REVISTA ESPAÑOLA DE
ENFERMEDADES DIGESTIVAS
The Spanish Journal of Gastroenterology

Title:
Management of duodenal perforations after endoscopic retrograde cholangiopancreatography

Authors:
Francisco Miguel González Valverde, Antonio José Fernández López

DOI: 10.17235/reed.2019.5875/2018
Link: PubMed (Epub ahead of print)

Please cite this article as:
González Valverde Francisco Miguel, Fernández López Antonio José. Management of duodenal perforations after endoscopic retrograde cholangiopancreatography. Rev Esp Enferm Dig 2019. doi: 10.17235/reed.2019.5875/2018.

REVISTA ESPAÑOLA DE
ENFERMEDADES DIGESTIVAS
The Spanish Journal of Gastroenterology

CE 5875 inglés

Management of duodenal perforations after endoscopic retrograde cholangiopancreatography

Fco. Miguel González-Valverde[1,2] and Antonio José Fernández-López[1]

[1]General Surgery Service. Hospital General Universitario Reina Sofía. Murcia, Spain. [2] Department of Surgery, Pediatrics, Ginecology and Obstetrics. Universidad de Murcia. Murcia, Spain

Correspondence: Fco. Miguel González Valverde
e -mail: migova67@gmail.com

Key words: Endoscopic retrograde cholangiopancreatography. Complications. Perforations. Conservative management.

Dear Editor,

We have read the paper by Jiménez-Cubedo on post-endoscopic retrograde cholangiopancreatography (ERCP) perforations (1) and would like to describe our experience with regard to the conservative management. Three hundred and forty-two ERCPs performed from 2012 to 2017 were retrospectively analyzed (Table 1). Twelve (2.8%) duodenal perforations occurred and nine (75%) cases were initially managed conservatively, which were successful only in three cases (25%). Stapfer's classification (2) includes four types (Table 1); type IV rarely requires an intervention and type I usually requires surgery from the outset (3). In our series, type-II lesions were predominant, followed by type IV perforations.

The post-ERCP perforation rate decreases as experience increases, as shown by the results obtained by Jiménez-Cubedo (1). Conservative management may have some advantages over surgery in selected patients. However, early identification of these patients is challenging and a delay in surgery is associated with high rates of morbidity and mortality. Correlations between computed tomography (CT) findings and clinical

status may be helpful. Watchful waiting may be appropriate when there is pain without peritonism and in the absence of collections on CT scans. In contrast, significant contrast medium extravasation, intraperitoneal or retroperitoneal collections, massive subcutaneous emphysema and clinical worsening are indications for immediate surgical treatment (4). Open surgery remains the best option for the treatment of post-ERCP perforations, as shown by our data and those from other series. Endoscopic management requires an experienced team and appropriate patient and perforation features (4).

We cannot recommend conservative management for post-ERCP perforation as, in our experience, outcomes are poor. However, we undoubtedly agree with Dr. Jiménez-Cubedo with regard to the recommendation of an individual approach for each patient. Close follow-up by a surgeon is required and surgical indication becomes as much an art as science. The success is largely dependent on the experience and clinical judgment of the treating professionals.

References

1. Jiménez Cubedo E, López Monclús J, Lucena de la Poza JL, et al. Revisión de las perforaciones duodenales tras colangiopancreatografía retrógrada endoscópica en el Hospital Puerta de Hierro de 1999 a 2014. Rev Esp Enferm Dig 2018;110(8):515-9. DOI: 10.17235/reed.2018.5255/2017

2. Stapfer M, Selby RR, Stain SC, et al. Management of duodenal perforation after endoscopic retrograde cholangiopancreatography and sphincterotomy. Ann Surg 2000;232:191-8. DOI: 10.1097/00000658-200008000-00007

3. Yu DW, Hong MY, Hong SG. Endoscopic treatment of duodenal fistula after incomplete closure of ERCP-related duodenal perforation. World J Gastrointest Endosc 2014;6(6):260-5. DOI: 10.4253/wjge.v6.i6.260

4. Salord S, Gornals JB, Maisterra S, et al. Sellado endoscópico con clip OTSC de una perforación duodenal durante un drenaje biliar guiado por USE. Rev Esp Enferm Dig 2012;104:489-90. DOI: 10.4321/S1130-01082012000900007

5. Palomeque Jiménez A, González Puga C, Pérez Cabrera B, et al. Tratamiento conservador de la perforación duodenal tras realización de colangiopancreatografía

retrograda endoscópica terapéutica. Gastroenterol Hepatol 2015;38(4):285-6. DOI: 10.1016/j.gastrohep.2014.03.016

REVISTA ESPAÑOLA DE
ENFERMEDADES DIGESTIVAS
The Spanish Journal of Gastroenterology

Table 1. Characteristics of patients with a post-ERCP perforation during the period 2012-2017

Total ERCPs:	342
Perforations	12 (2.8%)
Period	2011-2017
Sex	
Male	5 (42%)
Female	7 (58%)
Age (years)	65.7 ± 19.2 (range: 30-84)
Procedure indication	
Choledocholithiasis	8 (66.6%)
Cholangitis	2 (16.6%)
Pancreatitis	1 (8.3%)
Jaundice under study	1 (8.3%)
Elective/Emergency	10/2
Comorbidities	
Diabetes	3
HBP	4
Anticoagulation	1
COPD	3
Initial management	
Surgical	3
Conservative	9
Reason for changing to surgical approach	Organ failure or sepsis in three cases (33.3%) Lab or radiographic worsening in a stable patient in four cases (44.5%) On-call surgeon's judgment in two cases (22.3%) One patient re-operated for abdominal obstruction
Surgical findings	Biliary peritonitis in five cases (55.6%) Biliary collection in two cases (22.2%) Absence of peritonitis or collection in two cases

	(22.2%). Perforation orifice identified in one case
Conservative management	Empiric antibiotic therapy: Meropenem (58%) Ciprofloxacin-metronidazole (17%) Piperacillin/tazobactam-metronidazole (17%) Piperacillin/tazobactam (8%) Parenteral nutrition in eight cases (67%) over a mean 13.2 days NGT: 12 cases
Postoperative hospitalization days: Initial surgical management Initial conservative management Mean ICU stay: Surgical patients Non-surgical patients	 19 ± 15.2 days 33.8 ± 24 days 12 ± 8.4 days (range: 3-28) 3 ± 2.1 days
Death Initial conservative management Initial surgical management	3 (25%) 1 2 (severe acute pancreatitis post-ERCP)
Stapfer's classification according to severity and perforation site	
Type I Medial or lateral duodenal wall perforation	2
Type II Periampullary region	6
Type III Bile or pancreatic duct	1
Type IV Retroperitoneal micro-perforations from insufflated air	3

ERCP: endoscopic retrograde cholangiopancreatography; HBP: high blood pressure; COPD: chronic obstructive pulmonary disease; NGT: nasogastric tube; ICU: intensive

care unit.