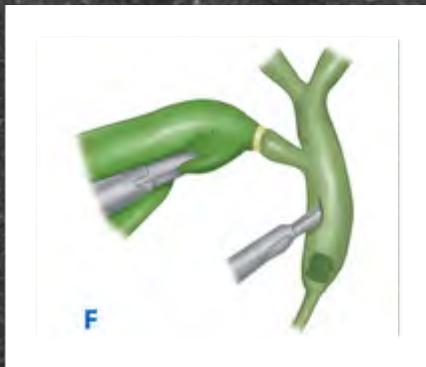
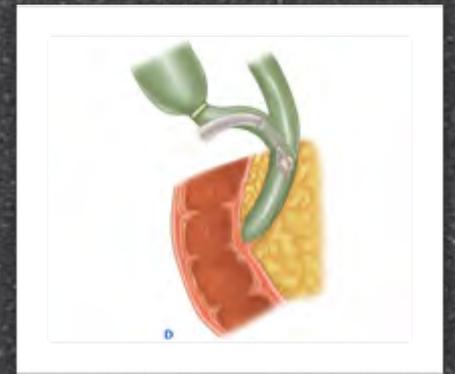
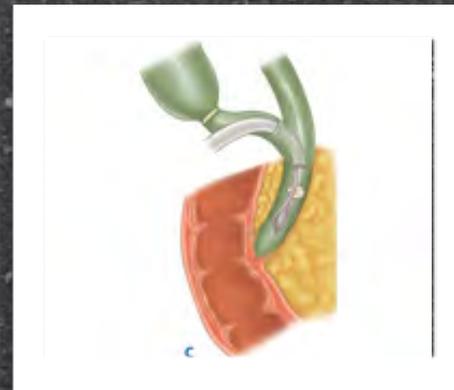
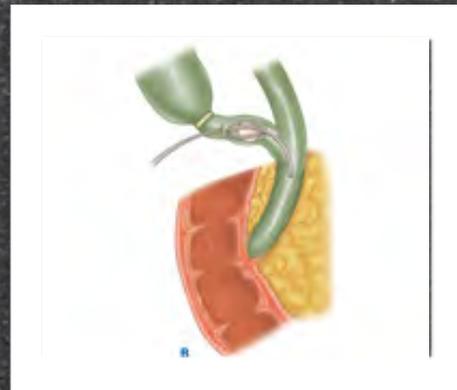
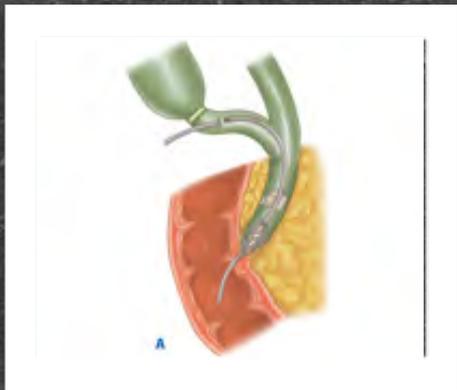
- Coledocolitiasis:

- 6-12% de las personas con cálculos en la vesícula biliar y aumenta con la edad.
- Pueden ser primarios o secundarios.
- Presentación clínica: Dolor similar al de cólico biliar, colangitis o pancreatitis, ictericia transitoria...
- Dx: Ultrasonografía, RMN colangiopancreática y colangiografía endoscópica



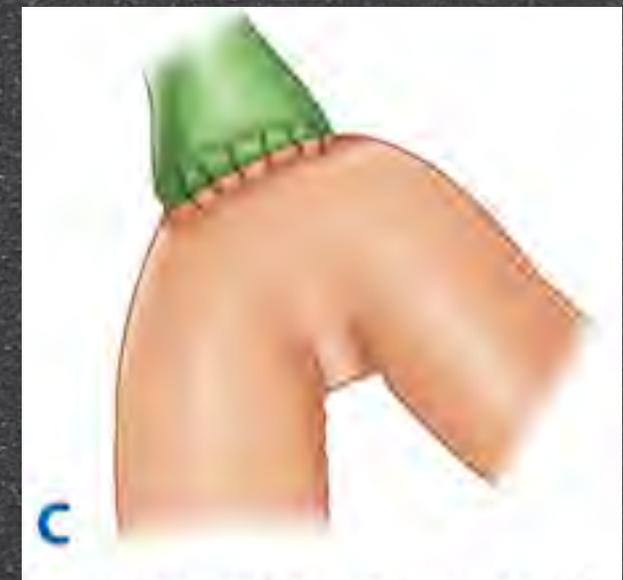
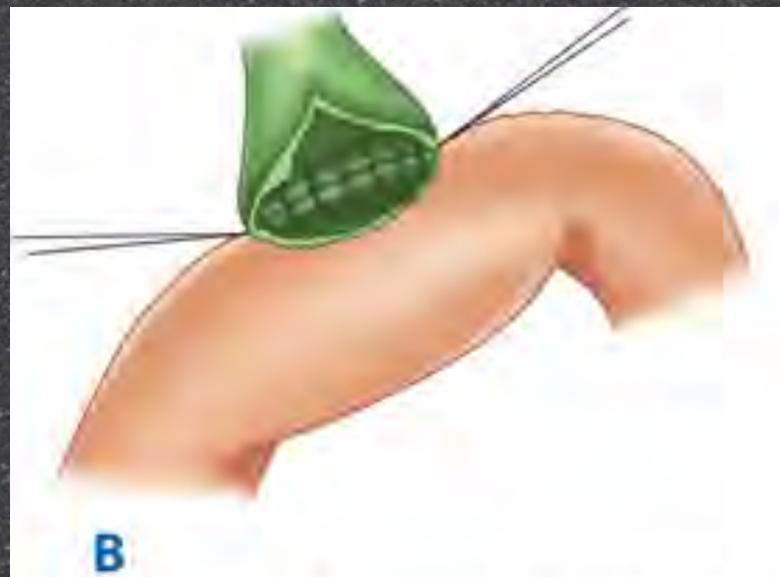
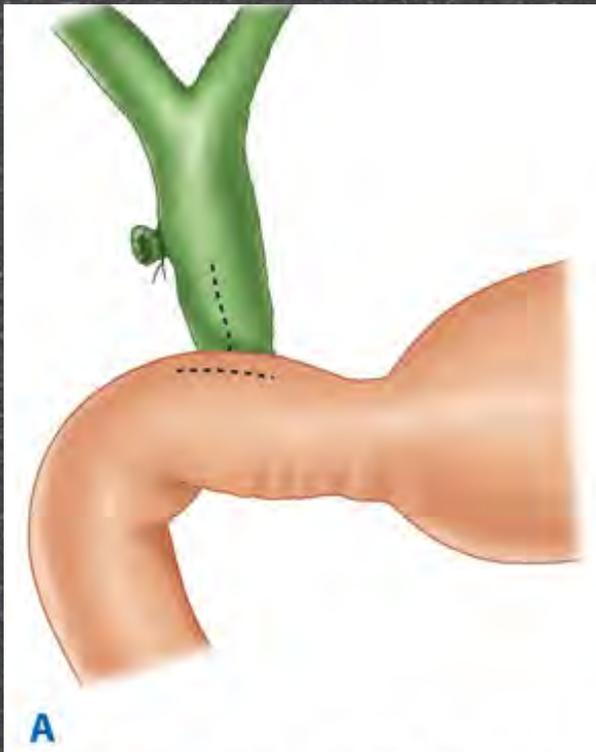
# Anestesia en cirugía de vías biliares

- Exploración del colédoco:
- Hallazgo por colangiografía o ultrasonografía intraoperatoria: Exploración intraoperatoria del colédoco



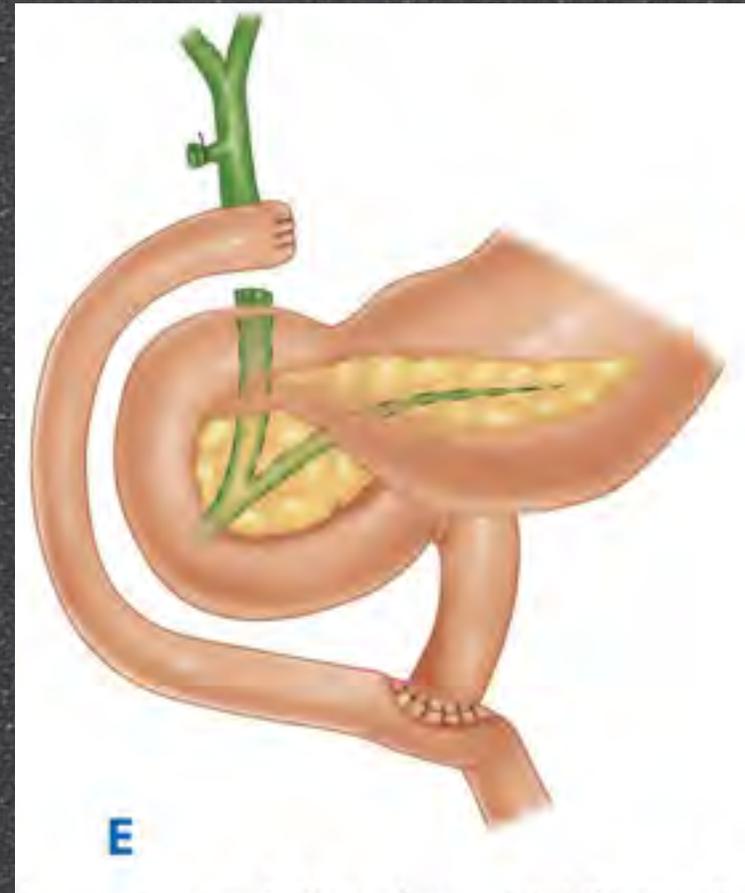
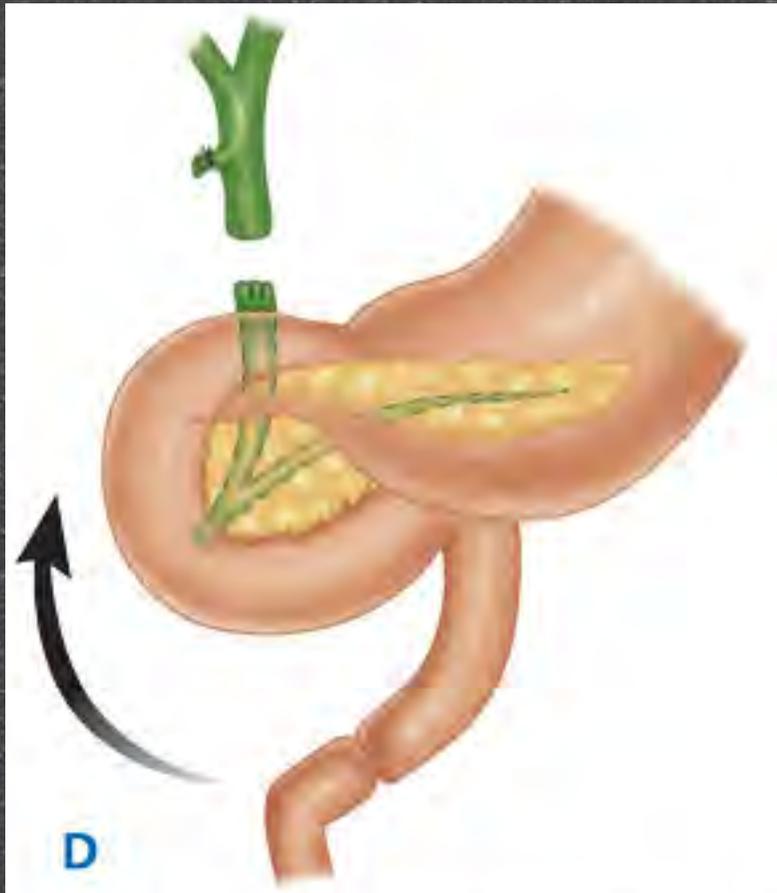
# Anestesia en cirugía de vías biliares

## Coledocoduodenostomía



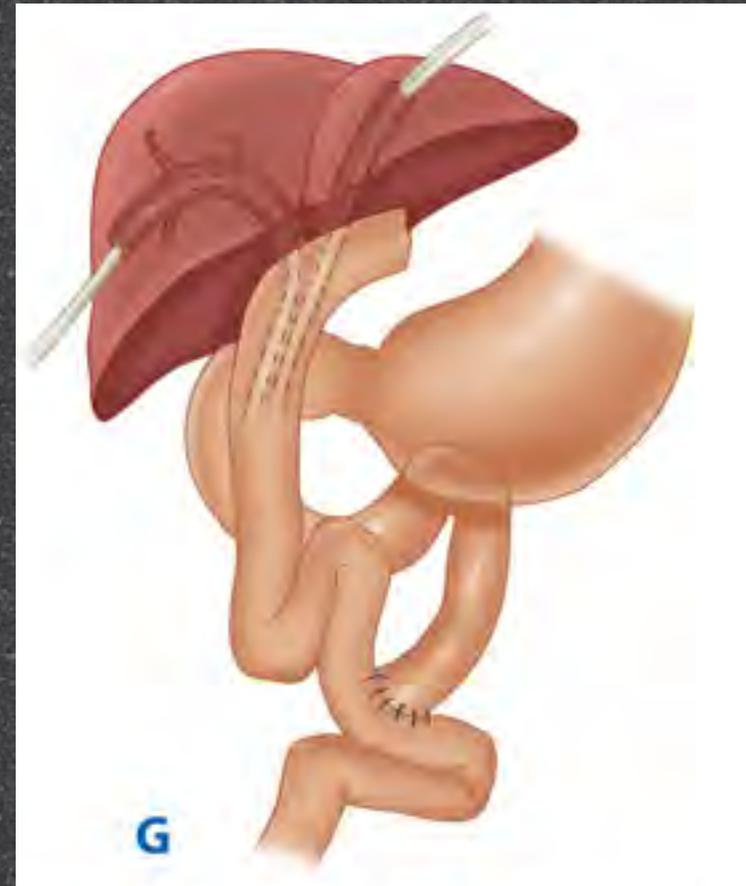
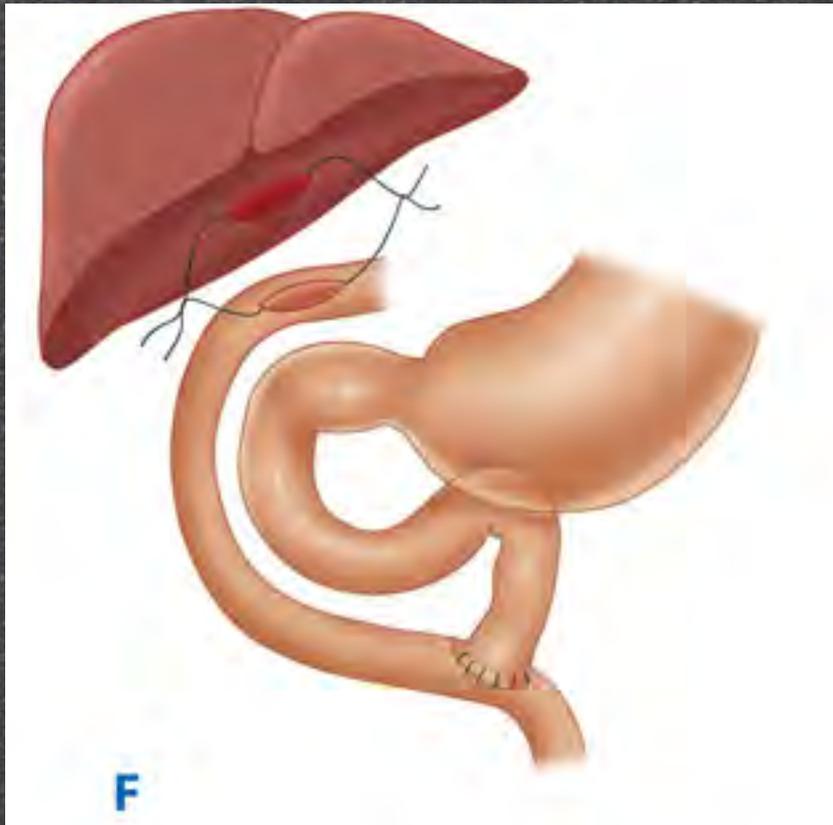
# Anestesia en cirugía de vías biliares

## Coledocoyeyunostomía



# Anestesia en cirugía de vías biliares

## Hepaticoyeyunostomía



# Anestesia en cirugía de vías biliares

- Neoplasias malignas de la vesícula biliar
- Poco frecuentes, aparecen en personas de edad avanzada relacionados con presencia de litiasis vesicular.
- Diseminación por invasión directa del hígado y vías biliares.
- Casi siempre muy avanzado al momento del diagnóstico.
- Incidencia 1:100.000
- Síntomas: ictericia obstructiva y dolor en hipocondrio derecho.
- 95% adenocarcinomas. Pueden ser distales, proximales o perihiliares o Klatskin
- < 15% supervivencia al año del diagnóstico.

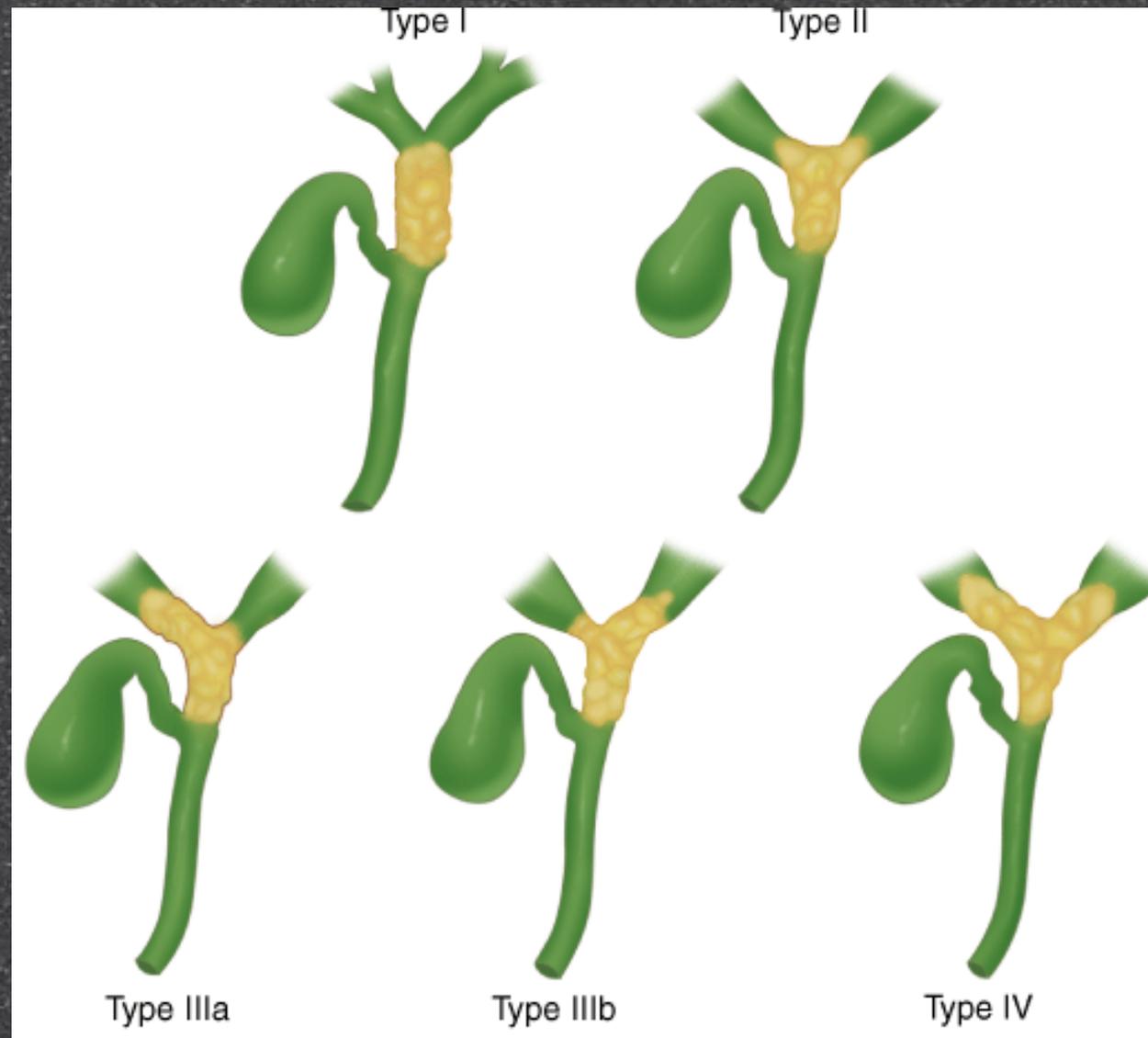


# Anestesia en cirugía de vías biliares

- Neoplasias de las vías biliares
- Poco frecuentes, con igual incidencia ♀:♂. > incidencia en >60 años.
- Adenocarcinomas, > conducto hepático o biliar común.
- Síntomas: ictericia obstructiva.
- Invasión de los segmentos lobares o de arteria hepática o vena renal son las causas más comunes de irresecabilidad.
- Mal pronóstico con sólo 15% de supervivencia al año del dx.



# Anestesia en cirugía de vías biliares



## Clasificación Bismuth-Corlette

SARTD-CHGUV Sesión de Formación Continuada  
Valencia 13 de Diciembre de 2011

# Anestesia en cirugía de vías biliares

- Dx: Ultrasonido y TAC
  - Perihiliar: dilatación del árbol biliar intrahepático, con vesícula y conductos biliares extrahepáticos colapsados.
  - Conductos biliares distales: dilatación de conductos biliares intra y extrahepáticos, y vesícula biliar



# Anestesia en cirugía de vías biliares

- Tratamiento: Excisión quirúrgica
  - Perihiliar: Excisión local + linfadenectomía portal + colecistectomía + excisión del colédoco + hepatoyeyunostomía de Roux en Y bilaterales.
  - Tipo IIIa-IIIb: lobectomía hepática derecha o izquierda.
  - Tumores distales: pancreatoduodenectomía con preservación del píloro (Whipple) en caso de ser resecables, si son irresecables hepatoyeyunostomía de Roux en Y + colecistectomía + gastroyeyunostomía.



# Anestesia en cirugía de vías biliares

- Enfermedad no resecable → descompresión biliar no quirúrgica.
  - Proximales: prótesis percutánea metálica expansible o catéteres para drenaje.
  - Distales: procedimiento endoscópico.



# Anestesia en cirugía de vías biliares

## Ampulectomía

- Indicada en tumores benignos muy pequeños o como cirugía paliativa en pacientes de alto riesgo quirúrgico.
- Es un tratamiento óptimo para los adenomas vellosos y otras lesiones benignas de papila, pero discutible en carcinoma in situ sobre adenoma o en T1N0M0 (G1-G2).
- Debe conseguirse la exéresis completa y un margen adecuado
- Solo hay 50 ampulectomías publicadas por cirujanos españoles.



# Anestesia en cirugía de vías biliares

Manejo anestésico

Anastomosis bilio-digestivas

Monitorización según condiciones del paciente

Inducción estándar

Profilaxis PONV

Mantenimiento estándar con agentes inh o IV, RM

Analgesia IV (mórfico de elección meperidina)/  
Epidural/ TAP Block

Postoperatorio en URPQ



# Gracias!!



don't ask.me  
use **google!**

