

Bronchial-Pancreatic Fistula: Diagnostic-Therapeutic Approach

Fístula pancreático-bronquial: abordaje diagnóstico-terapéutico

Pleuro-pulmonary complications in the course of chronic pancreatitis are uncommon. Bronchial-pancreatic fistula is a rare complication; fewer than thirty cases have been published in the literature.¹⁻⁸

We present the case of a forty-year-old male with a history of chronic pancreatitis and alcoholic liver disease who came to the Accident and Emergency Department with cough, expectoration and fever. Massive left-sided pleural effusion was revealed on chest X-ray and a chest drain was inserted. The pleural fluid showed amylase levels of 57 504 IU/L, compatible with pancreatico-pleural fistula. The patient had a favourable recovery and was discharged.

A month later he came to the Accident and Emergency Department again presenting with haemoptysis and abdominal pain. An emergency fibro-bronchoscopy was performed, that revealed bleeding from the left-sided bronchial tree. Samples were taken via bronchial alveolar lavage with amylase levels of 58 300 IU/L, confirming the existence of a bronchial-pancreatic fistula. Due to persistent haemoptysis, an arteriogram was requested and a bronchial branch from the left mammary artery was embolised (Fig. 1). After the patient had stabilised, an abdominal computed tomography scan was requested which revealed the existence of a cystic lesion in the body and tail of the pancreas, collections in the left anterior pararenal space, dilatation of the Wirsung duct and multiple calcifications (Fig. 2). Because of the progression of the process, elective surgery was indicated and a corporal-caudal pancreatectomy was performed with Roux-en-Y pancreato-jejunostomy and drainage of collections. The patient presented a favourable post-operative course and was discharged on the ninth day after surgery. Two years later the patient is asymptomatic.

Bronchial-pancreatic fistula forms part of a process involving the rupture of the pancreatic duct towards the retro-peritoneum, the migration of secretions towards the chest via the oesophageal hiatus or the diaphragm with the formation of pancreatico-pleural fistula and subsequent disruption of the bronchial tree.¹⁻⁴ Respiratory symptoms prevail over abdominal symptoms in the form of productive cough, dyspnoea and recurrent pneumonia.⁵ Only in a few cases, such as ours, is haemoptysis the initial symptom. Although the pancreatic enzymes present in the bronchial tree are not active, they do have an irritating effect on the respiratory mucosa, causing tracheo-bronchitis.⁴

Determining amylase levels in biological fluids is essential for diagnosis; high levels are frequently found in the pleural fluid in cases of chronic pancreatitis with associated pleural effusion, although they can appear in oesophageal perforations,

para-pneumonic effusions, etc. Only in cases of pancreatico-pleural fistula do amylase levels exceed 50 000 IU/L. Bronchoscopy with biochemical determination is a rapid and effective technique for diagnosing bronchial-pancreatic fistula.⁴ It enables samples to be obtained via broncho-alveolar lavage to rule out contamination of sputum with salivary amylase.³

Other tests are also used, such as endoscopic retrograde cholangio pancreatography, computed tomography and cholangio-MRI. Not only can endoscopic retrograde cholangio pancreatography display the anatomy of the Wirsung duct and even show the trajectory of the fistula in the direction of the pleural cavity, it can also enable the placement of stents in the event of duct stenosis.

The Wirsung duct can also be assessed by cholangio-MRI; moreover, this technique shows the pancreatic parenchyma and whether there are extra-pancreatic complications.⁶

Thoracoabdominal computed tomography can also reveal pancreatic atrophy, calcifications, peripancreatic collections, dilatation of the Wirsung duct and, occasionally, the trajectory of the fistula.^{7,8}

Treatment should be conservative initially, with the stabilisation of the patient, parenteral nutrition, administration of octreotide and drainage of collections. The majority of patients evolve favourably with this treatment, especially those not presenting with duct stenoses.⁴ If conservative treatment fails, additional treatment is necessary. The endoscopic placement of a stent has obtained successful

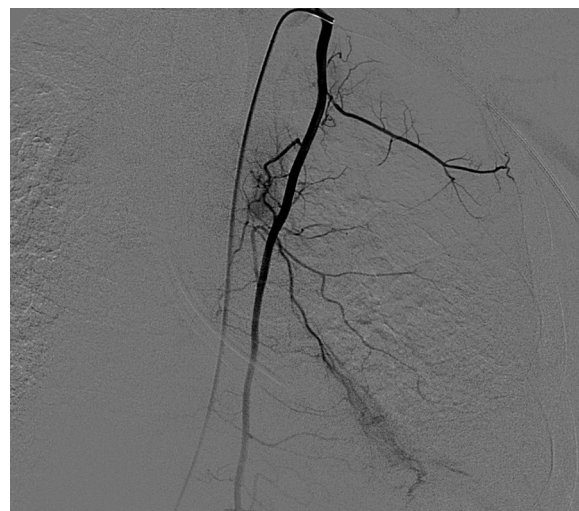


Fig. 1 – Selective arteriography showing active bleeding in the bronchial branch.

* Please cite this article as: Rodríguez Sánchez A, Martín Álvarez JL, Gómez Ramírez J, Martín Pérez E, Larrañaga Barrera E. Fístula pancreático-bronquial: abordaje diagnóstico-terapéutico. Cir Esp. 2013;91:690-691.

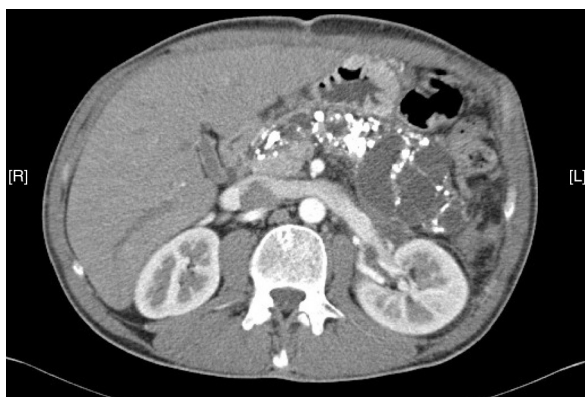


Fig. 2 – Computed tomography scan image with dilatation of the Wirsung duct, calcifications and cystic lesion in the body and tail of the pancreas.

results in patients with stenosis of the pancreatic duct alone. However, patients with multiple stenoses, complete disruption of the duct, or large cysts do not usually respond to this treatment and require surgery.⁷ Distal pancreatectomy and pancreato-jejunostomy are the most frequently used surgical techniques.^{3,4}

Bronchial-pancreatic fistula secondary to pancreatitis is an uncommon clinical condition, which should be taken into account in patients presenting with pleuro-pulmonary symptoms.

Conflict of interest

The authors declare there is no conflict of interest.

Acknowledgements

To the Department of General and Digestive Surgery of La Princesa University Hospital, for allowing us to undertake the work.

To the authors for contributing their work towards the completion of this article.

To the editorial board of *Cirugía Española* for considering this article for publication.

REFERENCES

1. Dignan AP. Pancreatico-bronchial fistulae. *Postgrad Med J*. 1965;41:158–62.
2. Kaye M. Pleuropulmonary complications of pancreatitis. *Thorax*. 1968;23:297–306.
3. Thomson BN, Wigmore SJ. Operative treatment of pancreatico-bronchial fistula. *HPB*. 2004;6:37–40.
4. Yasuda T, Ueda T, Fujino Y, Matsumoto I, Nakajima T, Sawa H, et al. Pancreaticobronchial fistula associated with chronic pancreatitis: report a case. *Surg Today*. 2007;37:338–41.
5. Buelta C, Velayos B, Abril C, Esteban E, Trueba J, Fernández L, et al. Fistula pancreaticobronquial como primera manifestación de pseudoquistes pancreáticos. *Gastroenterol Hepatol*. 2006;29:273–5.
6. Materne R, Vranckx P, Pauls C, Coche E, Deprez P, Van Beers B. Pancreaticopleural fistula: diagnosis with magnetic resonance pancreatography. *Chest*. 2000;117:912–4.
7. Ali T, Srinivasan N, Le V, Chimpiri AR, Tierney W. Pancreaticopleural fistula. *Pancreas*. 2009;38:26–31.
8. Davidian M, Koo A. Pancreaticobronchial fistula diagnosed by combined ERP and CT. *AJR*. 1996;166:53–4.

Ana Rodríguez Sánchez*, José Luis Martín Álvarez, Joaquín Gómez Ramírez, Elena Martín Pérez, Eduardo Larrañaga Barrera

Servicio de Cirugía General y del Aparato Digestivo, Hospital La Princesa, Madrid, Spain

*Corresponding author.

E-mail address: ana.rodriquez@aecirujanos.es (A. Rodríguez Sánchez).

2173-5077/\$ – see front matter

© 2012 AEC. Published by Elsevier España, S.L. All rights reserved.