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## CLINICAL ASPECTS AND SURGICAL TECHNIQUE IN MIRIZZI SYNDROME: A SYSTEMATIC REVIEW

Felipe Perucci de Oliveira<sup>1</sup>, Stephanie Guardabassio de Oliveira<sup>1</sup>, Caroline Oliveira da Silva<sup>1</sup>, Miguel Pereira Goulart Neto<sup>1</sup>, Paulo Victor Moreira Ribeiro<sup>2</sup>, Yasmin Fontoura de Azevedo Lourenço<sup>1</sup>, Idiberto José Zotarelli Filho<sup>3,4,6,\*</sup> and Rogério Rodrigo Ramos<sup>5</sup>

<sup>1</sup>Medical Students at the University of Brazil (UB), Fernandópolis, SP, Brazil; <sup>2</sup>Medical Student at Faculdade Das Américas (FAM), São Paulo, SP, Brazil; <sup>3</sup>Doctor of the Zotarelli-Filho Scientific Work, São José do Rio Preto, SP, Brazil; <sup>4</sup>Bentham Science Ambassador, Brazil; <sup>5</sup>Doctor of the Universidade Brasil, Medicine Course, Fernandópolis, SP, Brazil; <sup>6</sup>Faceres - Medical School of São José do Rio Preto, SP, Brazil

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#### \*Corresponding author:

**Idiberto José Zotarelli Filho**

### ABSTRACT

Mirizzi syndrome is described in the 1940s as follows: partial obstruction of the secondary common hepatic duct by gallstones, impacted on the cystic duct or gallbladder infundibulum, associated with the inflammatory response that involved the cystic duct and the common hepatic duct. As it is a rare and delicate condition, differential diagnosis is extremely important, in which the patient's clinical condition is verified through anamnesis and complementary exams, where immediately after the surgical intervention can be performed. This work aims to describe, through a literature review, the clinical aspects and the surgical technique in Mirizzi Syndrome. Were used as a database for research sites containing scientific articles available online such as Virtual Health Library (VHL), Scientific Electronic Library Online (SciELO) and PubMed. 154 articles were found through the descriptors, where after applying the inclusion and exclusion criteria 11 articles remained to write the work. According to the articles surveyed, it is clear that most of them do not report the syndrome as the main diagnosis, possibly because it is a pathology with signs and symptoms very close to other diseases of the bile duct, therefore leaving the syndrome sometimes described in the context of these other diseases. Finally, it concludes that even though the preoperative diagnosis is rare, it should be suspected in individuals undergoing biliary surgery.

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## INTRODUCTION

Pablo Mirizzi, Argentine surgeon, described in the forties about a patient with partial obstruction of the secondary common hepatic duct by gallstones, impacted on the cystic duct or gallbladder infundibulum, associated with the inflammatory response that involved the cystic duct and the hepatic duct common, this presentation has become known as Mirizzi Syndrome (Lacerda, 2014). This pathology is found in only 0.7% to 1.1% of patients undergoing cholecystectomy, its importance should be emphasized not only by the high rate of biliary iatrogenesis in these conditions but also because of the radiological morphology and even the local macroscopy. be confused with neoplasia (Mico Obama, 2015). Thus, differential diagnosis is of utmost importance, where the patient's clinical condition is verified through anamnesis, where it is initially investigated: abdominal pain, jaundice,

choloria, nausea, vomiting, fecal acolia, and palpable abdominal mass. The presence of these symptoms also requires complementary diagnosis and laboratory tests (Cavalcanti, 2002). Thus, after diagnostic confirmation, surgical intervention to correct the syndrome is the procedure most recommended for its signs, symptoms, and complications. In addition, in the post-surgical period, the vast majority of patients evolve with clinical improvement and are able to be discharged (Reverdito, 2016). Therefore, the present study aims to describe through a literature review on the clinical aspects and the surgical technique in Mirizzi Syndrome.

## METODOLOGY

It is a literature review, in which sites containing scientific articles available online such as Virtual Health Library (VHL),

Scientific Electronic Library Online (Scielo) and PubMed were used as a database for research, according to PRISMA (Systematic Review). A total of 154 articles were found through the descriptors, the searches were carried out separately: 11 articles using the descriptor Mirizzi syndrome, 125 with the descriptor jaundice obstructive and 18 articles with the descriptor biliary surgery. The inclusion criteria for the material were articles available in full, whose research context described the surgical technique in Mirizzi syndrome and its clinical aspects, excluding those that did not meet the established criteria. In the end, 11 articles were selected, organized in forms containing identification data for the articles and then a synthesis of each one was made to learn about the surgical technique and the clinical aspects of Mirizzi syndrome.

## DEVELOPMENT

**Classification of Mirizzi syndrome:** The classification concerning Mirizzi Syndrome is established in four types: I) extrinsic compression of the common bile duct by calculation in the vesicular neck or cystic duct; II) cholecystobiliary fistula with the erosion of diameter less than 1/3 of the circumference of the common bile duct; III) erosion with a diameter greater than 2/3 of the circumference of the common bile duct, and IV) complete destruction of the common bile duct (Waisberg, 2005). Currently, one more type of case is included in Mirizzi Syndrome, which was classified as type V. It is any of the cases added to a cholecystenteric fistula as an aggravation of the situation. Fistulas allow communication between the organs, which occur due to the dryness of the serosa of the small intestine and colon, thus contributing to the worsening of the disease (Lacerda, 2014). A very rigorous analysis of the condition is necessary for the correct diagnosis of the syndrome. Thus, some methods that have image resources should be performed, as in the case of ultrasonography and nuclear magnetic resonance in the preoperative phase, or, also, cholangiography can be performed during the intraoperative period (Milone, 2014). The surgical correction will depend on which type is found in each patient, so it is known that the recommended procedures in each case are: type I - partial cholecystectomy; type II - closure of the fistula with suture or choledocoplasty; type III - choledocoplasty; type IV - biliodigestive anastomosis; type V- The organs that may be involved in the cholecystenteric fistula are a stomach, duodenum, and colon. The procedure of choice for cholecystenteric fistula with bile ileum is enterolithotomy and closure of the fistula, and the fistula without bile ileum is the closure of the fistula orifice (Marson, 2004).

**Clinical aspects and surgical technique:** Large stones and acute cholecystitis with pressure necrosis and local inflammatory reaction of the calculus inside the common hepatic duct, produce jaundice with variable components of extrinsic and intrinsic compression by calculating blocking the bile flow, which can progress to cholangitis (Crema, 2004). Jaundice occurs as a result of this disease is inseparable from choledocholithiasis and the subsequent inflammatory and fibrotic process becomes hampered, in some situations, by the diagnosis of bifurcation of the bile duct or gallbladder (Crema, 2004). Removing the stone from the bottom of the gallbladder, which is generally scleroatrophic, is an appropriate tactic. With this, we can identify the extent and location of erosion in the main bile duct and use it to remove other possible choledochal calculations (Jones, 2017). Even with the intraoperative

radiological study, which can be performed from the placement of a drain in the narrow fistulous canal, the possibility of cholangiocarcinoma cannot be excluded, thus highlighting the importance of the anatomical-pathological study of freezing, when the diagnostic doubt of the etiology of obstructive jaundice (Reverdito, 2016). Several endoscopic and surgical methods have been proposed in the literature to repair these defects in the bile duct (Marson, 2004). When the main bile duct is not completely sectioned, most of these lesions can be repaired through a choledocoplasty, using gallbladder tissue, with the placement of a Kher drain distally to the closure. When the section of the choledochal is complete, or when the aforementioned technique is deemed impossible to be performed due to existing fibrosis, or even due to insufficient available vesicular tissue, hepaticojejunostomy is a recommended option (Lacerda, 2014).

**Surgical intervention as a treatment:** The surgical initiative, through some techniques that aim to repair the damages generated by the obstructions and inflammations on the bile duct, different surgeries are performed, based on some aspects, such as the patient's anatomy, in which region is affected to a greater degree and which the classification of the syndrome, since it has more than 4 types. Another issue to be analyzed is the less invasive surgical method, which will try to solve the problem without leaving trauma or injuries in the area of coverage (Fonseca-Neto, 2008). In the early period of the discovery of this pathology, in 1987, surgical techniques were somewhat unknown, as it is a new syndrome. However, the evolution of medicine went hand in hand with the development of the disease and provided improvements in surgery. Partial cholecystectomy and laparoscopic cholecystectomy were used, a safe, effective method that allows the removal of bile duct stones. This technique has several advantages, such as decreased pain in the postoperative period, less trauma, reduced time in hospital and also generates less edema (Fonseca-Neto, 2008).

Since the twentieth century, it has been used in the case of cholecystobiliary fistula, dissection of the bile duct to perform cholecystectomy, with conventional antegrade cholecystectomy being performed. This surgery is performed from the bottom to the duct, through an incision in the abdomen and a Kocher incision (right subcostal), which is the most used. In cases of intense inflammation, Kehr drainage is performed for patients who need an operation quickly. In most cases, biliodigestive anastomosis is performed, with the union of an extrahepatic bile duct segment with a digestive tract segment, reconstructing the bile ducts. In a single type IV case, cholecystojejunostomy was used, which is the splice between the vesicle and the small intestine (Lacerda, 2014). Initially, the patient is searched for symptoms, then the clinical signs presented are identified and, afterward, several consultations are made to really diagnose him with Mirizzi Syndrome. Before choosing the type of surgery to be performed, it is necessary to analyze whether this patient does not have any variation in his body structure or has other diseases, which in some way can lead to complications in the surgical evolution. To eliminate doubts, specific exams are essential to show the conditions and his resistance to the invasive procedure (Beltrán, 2012). The question of assessing the conditions of the patient to be submitted to surgery defines a reduction in medical errors and worsens in his health condition. For example, inflammations need to be seen in degree, affected

area, if the lesion of the bile duct has been generated, generating perfusions and even if there has been tissue collapse of the proximal regions. It is essential to monitor the progression of the surgeries, thus verifying if there is a need for corrections to be carried out in order to reduce the different complications as much as possible (Milone, 2014).

### Conclusion

Even with the preoperative diagnosis being rare in patients with Mirizzi Syndrome, due to the clinical manifestation being associated with other pathologies such as cholelithiasis, it should be suspected when the repetition of the latter pathology, that is, its chronicity, because the relationship with the syndrome is now considered to be quite narrow. In this case, specific to individuals undergoing biliary tract surgery, the surgeon is advised to promptly diagnose the syndrome during the intraoperative period to avoid inadvertent biliary injuries. Despite the era of laparoscopic cholecystectomy, the open method should still be the one of choice.

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