

---

## **Pancreatitis as a Consequence of Endoscopic Retrograde Cholangiopancreatography: A Comprehensive Review of the Literature from a Case Report**

**Deicy Susana Rendón Vargas<sup>1</sup>, Emmanuel Montoya Torres<sup>2</sup>, Manuel Román Vargas<sup>3</sup>, Héctor Adrián Salas Rivas<sup>4</sup>**

<sup>1,3,4</sup>Hospital General de Zona # 2 Dr Efrén Correa Magallanes Instituto Mexicano del Seguro Social, Fresnillo, Zacatecas, México.

<sup>2</sup>Hospital General Regional #110 Oblatos del Instituto Mexicano del Seguro Social, Guadalajara, Jalisco, México.

---

### **ABSTRACT**

Post ERCP pancreatitis, also known as post-endoscopic retrograde cholangiopancreatography pancreatitis, is a potentially serious complication that can occur after this endoscopic procedure. It is characterized by acute inflammation of the pancreas, triggered by the manipulation and trauma induced during ERCP. This clinical condition manifests with severe abdominal pain, nausea, vomiting, bloating and fever. It varies in severity and may be associated with significant complications, such as pancreatic pseudocysts, abscesses, systemic infections, gastrointestinal bleeding, bile duct and pancreatic duct obstruction, as well as the possibility of pancreatic necrosis.

Management involves a multidisciplinary approach, including supportive measures, analgesic therapy and, in severe cases, hospitalization and additional procedures such as percutaneous drainage or surgery. To prevent this complication, precautions are recommended during ERCP, such as the use of aseptic techniques, careful handling of endoscopic instruments and prophylactic use of medications. In conclusion, post-ERCP pancreatitis requires early diagnosis, an appropriate therapeutic approach and close surveillance to avoid adverse consequences and promote patient recovery.

---

### **ARTICLE DETAILS**

**Published On:**  
**04 July 2023**

**Available on:**  
<https://ijmscr.org/>

---

### **INTRODUCTION**

Post ERCP pancreatitis, also known as post-endoscopic retrograde cholangiopancreatography pancreatitis, is a potentially serious complication that can occur after this endoscopic procedure. ERCP is a procedure used to diagnose and treat disorders of the biliary and pancreatic system, involving the insertion of an endoscope through the gastrointestinal tract to access these areas.<sup>1,2</sup>

Post ERCP pancreatitis is characterized by inflammation of the pancreas, caused by the manipulation and trauma that occurs during the procedure. Insertion of the endoscope and injection of contrast media into the pancreatic ducts can damage pancreatic tissue and trigger an inflammatory response in the organ.<sup>3</sup>

This condition manifests with symptoms that include severe abdominal pain, usually in the epigastric region and upper abdomen, nausea, vomiting, bloating and fever. These symptoms may appear shortly after the procedure or may develop gradually over the next 24-48 hours.<sup>4</sup>

Post ERCP pancreatitis, also known as post-endoscopic retrograde cholangiopancreatography pancreatitis, is a

Potentially serious complication that can occur after this endoscopic procedure. ERCP is a procedure used to diagnose and treat disorders of the biliary and pancreatic system, involving the insertion of an endoscope through the gastrointestinal tract to access these areas.<sup>5</sup>

Post ERCP pancreatitis is characterized by inflammation of the pancreas, caused by the manipulation and trauma that occurs during the procedure. Insertion of the endoscope and injection of contrast media into the pancreatic ducts can damage pancreatic tissue and trigger an inflammatory response in the organ.<sup>6</sup>

This condition manifests with symptoms that include severe abdominal pain, usually in the epigastric region and upper abdomen, nausea, vomiting, bloating and fever. These symptoms may appear shortly after the procedure or may develop gradually over the next 24-48 hours.<sup>7</sup>

## Pancreatitis as a Consequence of Endoscopic Retrograde Cholangiopancreatography: A Comprehensive Review of the Literature from a Case Report

Post ERCP pancreatitis is classified into different grades according to its severity. In mild cases, symptoms may resolve spontaneously or with conservative medical treatment, including bowel rest, intravenous fluids and analgesic therapy for pain control. However, in more severe cases, hospitalization of the patient and intervention by a specialized medical team may be necessary.<sup>7</sup>

Complications of post-ERCP pancreatitis can be significant and varied. These include pancreatic pseudocyst formation, abscesses, systemic infections, gastrointestinal bleeding, bile duct and pancreatic duct obstruction, and in rare cases, even pancreatic necrosis. These complications may require additional procedures, such as percutaneous drainage or even surgery, for treatment and resolution.<sup>8,9</sup>

To reduce the risk of post-ERCP pancreatitis, precautions should be taken during the procedure, such as the use of aseptic techniques, careful handling of endoscopic instruments, and administration of prophylactic medications such as angiotensin-converting enzyme inhibitors. In addition, careful evaluation of the patient's risk factors, such as a history of previous pancreatitis, gallstones, chronic pancreatitis, pancreatic duct obstruction and elevated pancreatic enzyme levels, is recommended.<sup>10</sup>

### TARGET

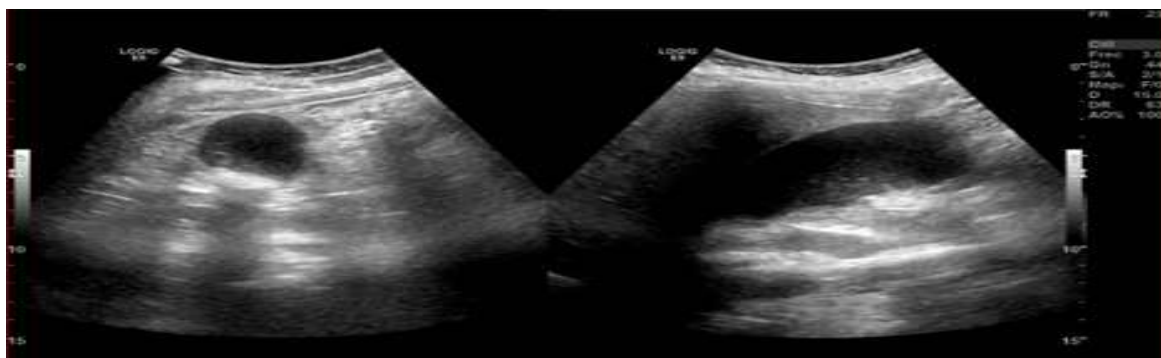
To document a clinical case of pancreatitis associated with endoscopic retrograde cholangiopancreatography.

### CASE PRESENTATION

76-year-old female, hypertensive and diabetic of long evolution, who began her current condition on 05/26/23 with a picture characterized by colicky abdominal pain predominantly in the right hypochondrium, eva 5/10, without irradiation, intermittent, without aggravating or extenuating factors, associated with nausea and vomiting of food content, so she went to the emergency room on 06/02/23 on admission, physical examination and normal vital signs. A liver and biliary tract ultrasound was requested, reporting dilatation of the intrahepatic and extrahepatic biliary tract with an 11 mm choledochus (Fig. 1), as well as a gallbladder (Fig. 2).), as well as a distended biliary vesicle of 45x45 mm with biliary sludge in its interior and lithium of small elements (Fig.2). For this reason it was decided to take laboratory tests reporting total bilirubin of 6.3 and direct bilirubin of 5.8. Endoscopic retrograde cholangiography was performed on 06/06/23 reporting normal intrahepatic biliary tract and hepatocholedochus of 12mm with irregular filling defects, biliary sphincterotomy of 10mm was performed, and by means of balloon sweeping biliary sludge extraction was achieved, finally immediate emptying was verified.



**Fig.1 Thickened common bile duct.**



**Fig.2 Ultrasound of gallbladder.**

On 06/07/23 the patient reported abdominal pain predominantly in the epigastrium, so post CPB control labs

were taken on 06/07/23 reporting lipase of 1875 and amylase of 395, as well as total bilirubin of 2 and direct bilirubin of

## Pancreatitis as a Consequence of Endoscopic Retrograde Cholangiopancreatography: A Comprehensive Review of the Literature from a Case Report

1.8, so a diagnosis of post CPB pancreatitis was made. Management was started with intravenous hydration, analgesia and fasting. The patient evolved favorably. Laparoscopic cholecystectomy was performed on 06/21/23, with the following post-surgical findings: 6x3x3cm gallbladder, list of medium elements inside, thin wall, dilated cystic artery, 1mm cystic artery, normal bile duct with subsequent discharge on day 22/ 06/23.

Conclusions: Post-cretic pancreatitis is one of the most frequent adverse complications encountered. Its incidence ranges from 1 to 40% in different studies due to the heterogeneity of the populations studied, the experience of the endoscopist, and differences in the technique.

### CONCLUSIONS

In conclusion, post-ERCP pancreatitis is a complication of an inflammatory nature that can arise secondary to the performance of endoscopic retrograde cholangiopancreatography. The invasive manipulation and tissue trauma induced during this procedure can trigger an inflammatory response in the pancreatic tissue, resulting in acute and potentially severe inflammation of the pancreas.

Post ERCP pancreatitis presents with a variety of clinical manifestations, including severe abdominal pain, nausea, vomiting, bloating and fever. These symptoms may manifest immediately after ERCP or may develop gradually over the next 24-48 hours. Recognition of these signs and symptoms is critical for early diagnosis and appropriate intervention.

The management of post-ERCP pancreatitis depends on the severity of the disease. In mild cases, symptoms may resolve spontaneously or with supportive measures such as bowel rest, intravenous hydration and analgesic therapy for pain relief. However, in more severe cases, hospitalization and a multidisciplinary approach to patient care may be necessary. It is important to note that post-ERCP pancreatitis can be associated with significant complications that require prompt attention. These complications may include pancreatic pseudocyst formation, abscesses, systemic infections, gastrointestinal bleeding, bile duct and pancreatic duct obstruction, as well as the rare but serious possibility of pancreatic necrosis. These complications may require additional interventions, such as percutaneous drainage or even surgery, in order to avoid long-term sequelae and promote patient recovery.

To prevent post-ERCP pancreatitis, the use of preventive measures during the procedure is recommended, such as proper aseptic techniques, careful handling of endoscopic instruments, and the prophylactic use of medications, such as angiotensin-converting enzyme inhibitors. In addition, a thorough evaluation of the patient's risk factors, such as history of previous pancreatitis, presence of gallstones, chronic pancreatitis, pancreatic duct obstruction, and elevated pancreatic enzyme levels, should be performed.

### REFERENCES

- I. Cotton PB, Garrow DA, Gallagher J, et al. Risk factors for complications after ERCP: A multivariate analysis of 11,497 procedures over 12 years. *Gastrointest Endosc* 2009; 70:80-8. DOI: 10.1016/j.gie.2008.10.039.
- II. Loperfido S, Angelini G, Benedetti G, et al. Major early complications from diagnostic and therapeutic ERCP: A prospective multicenter study. *Gastrointest Endosc* 1998; 48:1-10. DOI: 10.1016/S0016-5107(98)70121-X
- III. Masci E, Toti G, Mariani A, et al. Complications of diagnostic and therapeutic ERCP: A prospective multicenter study. *Am J Gastroenterol* 2001; 96:417-23. DOI: 10.1111/j.1572-0241.2001.03594.x
- IV. Vandervoot J, Soetikno RM, Tham TC, et al. Risk factors for complications after performance of ERCP. *Gastrointest Endosc* 2002;56:652-6. DOI: 10.1016/S0016-5107(02)70112-0
- V. Elmunzer BJ, Scheiman JM, Lehman GA, et al. A randomized trial of rectal indomethacin to prevent post-ERCP pancreatitis. *N Engl J Med* 2012;366:1414-22. DOI: 10.1056/NEJMoa1111103.
- VI. Fazel A, Quadri A, Catalano MF, et al. Does a pancreatic duct stent prevent post-ERCP pancreatitis? A prospective randomized study. *Gastrointest Endosc* 2003;57:291-4. DOI: 10.1067/mge.2003.124.
- VII. Smithline A, Silverman W, Rogers D, et al. Effect of prophylactic main pancreatic duct stenting on the incidence of biliary endoscopic sphincterotomy-induced pancreatitis in high-risk patients. *Gastrointest Endosc* 1993;39:652-7. DOI: 10.1016/S0016-5107(93)70217-5
- VIII. Sofuni A, Maguchi H, Itoi T, et al. Prophylaxis of post-ERCP pancreatitis by an endoscopic pancreatic spontaneous dislodgement stent. *Clin Gastroenterol Hepatol* 2007;5:1339-46. DOI: 10.1016/j.cgh.2007.07.008.
- IX. Tarnasky PR, Palesch YY, Cunningham JT, et al. Pancreatic stenting prevents pancreatitis after biliary sphincterotomy in patients with sphincter of Oddi dysfunction. *Gastroenterology* 1998;115:1518-24. DOI: 10.1016/S0016-5085(98)70031-9
- X. Ito K, Fujita N, Noda Y, et al. Can pancreatic duct stenting prevent post-ERCP pancreatitis in patients who undergo pancreatic duct guidewire placement for achieving selective biliary cannulation? A prospective randomized controlled trial. *J Gastroenterol* 2010;45:1183-91. DOI: 10.1007/s00535-010-0268-7