Scholars LITERATURE

La Prensa Medica Argentina

Research Article

DOI: https://doi.org/10.47275/0032-745X-402
Volume 109 Issue 5

Intraoperative Colangiography. Observational Analysis: Time, Complications, and Hospital Stay

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Abstract

Background: Since its introduction in the 1930s, the intraoperative cholangiographies (IOC) has been used to understand the biliary anatomy and its variants, to detect choledocholithiasis and surgical lesions of the main bile duct (LQVBP).

Methods: Random IOCs were retrospectively analyzed during the period from July 2019 to January 2023 at the Hospital Nacional de Clínicas.

Results: The average time of the IOC was 16 min (2′ - 30′).

Discussion: IOC is a safe procedure, with a morbidity of 0.66% in the series.

Conclusion: IOC is a safe, effective intraoperative method that does not have negative implications for the evolution of the patient.

Keywords: Intraoperative cholangiographies; Choledocholithiasis

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Citation: Garcias L, Da Rosa JL, Días I, Gramática L (2023) Intraoperative Colangiography. Observational Analysis: Time, Complications, and Hospital Stay. Prensa Med Argent, Volume 109:5. 402. DOI: https://doi.org/10.47275/0032-745X-402

Received: September 14, 2022; **Accepted:** November 09, 2023; **Published:** November 14, 2023

Introduction

Routine IOC in laparoscopic cholecystectomy (LC) remains controversial [1]. Since its introduction in the 1930s, IOC has been used to understand biliary anatomy and its variants, detect choledocholithiasis and surgical lesions of the main bile duct (LQVBP) [2,3]. The objective of this analysis is to determine the time of cholangiography, intraoperative complications, postoperative complications, and hospital stay.

Methods

IOC performed by surgeons in training during the period from July 2019 to January 2023 at Hospital Nacional de Clínicas were retrospectively analyzed. The duration of the procedure was timed from cysticotomy (opening of the cystic duct) until obtaining the diagnostic image. Hospital stay was defined by the length of stay from the end of surgery to hospital discharge.

Results

300 IOCs were performed. 59% were performed with a rigid cannula (Figure 1). 41% were performed with a flexible cannula (Figure 2). The average IOC time was 16 min (2' - 30'). IOC time with flexible cannula was significantly longer than that performed with rigid cannula ($p < 0.01$); However, as the resident developed greater skills, this time decreased.

In the procedures performed with a rigid cannula, the incidence of complications was 1.1% (2 cases) of bile duct injuries performed with the cannula, which were classified as Strasberg A (cystic duct injury), resolution was by means of a metal duct clip. cystic distal to the perforation.

The hospital stay was 12 h, which was not prolonged by performing IOC.

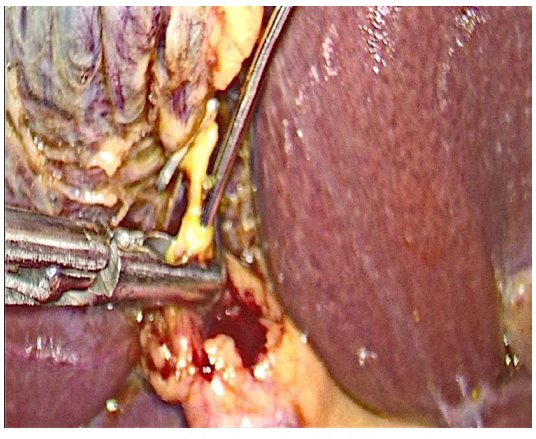

Figure 1: Cholangiography with rigid cannula.

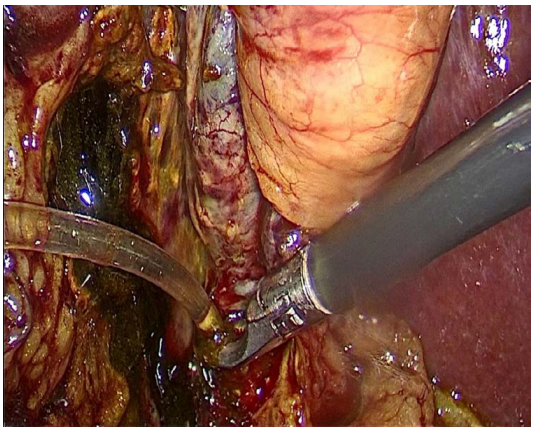

Figure 2: Cholangiography with flexible cannula.

Discussion

IOC is a safe procedure, with a morbidity of 0.66% of the series and zero mortality [4]. It allows us to recognize the biliary anatomy, unnoticed surgical injuries of the bile duct during cholecystectomy and unsuspected choledocholithiasis. It prolongs the operating time, especially in cases where a flexible cannula is used. This factor is variable because it depends on the surgical skills of the operating surgeon [5].

Conclusion

IOC is a safe, effective intraoperative method that does not have negative implications on the patient's outcome. Being a cost-effective method for detecting complications inherent to cholecystectomy. We recommend its routine use in the Surgeon's training stage, since it allows the technique to be systematized in a controlled scenario, to be used in adverse situations such as surgical injury to the bile duct.

Acknowledgements

None.

Conflict of Interest

The authors declare that they have no conflicts of interest.

Ethics Statement

The work has been approved by the ethics committee responsible in the workplace.

Funding

Authors do not declare means of financing of the work carried out.

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