WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.074
Volume 8, Issue 4, 785-788. Research Article ISSN 2277– 7105

RELEVANCE OF A DETACHED OBSERVER IN LAPAROSCOPIC CHOLECYSTECTOMY: AN OBSERVATIONAL STUDY

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Article Received on
29 Jan. 2019,

Revised on 19 Feb. 2019,
Accepted on 12 March 2019

DOI: 10.20959/wjpr20194-14518

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ABSTRACT

Bile duct injury is one of the most feared complication of laparoscopic cholecystectomy. Many strategies have been proposed to minimise the incidence of such injuries. In this study we evaluated the role of a bystander surgeon as a detached observer during laparoscopic cholecystectomy for prevention of bile duct injuries. The study was conducted at a district hospital. 382 patients underwent laparoscopic cholecystectomy with a bystander surgeon present during all procedures. None of the patients had a bile duct injury. From this study we concluded that presence of detached observer during laparoscopic cholecystectomy can be a correctional measure aided to prevent a bile duct injury.

KEYWORDS: Laparoscopic cholecystectomy, Bile duct injury, Bystander surgeon, Detached observer.

INTRODUCTION

Laparoscopic cholecystectomy is one of the most common surgical procedures performed on digestive tract and is considered now the gold standard treatment for symptomatic cholelithiasis. The most feared complication of this procedure is injury to bile duct. The incidence of bile duct injury (BDI) in laparoscopic cholecystectomy approaches 0.5%.[1,2] Injuries stem principally from misidentification secondary to visual misperception rather than error of skill, knowledge or judgment.[3] This visual misperception is a result of misplaced cognitive map. A detached observer may be an actual solution for prevention of

misidentification during laparoscopic cholecystectomy. We proposed a hypothesis that a bystander surgeon by monitor can intervene and provide feedback at the earliest before misperception becomes so compelling as to end in an injury. To examine this hypothesis, we conducted an observational study.

MATERIAL AND METHODS

This was a prospective observational cohort study conducted at MABM hospital from September 2016 to September 2018. 382 patients admitted for laparoscopic cholecystectomy for symptomatic gallstones were enrolled. Following history and physical examination all patients were investigated with blood counts, biochemistry and abdominal ultrasound. Pre-anaesthetic check-up was done in all. The operation was done under GA with 4 port technique. Authors 1 and 4 performed all operations. For all procedures either one of the authors was entrusted with the role of a bystander surgeon on an alternate basis. The bystander surgeon would stand by the monitor, watch and observe the procedure with a keen intent and would alert the operating surgeon for if wrong space of dissection was entered or incorrect duct was being dissected. To ascertain this the bystander surgeon would always ensure that the operating surgeon is dissecting ventral to Rouvieres sulcus when present and has achieved critical view of safety before clipping and dividing any structure. Minute to minute feedback is provided by the detached observer in difficult situations so that the surgeon can accept the need for plan modification if by a given hypothesis placement of cognitive map is a misfit. All patients were discharged next day of surgery. None of the patients had a clinical reason to stay in hospital for more than 24 hours. All patients were advised to attend outpatient clinics at regular intervals of 1 week, 2 week, 1month, 3 month and 6 months. Telephonic communication was adopted for any patient who defaulted to visit outpatient clinics. Signs and symptoms suggestive of bile duct injury were noted in a predesigned proforma.

RESULTS

382 patients were included in our study. 298 (78%) were females and 84 (22%) were males. Average age was 43 years (range 16 -82 years). The indications of surgery were chronic cholecystitis in 76%, acute cholecystitis in 23% and biliary pancreatitis in 1% of cases. None of the patients were lost to follow up. 2 patients needed admission in emergency department for an episode of biliary colic. They were investigated with blood counts, blood chemistry, serum amylase and ultrasound abdomen. Investigations turned out to be normal and they

were discharged after they settled with conservative line of management. None of the patients in our study had bile duct injury.

DISCUSSION

As a result of years of training a surgeon accumulates spatial knowledge in a largely subconscious, intuitive way. This is followed by creation and construction of a cognitive map. Surgeons may place their cognitive maps on the presenting surgical environment so that the operation can proceed rapidly. The map makes assumptions about the nature of structures in the field. Placement of a cognitive map in the wrong location creates spatial disorientation which is recognized as a major cause of bile duct injuries.[4]

On the basis of input received from surgical environment subconscious decision is made regarding from (of the ductal anatomy) which in mainly based on experience and memory.[5] The operating surgeon is working 'in a zone' and he may be less amenable to seek cues from the presenting surgical environment. Bystander surgeon for the reason that he is detached is more apt to seek information from surgical field and more likely to recognize misplacement of cognitive map by the operating surgeon preventing spatial disorientation. He is more alert for cues that the incorrect duct is being dissected. He can refute the working hypothesis which the operator has entertained and this can prevent misidentification of duct. "Stopping rules" for modifying or converting the operation can be applied to avoid a surgical mishap in the form of injury to bile duct.

Significance of unexpected observation may go unrecognised by the operating surgeon due to conformation bias.[5] Since detached observer is not committed to a judgement and is free from confirmation bias he may be able to attach significance to these unexpected observation. As mentioned by Sewart in their seminal paper "human performance cannot be pushed to perfection and that most fruitful correction strategy often lies outside the individual''. By stander surgeon can be considered as one such correction strategy.

Our study has few limitations. Sample size is small. It is a non-randomized study. We still believe that our observations are valid and merit consideration. This study may be followed by larger randomized study for confirmation of results.

CONCLUSION

Bile duct injury is one of the most dreaded complications of laparoscopic cholecystectomy. Presence of detached observer during laparoscopic cholecystectomy is a correctional measure aided to prevent a bile duct injury.

REFERENCES

1. Connar S and O.J. Garden. Bile duct injury in the era of laparoscopic cholecystectomy. Br J Surg, 2006; 93: 158-68.
2. Macfadyen et al. Bile duct injury after laparoscopic cholecystectomy. Surgical Endoscopy, 1988; 12: 315-21.
3. Slater K et al. Iatrogenic bile duct injury: the scourge of laparoscopic cholecystectomy. ANZ Journal of Surgery, 2002; **7**2: 83-88.
4. Sutherland F, Dixion E The importance of cognitive map placement in bile duct injuries. Can J surgery, 2017; 60(6): 424-25.
5. Way L W, Stewart L, Gantert W et al. Cause and prevention of laparoscopic bile duct injuries: analysis of 252 cases from a human factor and cognitive psychology perspective. Ann surgery, 2003; 237: 460-9.