Case report

UNUSUAL PUZZLE: DISCOVERY OF A RARE ANATOMICAL VARIATION OF THE BILE DUCT DURING CHOLECYSTECTOMY

abstract

The practice of hepatobiliary surgery requires prior knowledge of the anatomy of the bile ducts and their variations.

The search for "potentially dangerous" anatomical variations during surgical procedures [1 ; 2] is necessary before any surgery, especially planned surgery.

We report the case of a patient undergoing surgery for vesicular lithiasis, in whom intraoperative cholangiography revealed slippage of the posterior paramedian duct.

Systematic intraoperative cholangiography can detect anatomical variations in the bile ducts, thus avoiding life-threatening trauma to the bile ducts.

Key words: bile ducts-anatomical variations-intraoperative cholangiography-cholangio-IRM

INTRODUCTION

The practice of hepatobiliary surgery requires knowledge of the anatomy of the bile ducts and their variations.

The presence of anatomical variations in the bile ducts is classically incriminated in the occurrence of intraoperative accidents.

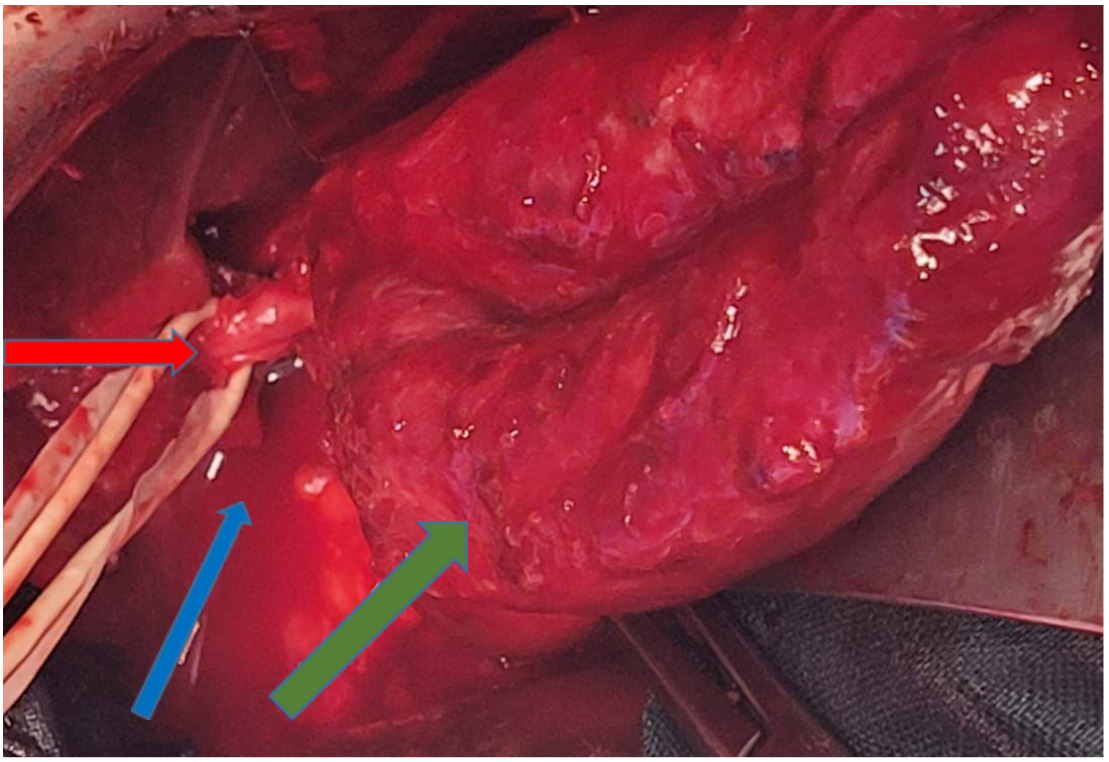
The search for "potentially dangerous" anatomical variations during surgical procedures [1 ; 2] is necessary before any surgery, especially planned surgery.

Cholangio-pancreato-MRI is the non-invasive examination of choice for complete mapping of the biliary tree. It enables analysis of the layout of the extra-hepatic bile ducts, with detection of anatomical variants [3].

case presentation

We report the case of a 60-year-old hypertensive, type II diabetic patient seen in the emergency department of the Mohamed V military training hospital in Rabat, with liver failure and infectious syndrome, and right hypochondrium tenderness. Biological Gb= 18000; CRP= 320, the rest of the work-up was normal. An emergency abdominal ultrasound and CT scan revealed a multilithiasis gallbladder with a large stone embedded in the cystic neck and a wall thickened to 6 mm.

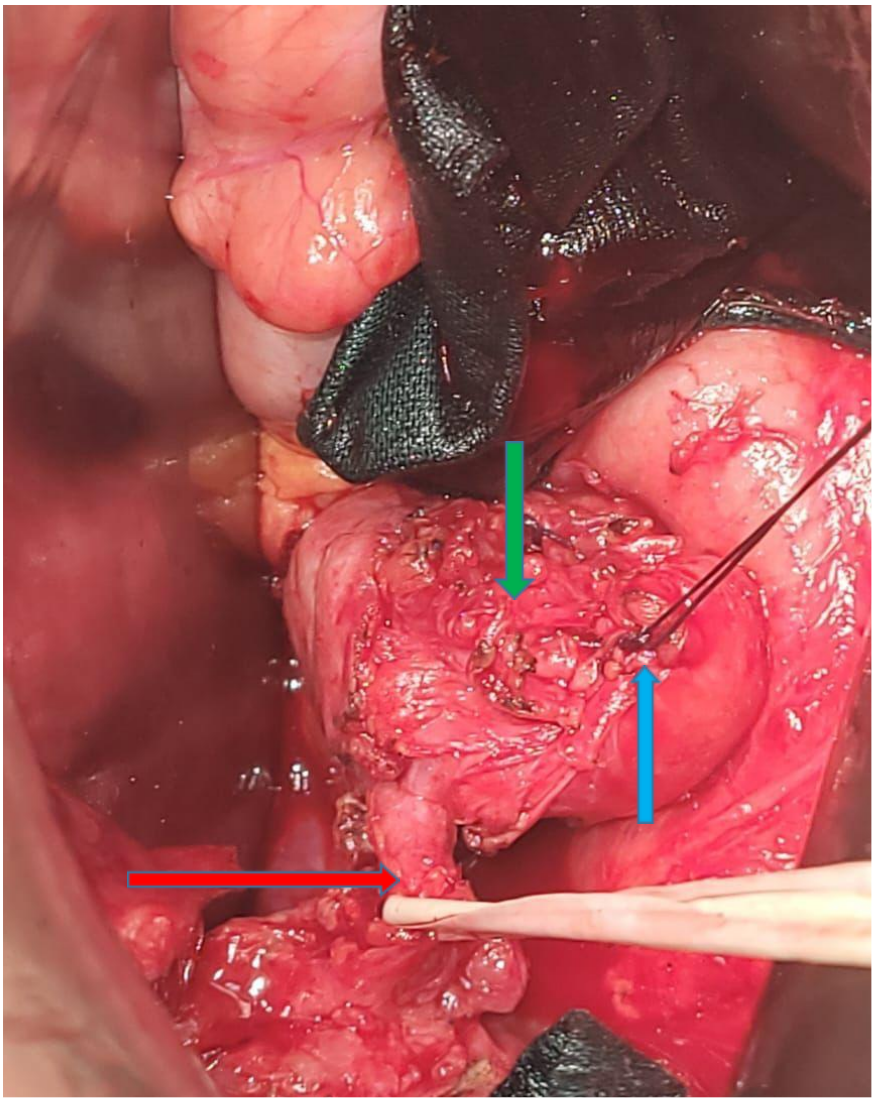
Admitted to the OR, the patient underwent laparoscopic surgery; intraoperatively, during dissection of the gallbladder from its bed, we discovered a slip of the right posterior duct by intraoperative cholangiography (see image), which we respected and put on lake until the end of the procedure with identification, clipping and section of the cystic pedicle without anatomical variation at this level. Further surgery was straightforward.



PICTURE 1: -red arrow: posterior paramedian duct

-blue arrow: main bile duct

-green arrow: gallbladder



PICTURE 2: -Red arrow: posterior paramedian duct

-green arrow: main bile duct

-blue arrow: cystic duct

PICTURE 3: -red arrow: gallbladder

-black arrow: gallstone

DISCUSSION

Intraoperative cholangiography should be performed systematically during any cholecystectomy. By identifying anatomical variations in the bile ducts, it can help to avoid damage to the bile ducts during the operation.

Several studies have described anatomical variations in the bile ducts

Anatomical variations, particularly of the right bile ducts, were present in 12% of cases in a study of 250 intraoperative cholangiograms [4].

Taourel et al. found a right bile duct anomaly in 9% of cases [5].

Tsutsumi et al. in a review of the Anglo-Saxon literature [6], collated 12 cases and reported one case recognized by cholangiography performed during retrograde papillary catheterization [6].

In our case, like that of Heloury Y et al. we discovered an anatomical variation in the right bile duct, notably a slippage of the posterior right duct, which was intimately linked to the posterior surface of the gallbladder, which we dissected meticulously, isolating the hepatic duct in an unusual position.

In the literature, it has been reported that slippage of the right lateral duct is seen in 16% of cases [7], slippage of the right segmental ducts represents 12.4% of cases [3] and slippage of the right paramedian duct (as reported in our study) in 4 to 16% of cases [7,8].

In our observation, this slippage of the paramedian canalIn one study, Taourel et al [5] reported that an aberrant right hepatic duct was seen in 6.5% of cases, as reported by Puent et al (study carried out on 3,845 intraoperative cholangiograms) [9]; these various studies also corroborate with our observation.

CONCLUSION

Biliary surgery is often fraught with pitfalls, leading to incidents or complications that can be very serious.

Systematic intraoperative cholangiography enables us to detect anatomical variations in the bile ducts, thus avoiding any trauma to the bile ducts which could be life-threatening for the patient.

REFERENCES

1- Fletcher DR, Hobbs MS, Tan P et al. Complications of cholecystectomy : risks of the laparoscopic approach and protective effects of operative cholangiography : a population-based study. Ann Surg 1999 ; 229 :449-457.

2- Metcalf AM, Ephgrave KS, Dean TR, Paher JW. Preoperative screening with ultrasonography for laparoscopic cholecystectomy : an alternative to routine intraoperative cholangiography. Surgery 1992 ;112 :813-817.

3- M. Echchikhi et al. Mise au point sur les variantes anatomiques des voies biliaires extra-hépatiques en cholangio-pancréato-IRM et leurs risques de complicationsFocus on anatomical variants of the extrahepatic bile ducts in cholangio-pancreato-MRI and risks of complications
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4- Heloury Y, Leborgne J, Rogez JM, Robert R, Lehur PA, Pannier M, et al. Radiological anatomy of the bile ducts based on intraoperative investigation in 250 cases. Anat Clin 1985 ;7 : 93-102.

5- Taourel P, Bret PM, Reinhold C, Barkun AN, Atri M. Anatomic variants of the biliary tree : diagnosis with MR cholangiopancreatography. Radiology 1996 ; 199 : 521-7.

6- Tsutsumi S, Hosouchi Y, Shimura T, Asao T, Kojima T, Takenoshita S, et al. Double cystic duct detected by endoscopic retrograde cholangiopancreatography and confirmed by intraoperative cholangiography in laparoscopic cholecystectomy : a case report. Hepatogastroenterology 2000 ; 47 : 1266-8.

7- Couinaud C (1957).) Liver: anatomical and surgical studies Paris, Masson

8- Bismuth H, Mutricy J (1992) Biliary tract anomalies. EMC Tech Chir 40-905 Puente SG, Bannura GC. Radiological anatomy of the biliary tract : variation and congenital abnormalities. World J Surg 1983 ;85 :1160-1165