Minor laparoscopic liver resection as day-case surgery (without overnight hospitalization).

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Day-case surgery (DCS)

- 2009: France lags behind the US and its European neighbors (36% of surgery as DCS).

- National priority

- DCS is validated as part of:
  - Laparoscopic cholecystectomy.
  - Abdominal hernia repair.
  - Proctologic surgery.
  - Gastro esophageal reflux surgery (pioneer for extension of indications).

The safety of the same-day discharge for selected patients after laparoscopic fundoplication: a prospective cohort study

Christophe Mariette, M.D., Ph.D., Guillaume Piessen, M.D., Jean Michel Balon, M.D., Anne Guidat, M.D., Gilles Lebuffe, M.D., Ph.D., Jean Pierre Triboulet, M.D.
Introduction

New indications for DCS

Outpatient colectomy within an enhanced recovery program

B. Gignoux*, A. Pasquer, A. Vulliez, T. Lanz

J Visc Surg. 2015

Management of Uncomplicated Acute Appendicitis as Day Case Surgery: Feasibility and a Critical Analysis of Exclusion Criteria and Treatment Failure

Gérard Greipois, PhD, Charles Sabbagh, MD, PhD, Cyril Cosse, PhD, Brice Robert, MD, Emilie Chapuis-Roux, MD, Alexandre Ntouba, MD, Thierry Lion, MD, Jean-Marc Regimbeau, MD, PhD

JACS. 2016

Sleeve Gastrectomy

SOARD. 2015

Outpatient colectomy

J Visc Surg. 2015

Appendicitis

JACS. 2016
Introduction

Laparoscopic liver resections as DCS?

Chirurgie hépatique mineure par laparoscopie en ambulatoire : étude rétrospective observationnelle

Ambulatory laparoscopic minor hepatic surgery: Retrospective observational study

M. Gaillard\textsuperscript{a,b}, H. Tranchart\textsuperscript{a,b}, P. Lainas\textsuperscript{a}, D. Tzanis\textsuperscript{a,b}, D. Franco\textsuperscript{a,b}, I. Dagher\textsuperscript{a,b}

J Visc Surg. 2015

Minor laparoscopic liver resection: toward 1-day surgery?

Nicola de’Angelis\textsuperscript{1}, Benjamin Menahem\textsuperscript{2,3}, Philippe Compagnon\textsuperscript{1}, Jean Claude Merle\textsuperscript{4}, Francesco Brunetti\textsuperscript{1}, Alain Luciani\textsuperscript{5,6}, Daniel Cherqui\textsuperscript{7}, Alexis Laurent\textsuperscript{1,6}

Surg Endosc. 2017

Laparoscopic liver surgery: towards a day-case management

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Surg Endosc. 2017

Hot Topic

DCS (50% liver cyst fenestration)

Discharge on POD 1 (feasible)

Evaluation for DCS criteria
Liver Surgery

Since 2002
- More than 1000 liver resections
  - Malign Tumors: metastasis, HCC, cholangiocarcinoma
  - Benign Tumors: Adenoma…
  - No transplantation
- More than 220 laparoscopic liver resections

Day-case surgery

Since 2008
- At the beginning
  - Laparoscopic cholecystectomy.
  - Abdominal hernia repair.
  - Proctologic surgery
- Then some surgical innovations
  - Sleeve gastrectomy (more than 250 procedures)
  - Acute appendicitis
  - Ileostomy closure

The purpose of this prospective study was to show the feasibility of minor LLR as DCS
Inclusion/Exclusion Criteria

Inclusion Criteria

- minor LLR (< 3 segments),
- absence of a significant medical history (cardiovascular and/or pulmonary diseases, no previous major history of abdominal surgery),
- DCS criteria
  - living within an hour's drive from our hospital

Exclusion Criteria

**Pre-operative**

- major abdominal surgery using laparotomy,
- major LLR (≥ 3 segments),
- difficult locations (posterior and superior segments),
- hepatobiliary procedures without liver parenchyma resection (radiofrequency ablation, liver cyst fenestration),
- cirrhosis with Child > A and/or portal hypertension,
- presence of a significant medical history,
- criteria for DCS.

**Intra-operative**

- intra-operative event (major bleeding),
- abdominal drainage

- Clamping not a exclusion criteria
Study Endpoints

Primary endpoint
- Unplanned overnight admission rate (i.e. the percentage of intended day-case minor LLR in which the patient was admitted overnight).

Secondary endpoints
- Causes for exclusion to DCS,
- Intra-operative data,
- Data related to DCS:
  - Unexpected consultation rate,
  - Hospital readmission rate,
  - Unexpected reoperation,
  - Complications (according to the Clavien classification),
  - Levels of patient satisfaction with day-case minor LLR at one post-operative month.
- Compliance to the protocol,
- Outcomes of patients excluded because of refusal DCS.
Day of the surgery

DCS Unit admission: 07h15

Operating theater admission: 08h00

Start of the surgery: 08h45

Operating theater admission: 08h00

Return in the DCS Unit: 12h00

Observation + Blood sample

Criteria for discharge

Discharge at 06:00 PM

Scheduled Consultation at POD 4

Recovery room: 10h45
Results

Liver resections = 120

Combined procedure = 4

Laparotomy = 45

Laparoscopy-assisted = 9

Technical reason = 14

Significant medical history = 11

Potential DCS = 19

Refusal of Patient = 1
Results

During the study period: 120 liver resections

- 65 patients with intent of laparoscopy (54.0%)
  - 56 full laparoscopy (46.6%)
  - 9 laparoscopy-assisted (7.5%)

- 18 patients as DCS representing
  - 15% of the total population
  - 27% of the laparoscopy population

Demographic data of patients with DCS:

- Male gender: 12 (66%).
- Median age of 61 years-old (30 – 70).
- Median body mass index of 26.7 kg/m² (20.8 – 35.1).
- 13 patients ASA ≤ 2 (72%)
RESULTS

Indications
- Malign tumors (61%)
  - Colic liver metastasis (5)
  - Rectum liver metastasis (3)
  - Breast liver metastasis (1)
  - HCC (2)
- Benign tumors
  - Liver adenoma (3)
  - Ciliated hepatic foregut cyst (2)
  - Focal nodular hyperplasia liver (2)

Location of the tumor
- Segment I: 0
- Segment II: 0
- Segment III: 5 (27%)
- Segment IV: 5 (27%)
- Segment V: 4 (23%)
- Segment VI: 4 (23%)
- Segment VII: 0
- Segment VIII: 0
RESULTS

Intra-operative data

- All procedures were performed laparoscopically

- Operative time: 90 minutes (50 - 180).
  - 4 trocars (3 – 5).
  - Two patients with intra-operative clamping (one for bleeding).
    - One patient with intra-operative bleeding (accessory hepatic vein).
  - One patients with intra-operative discover of multiple lesions.
RESULTS

Operative day

- Time to oral feeding: 8h30 ± 37min (7h45-9h45).
- Time to discharge from day-case unit: 10h30 ± 30 min (9h45-11h15)

- Unplanned overnight admission: 3 (16%)
  - Unforeseen procedure (multiple resections)
  - Combined incisional hernia repair (pain)
  - Post-operative hypotension

Follow-up

- Unexpected consultations: 0%
- Hospital readmissions: 1 (5%)
- Major complications: 0%

Satisfaction

- Satisfaction rate: 94%

Scheduled consultation at POD 4
Discharge on POD 1
CONCLUSION

In selected patients, day-case minor LLR is feasible and has acceptable complication and readmission rates.

Hence, day-case minor LLR can be legitimately implemented for selected patients.

Acceptation as project of the National Cancer Institute