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Is day stay laparoscopic cholecystectomy feasible at a provincial hospital?

Gallstone disease is a major health issue, with an estimated prevalence of 2–40%.[1] The majority of patients remain asymptomatic; 11.4% of asymptomatic individuals harbouring stones develop symptoms within 8.7 years.[2] Laparoscopic cholecystectomy (LC) has become standard management for symptomatic gallstones. The median hospital stay for an elective LC is up to 5.4 days.[3]

Recently a "day-stay" approach to LC has been adopted: this is standard practise in many centres. A Cochrane review compared patients discharged on the day of their LC with patients who were discharged the following day and there were no significant differences in outcomes.[4]

Our study describes the implementation of a day-stay approach within a medium-sized provincial hospital in New Zealand. Data was collected prospectively over a 13-month period. A day-stay LC pathway was implemented at the commencement of the study.

Inclusion criteria included ASA 1–3, living in close proximity to the hospital and presence of a responsible adult at home on discharge. Preoperative education commences at the initial specialist appointment and is continued at preadmission clinic.

Surgical initiatives include avoidance of abdominal drainage, non-steroidal anti-inflammatory drugs (NSAIDs) administration and limitation to 500mL intravenous fluid. Local anaesthetic is used for wounds/intraperitoneally. Perioperative anaesthetic and antiemetic regimens are chosen at the anaesthetist's discretion. Postoperative analgesia consists of paracetamol, NSAIDs and as required opioids. Tramadol is avoided.

Discharge criteria involves adequate analgesia, safe mobilisation, tolerating oral intake and absence of vomiting. Discharge medication consists of paracetamol, ibuprofen, oxynorm and metoclopramide.

Notes were retrospectively consulted and patients were excluded for acute cholecystitis, a planned dual or an open procedure or if ASA 4. Documentation ascertained "successful" day-cases; if not achieved, the reason was attributed to "surgical reason", "anaesthetic reason" or "protocol failure". Readmission was assessed up to 30 days following discharge.

This audit involves non-identifiable retrospective data and therefore ethics approval was not required.[5]

65 cholecystectomies were carried out in a 13-month period. 10 were excluded leaving 55 LCs with intended same-day discharge. 75% of patients were female. Our cohort had a mean age of 51 years. 33 patients (59%) were discharged on the same day of their operation. 19 of the 22 patients admitted overnight were discharged the following day. The average stay was 0.64 days.

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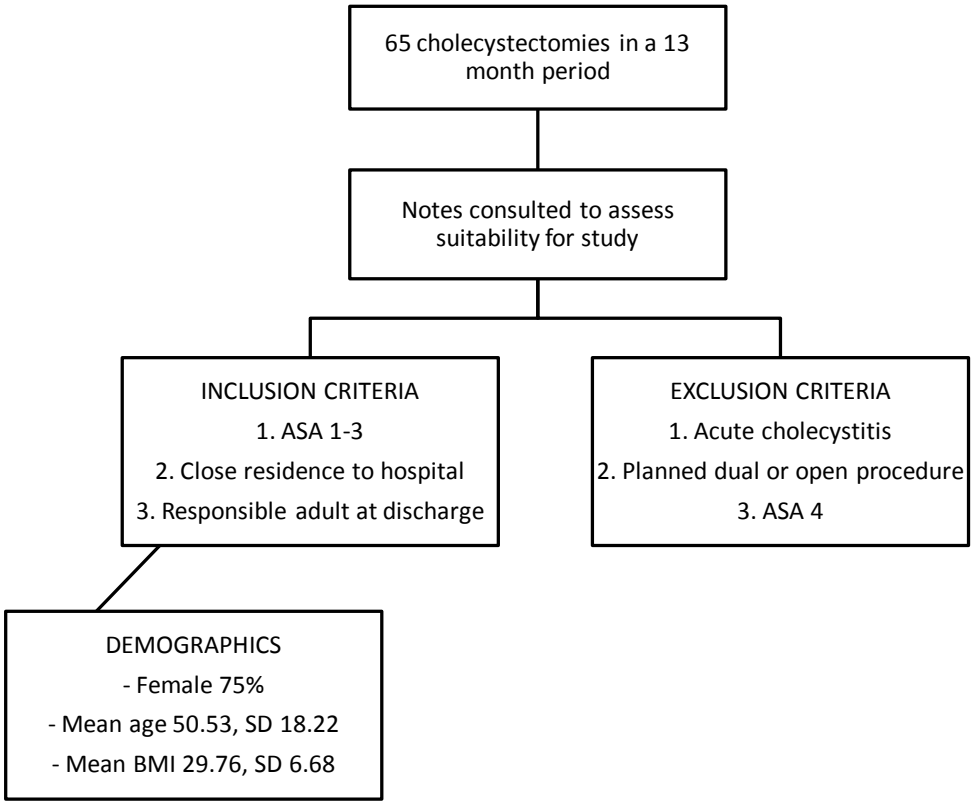
Figure 1. Inclusion and exclusion criteria along with demographics of our cohort

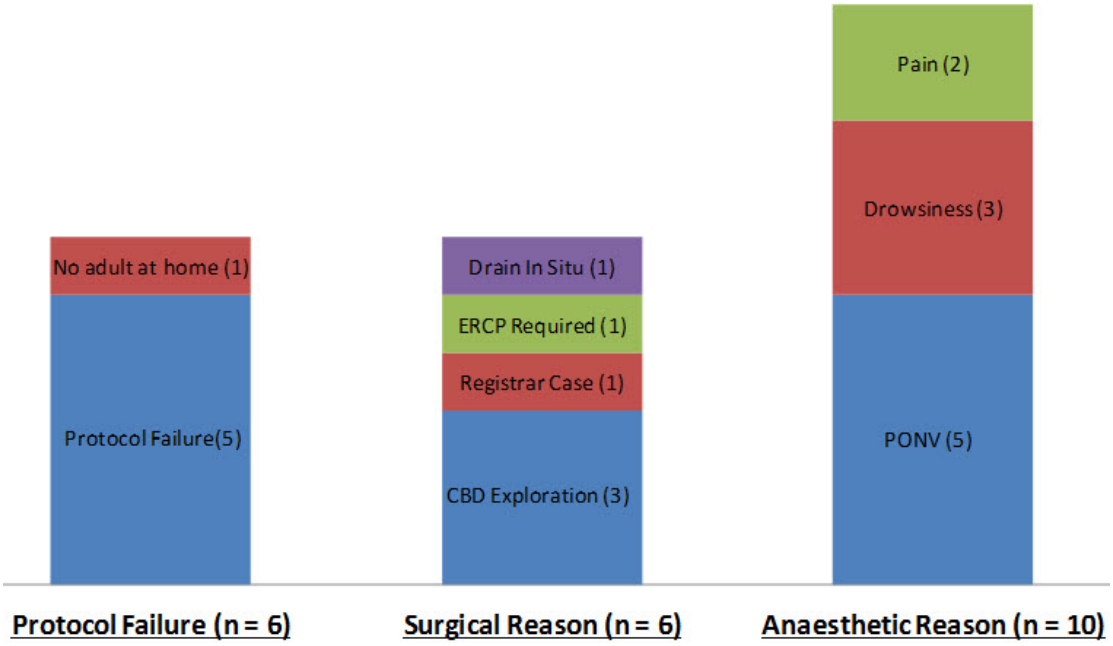


We had one post-op complication (haematoma) not requiring further intervention. Two further patients had prolonged stays after being admitted for elective ERCP due to CBD stones that could not be cleared in theatre.

Our cohort includes 10 patients aged 70 years or older. Three of these were discharged on the same day of their operation. None of the six patients aged 75 years or older were discharged on the same day.

Reasons for overnight admission are demonstrated on Figure 2. For five patients there was no reason why they were not discharged home; they are classified under protocol failure.

Figure 2. Reasons why admission was required following LC



Five patients were readmitted within one month of their operation (three for pain, one with a lower respiratory tract infection and one with a myocardial infarction—whom had atypical pain and a cardiac cause excluded prior to surgery). For three re-presentations readmission was not required (one open-wound, one with pain and one with a seroma).

Day-stay LC is a safe and effective approach that can be effectively applied in a provincial New Zealand hospital. Our cohort contained no deaths and one serious surgical complication. The main reasons for prolonged admission were pain and post-operative nausea/vomiting.

Our "successful day-case" percentage (60%) was lower than the figures of ~80% quoted in a Cochrane review. Potential reasons are our older cohort (mean age some eight years older), inclusion of more comorbid patients (ASA 3 in addition to ASA 1 and 2 in Cochrane review) and our study being conducted in the day-stay unit (hours 0800–2000) at a 24-hour public hospital, as opposed to a purpose-built day-stay hospital.

The message of day-stay must be communicated early to avoid factors such as no transport or responsible adult at home—we believe this led to a number of protocol failures. Similarly, if a patient is admitted to a general ward the emphasis switches from discharge to patient comfort. Five of our patients were admitted from recovery in error and this probably contributed to protocol failures.

Our study supported evidence from a recent review that examined interventions to facilitate ambulatory LC.[6] More standardised, evidence-based protocols involving these areas can be seen to be important in same-day discharges.

Day-stay LC is safe and logistically feasible in a provincial New Zealand hospital. Standard protocol for patient education, pain, antiemetics, fluids and discharge criteria is important. We have shown age to be limiting factor—higher same-day discharge percentages could likely be achieved with implementation of tighter patient selection criteria.

Reduced resource requirements are highly likely and there are potential tangible benefits to both patients and the hospital system. This study started with the commencement of day-case procedures, accepting there would be a learning curve and examines the barriers to introducing a day-case laparoscopic cholecystectomy pathway in a medium-sized public hospital in New Zealand.

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References:

1. Acakovschi M. Cholesterol Gallstones: from epidemiology to prevention. Postgraduate Medical Journal. 2001;77:221–229.
2. Festi D, Reggiani ML, Attili AF, et al. Natural history of gallstone disease: Expectant management or active treatment? Results from a population-based cohort study. J Gastroenterol Hepatol. 2010 Apr;25(4):719–24.
3. Gutt CN, Encke J, Koninger J et al. Acute Cholecystitis: Early Versus Delayed Cholecystectomy, A Multicenter Randomized Trial (ACDC Study, NCT00447304). Annals of Surgery. 2013 Sep;258(3):385–93.
4. Gurusamy KS, Junnarkar S, Farouk M, et al. Day-case versus overnight stay for laparoscopic cholecystectomy. Cochrane Database Syst Rev. 2008 Jul 16;(3):CD006798.
5. Health and Disability Ethics Committees. Does your study require HDEC review? [PDF on internet]. [last cited 13 November 2013]. Available from: http://ethics.health.govt.nz/system/files/documents/pages/HDEC%20scope%20summary.pdf
6. Ahn Y, Woods J, Connor S. A systematic review of interventions to facilitate ambulatory laparoscopic cholecystectomy. HPB (Oxford). 2011 October;13(10):677–686.

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