Transthoracic laparoscopic liver (TTL) resection for hepatocellular carcinoma

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BACKGROUND

- Laparoscopic approach for liver resection:
  - Reduced blood loss and transfusion requirement
  - Lower complication rate and shorter hospital stay

- Specificities about chronic liver disease:
  - Lower ascitis rates
  - Reduced incidence of liver failure
• Transthoracic transdiaphragmatic approach facilitates resection of sub diaphragmatic tumors (Morioka consensus conference)

• Recent reports of patient series:
  • Ogiso Ann Surg 2015: 25 patients
  • Chiowk HPB 2015: 8 patients
  • Ichida Surg Endosc 2017: 14 patients

→ Mainly or exclusively CRLM
Among 17 consecutives transthoracic resections, 7 involved HCC and cirrhosis
PATIENT SELECTION

- Subcapsular HCC located in segment VII or VIII
- Unresectable over standard subcostal laparoscopy
- Compensated cirrhosis (Child A, MELD < 10)
- Hepatic venous pressure gradient < 10 mmHg *
- Intra and post-operative data were obtained from the prospectively-informed French National database.

* Boleslawski BJS 2012
• 7 patients: 5 men, 2 women
• Cirrhosis was alcoholic in all cases
• Indication was single HCC

• Characteristics:
  • Age: 62 (43 – 78)
  • BMI: 31 (23 -33)
  • Tumor size: 20mm (10 – 27)
PROCEDURE

- French position is not mandatory
- Traditional arm board could lead to conflicts with surgeon’s left hand
PROCEDURE

• 1 or 2 balloon-tipped intercostal trocars (10mm)
• If possible, same inter costal space
• Systematic US exploration
PROCEDURE

• 10/5 minutes intermittent total pedicular clamping

• Preservation of spontaneous portocaval shunts during liver mobilisation

• Systematic suture of diaphragmatic breaches

• Intensive post-operative physiotherapy
PROCEDURE
RESULTS

• No conversion
• All blood loss < 300 mL
• Operative time: 153 min (118-207 min)

• Abdominal drain in all patients
• Hospitalization duration: 5-7 days
• One patient required intraoperative pneumothorax drain
• 100% R0 resection: minimal margin from 3 (first patient) to 16 mm

• Complication occurred in 3 patients
  • 2 grade B: ascitis
  • 1 grade C: POD7 evisceration revealed by ascitis flow through scar
• Ascitis is frequent after liver resection in cirrhotic patients
• Diaphragmatic breach could lead to pleural effusion
  → No thoracic ascitis was described
  (and no postoperative thoracic drain)

POD 0  →  POD 3
CONCLUSION

- Transthoracic laparoscopic resection for HCC in selected cirrhotic patients is possible.

- No specific complication occurred in the 7 first patients of our experience.

- No restricted area anymore for laparoscopic liver resection
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