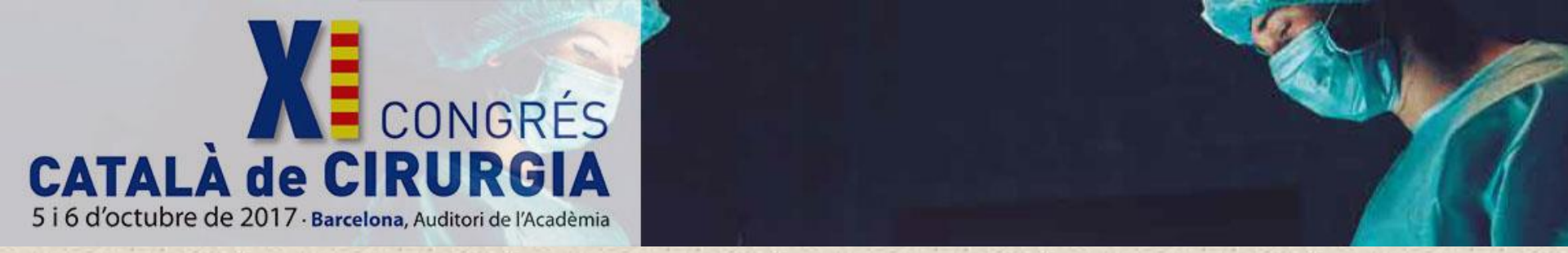


Taula rodona II: Discussió de casos clínics en pacient politraumàtic

Dra. Montmany

Hospital Universitari Parc Taulí

21 years old woman.

M Bicycle accident

I Abdominal pain

S BP 110/74 – HR 110x' – BR 24x' – Sat O2 98%

Glasgow 15

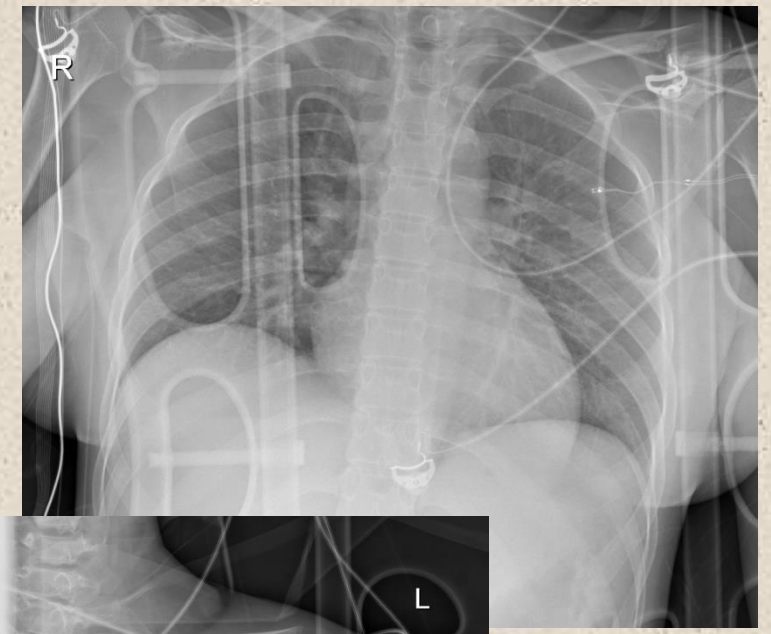
T Immobilized and cervical collar.

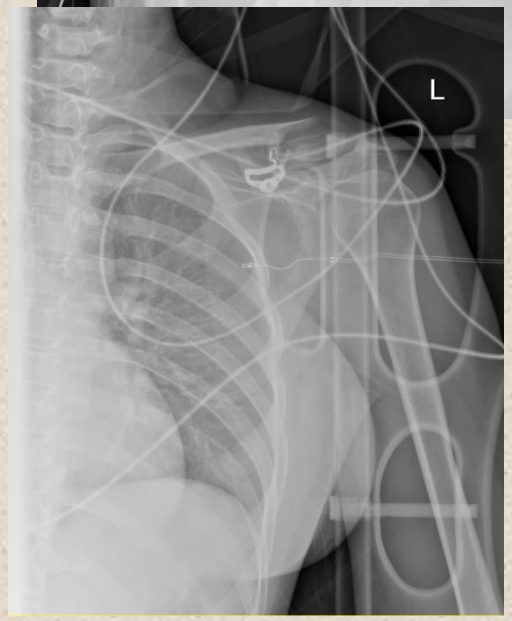
Day 1 – 21:40H. Trauma bay

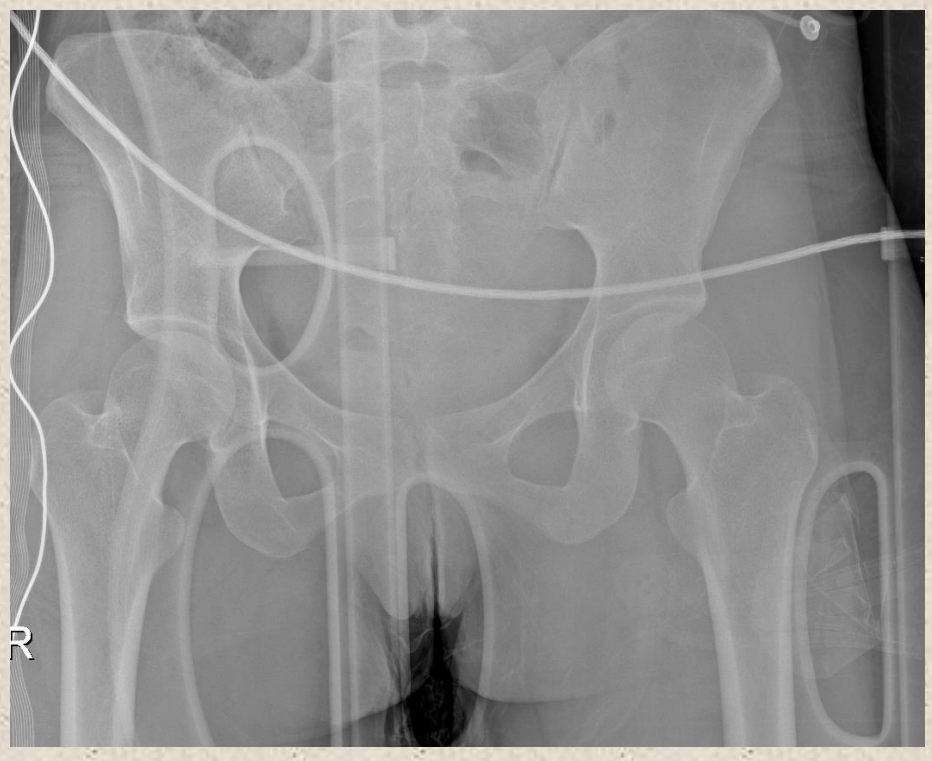
A. Permeable airway, Cervical collar.
B. Preserved breath sounds, BR 20x'. Sat O2 100%.
C. BP 83/57 – HR 99x'. Abdominal pain in the upper zone. Pelvis and extremities ok.
D. Glasgow 15. Normal pupils. No neurological focus
E. Left escapular erosion. Left clavicular pain.

Oxygen mask 100%

500cc RL

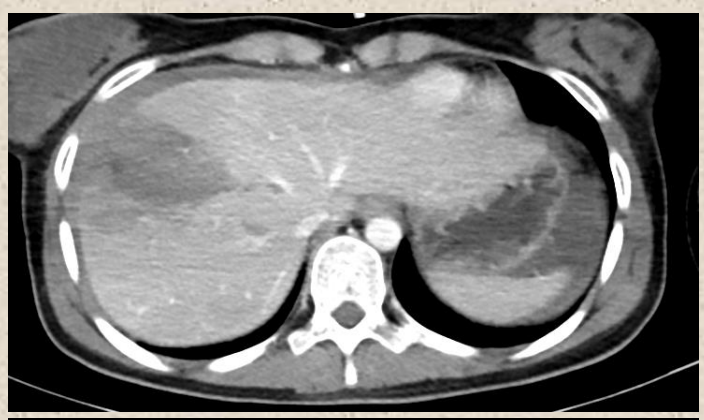


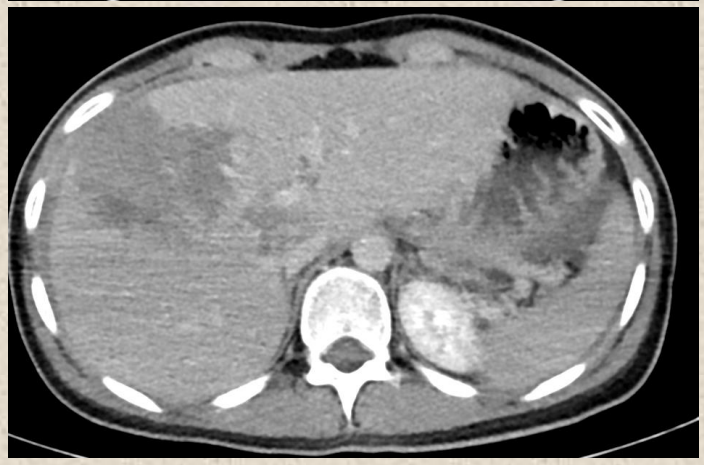


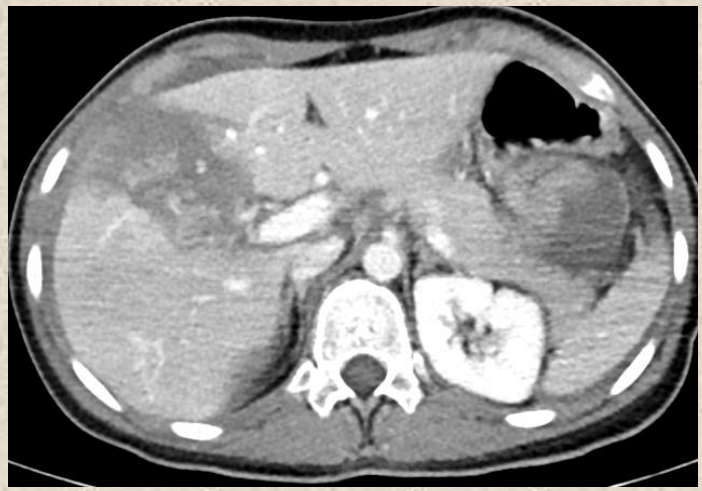


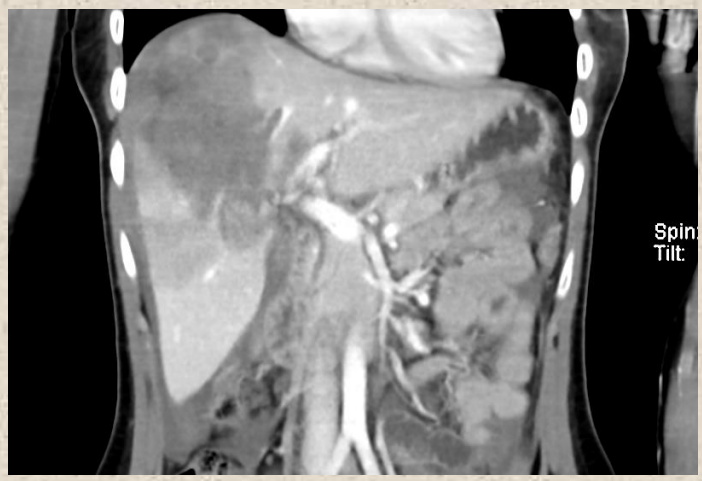
Blood test: 21.89 L, Hb 126, Plat 293, PT 1.03, CK 688, pH 7.33, pCO2 37.8, Bic 19.3, EB -5.6, Lactate 28 (N<22)

<10min, <1l RL & O2 100%:
Sat O2 100%, BP 111/78, HR 99x'.
Upper abdominal pain.

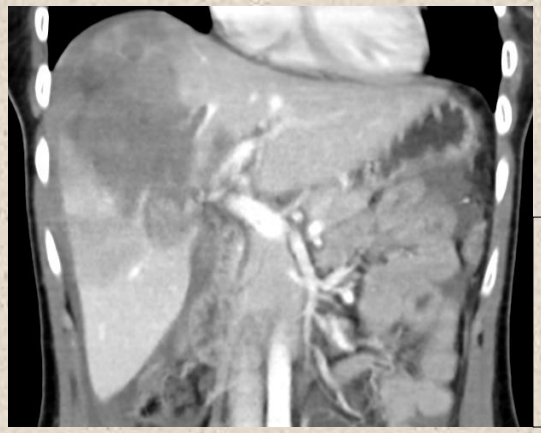








Complex hepatic injury that englobes VIII-IV-V hepatic segments.
Injury progress until vascular hepatic hilium with no injury.
Right hepatic artery are irregular and there exists contrast extravasation intraparenchymal in the zone of the injury (posible pseudoaneurism).



Complex hepatic injury that englobes VIII-IV-V hepatic segments. Injury progress until vascular hepatic hilium with no injury. Right hepatic artery are irregular and there exists contrast extravasation intraparenchymal in the zone of the injury (posible pseudoaneurism).

BP 79/50 – HR 115x'

- ICU and resuscitation
- Surgery
- If you have a ready interventionist radiologist: embolization
- Another option

Activate massive transfusion protocol

Surgery Day 1: 23 – 00:30H (85min)

During intubation process → Cardiac arrest → Overtaken with CPR maneuvers.

Midline laparotomy:

Important hemoperitoneum with a big hepatic injury (antero-post) that breaks liver in 2 fragments.

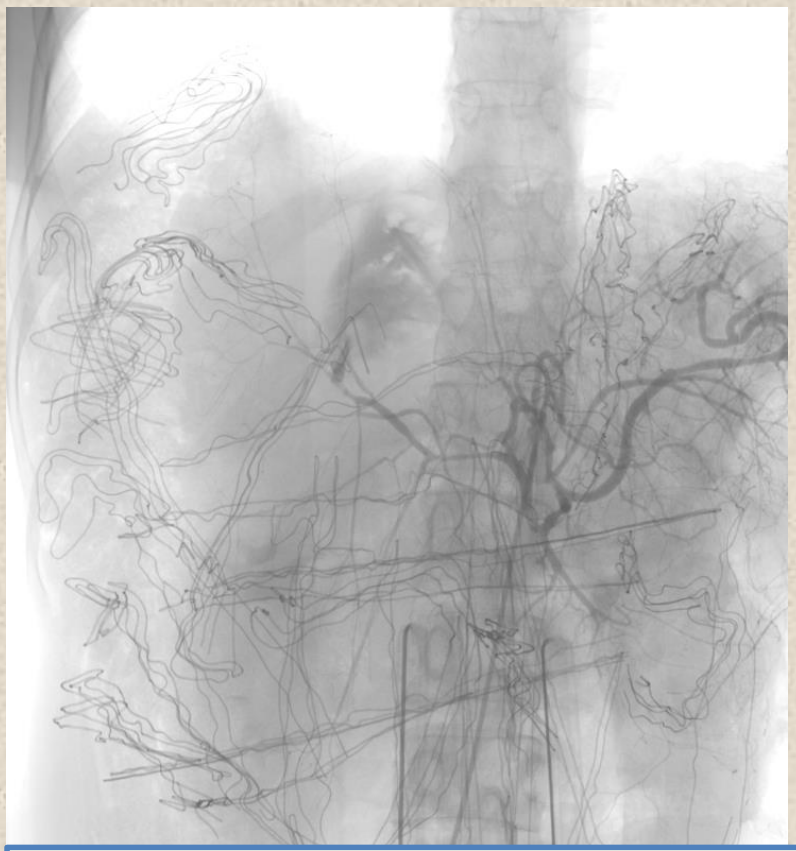
Closed liver with hands + Pringle

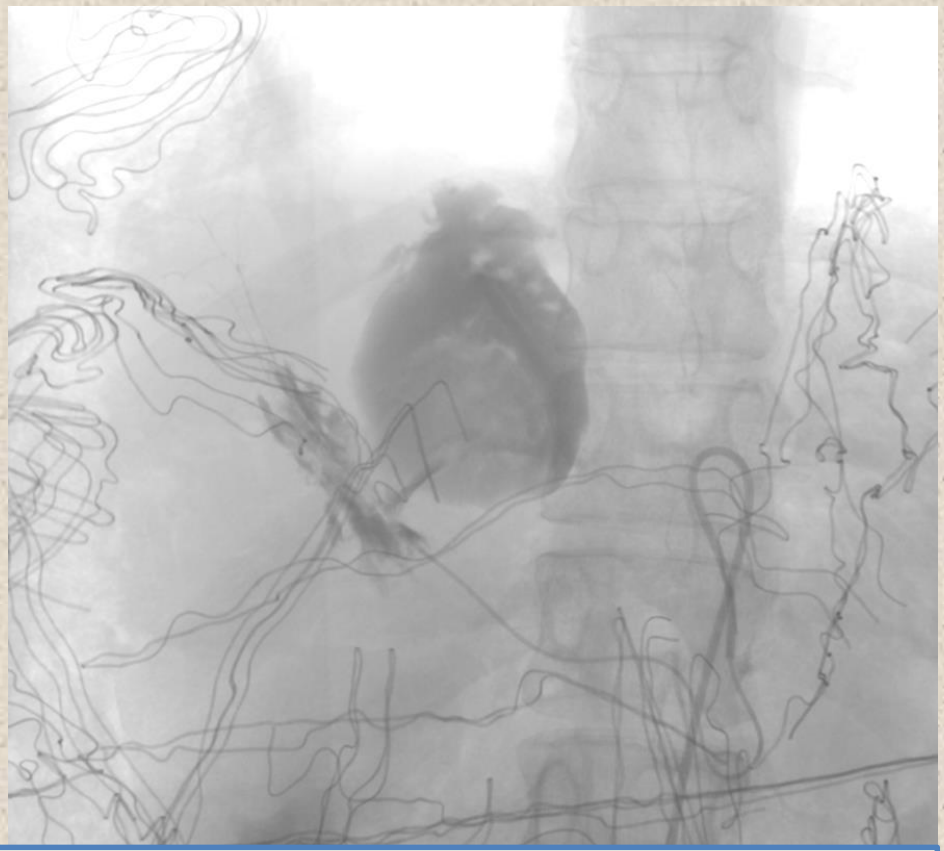
Blood test: Hb 6.4, Leuc 17,400 /L, Plat 76 000/, PT 1,48, Fibrinogen 0,8 g/L (N 1.5 - 4.5), Lactate 56,8 (N <22), pH= 7.32

Interventional radiologist prepared:
Liver packing – Removed Pringle – Open abdomen

1000 colloids, 2000 crystalloids, 8RBC, 1 pool plat, 4 Fresh Frozen Plasma, 6g fibrinogen, 1g tranexamic acid (guided by viscoelastic techniques: Rotem®)

Angiography – Day 1: 01:30H





Important contrast extravasation with active bleeding in subdivision of the right hepatic artery.

→ 7 RBC, 2 FFP, Vasoactive drugs.

evidence
HOW DO WE KNOW WHAT WE KNOW?

Hemodynamically instable or signs of peritonitis MUST be surgery *(Level 1)*

Trauma management guideline
JTrauma 2012

ARTERIOGRAPHY

Primary embolization:
Hemodynamically stable with contrast extravasation on CT *(Level 2)*

Trauma management guideline. JTrauma 2012
Misselbeck et al. JTrauma 2009
Letoublon et al. JTrauma 2011
Ward et al. EmJTraumaEmergSurg 2015

Postoperative embolization:
Think about it before bleeding difficult to control *(Level 2)*

- Decreases mortality (60%→30%[1], 36%→12%[2])
- Avoids multiples operations in hemodynamically and physiologically compromised patients[3].

Trauma management guideline JTrauma 2012
Asensio, Demetriades et al. JTrauma 2003[1]
Johnosn et al. JTrauma 2002[2]
Asensio, Demetriades et al. JTrauma 2000[3]

Late embolization:
Due to rupture or persistence of pseudoaneurisms

Trauma management guideline
JTrauma 2012

Controversy: TRANSIENT RESPONSE --> Embolization vs Surgery

To consider the use of arteriography *(Level 2)*
Its use is safe and effective, but it needs more statistical significance

Trauma management guideline. JTrauma 2012
Hogiwara et al, JTrauma 2004
Bauer et al, SemIntRad 2004

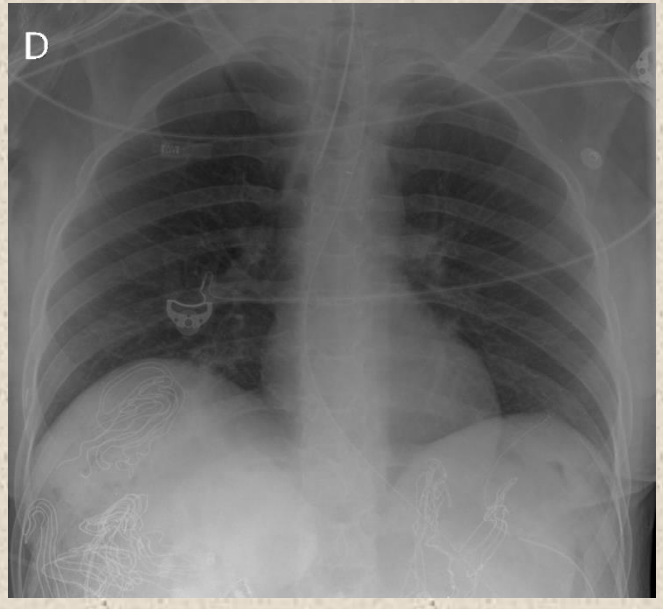
ICU Day 2

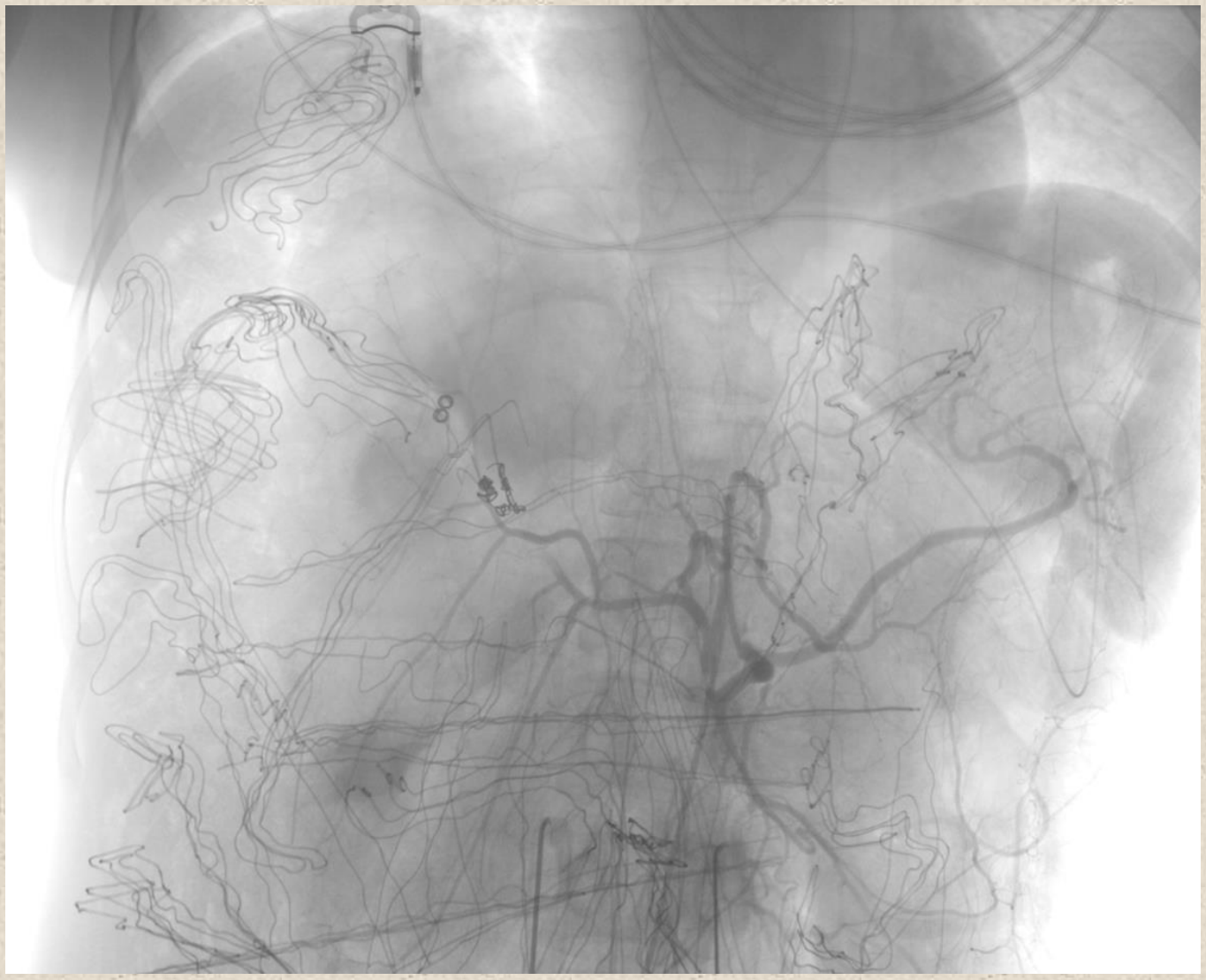
BP 80/50 – HR 120x'.

Oliguria

Desaturation

Blood test: 6 Leuc, Hb 112, PT 1.64, Creat 0.67, AST 1308, ALT 1581, BT 1.2, Lactate 42 (N<22)





No signs of active bleeding.
Intrahepatic portal branches are not visualized, identifying correctly extrahepatic portal vein which had inverted flow to inferior mesenteric vein.

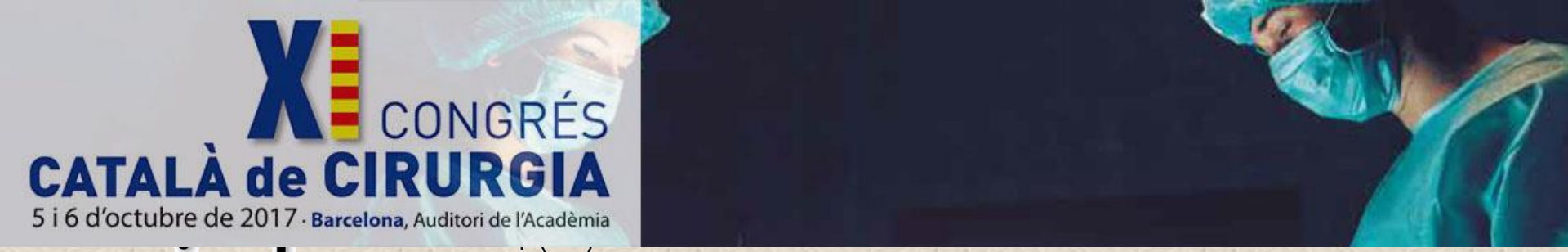
Surgery Day 2: 16 – 17:15H (74min)

Removed packing→ Patient get better

Poor hemoperitoneum.

Known hepatic laceration with clot without active bleeding + Some areas of the right liver with signs of ischemia.

Re-packing + Open abdomen.



evidence

HOW DO WE KNOW WHAT WE KNOW?

Abdominal Compartment Syndrome is posible despite open abdomen

Patients with ACS have more mortality and MOF

Risk Factors:

- Fascial closure after primary laparotomy
- Politransfusions
- Abdominal injuries + Pelvic trauma

Offner et al. Arch Surg 2001
Letoublon et al. JViscSurg 2016
Ertel et al. CritCareMed 2000

How do we go about time?

ICU

Correct evolution

Day 3: Biliary fluid through laparostomy

Surgery

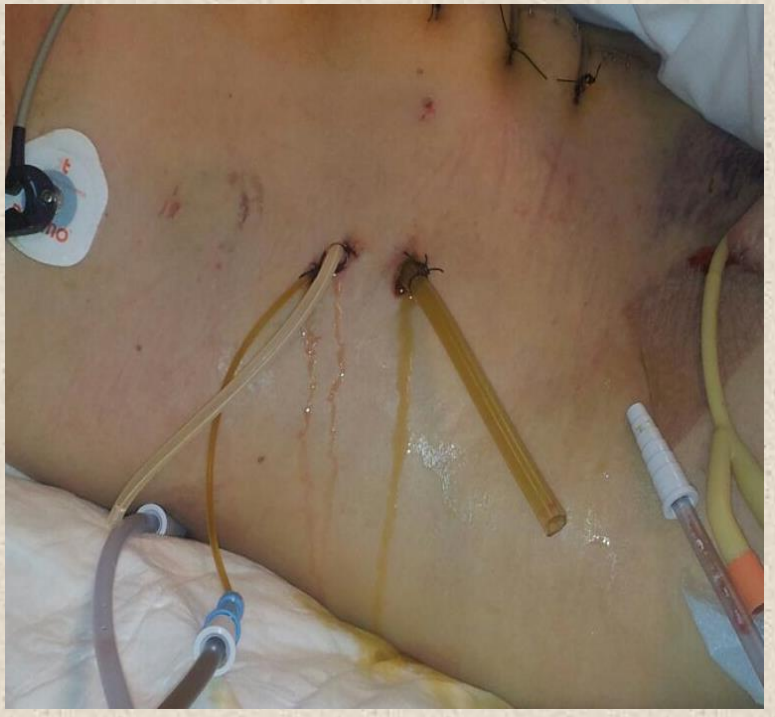
Biliary leak in the middle of the hepatic laceration, on the V-VIII segments

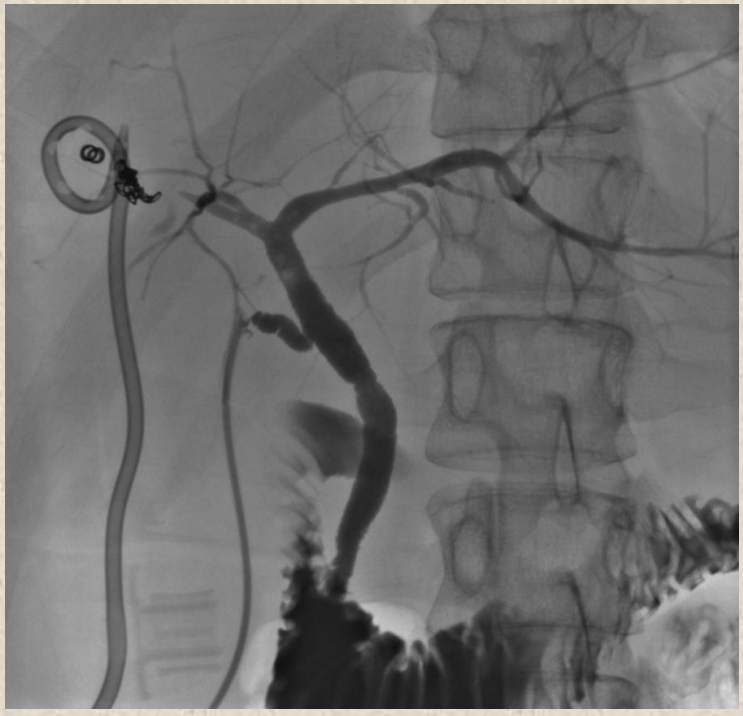
Cholecistectomy + Drains + Close abdominal wall.

ICU: Correct evolution.

Home: 11 day after the accident

Biliary fistula: 500-800ml/day during 1 month. Closed spontaneusly.





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