

# Technical Section [ TECHNICAL NOTES AND TIPS

## Management of injury to ducts of Luschka during cholecystectomy

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### CORRESPONDENCE TO

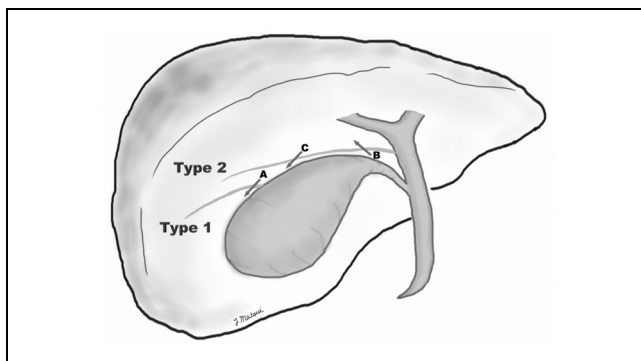
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doi 10.1308/rcsann.2018.0081

Aberrant biliary ducts in the gallbladder bed are called ducts of Luschka. The ducts are a significant source of bile leakage after cholecystectomy.<sup>1–5</sup> We have encountered two different types of these ducts: one draining directly into the gallbladder (type 1), and the other running along the gallbladder bed and draining into the hepatic duct (type 2) (Fig 1). Using videos (available online as supplementary material), we demonstrate the procedures employed to manage injuries of these ducts.

Video 1 shows an injury to a type 1 duct of Luschka. The duct was injured at its point of connection to the gallbladder (marked 'A' in Fig 1). After removal of the gallbladder, a slight outflow of bile from a slender filament on the gallbladder bed was noted. The filament was clipped and the bile leak stopped.

Video 2 shows the first of two injuries to a type 2 duct of Luschka. The duct was injured at its central part, near the hepatic duct (marked 'B' in Fig 1).

Video 3 shows a second injury to a type 2 duct. The duct was injured at its peripheral part (marked 'C' in Fig 1). After removal of the gallbladder, bile leakage was observed from a specific region on the gallbladder bed. Sutures were placed to close the duct stump and the bile leak ceased. There were no postoperative complications.



**Figure 1** The two types of ducts of Luschka: one draining directly into the gallbladder (type 1), and the other running close to the gallbladder and draining into the hepatic duct (type 2). The red arrows indicate where the ducts of Luschka were injured during cholecystectomy

If bile is noted and an injury to the duct of Luschka is observed, the injured duct should be closed with a clip or suture to prevent postoperative bile leakage. Knowledge of these rare injuries to ducts of Luschka would be helpful for surgeons.

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## Indirect reduction screws: a technique to aid reduction in intramedullary nailing

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### CORRESPONDENCE TO

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doi 10.1308/rcsann.2018.0161

### BACKGROUND

When undertaking intramedullary nailing of tibial long bone fractures, obtaining a satisfactory reduction and overall alignment is key to achieving a successful outcome.

### TECHNIQUE

This technique relies on an amenable fracture pattern and a wide enough canal and metaphysis in the malreduced segment to allow movement to obtain adequate correction. Following nail insertion and locking of one metaphyseal end, residual malalignment is assessed.

Residual misalignment can be improved in the acute period by removal of distal screws and medialisation or lateralisation of the nail distally, resulting in hinging at the narrowest area of the distal segment and restoration of acceptable overall alignment. For example, Fig 1a shows a nail with unacceptable valgus misalignment. A drill can be aligned at the nail distally (through a separate lateral stab incision) and the lateral cortex and passage drilled. A long screw can then be aimed and inserted, with continued insertion after impaction on the solid surface of the nail resulting in initial translation of the nail within the metaphysis – a 'pushing' effect (Fig 1b). Once the