Biliopancreatic Diseases, Endoscopic Approaches Combining ERCP, EUS & MRI

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Biliopancreatic endotherapy has dramatically changed over the last 20 years and even more quickly during the last decade. ERCP was initially playing a central role for both diagnosis and therapy and has seen its role dramatically reduced for imaging of the biliopancreatic area, while it was more and more focused on therapy. The role of imaging has been largely replaced by magnetic nuclear resonance and biliopancreatic reconstruction (magnetic resonance cholangiopancreatography : MRCP). The only remaining indication for diagnostic ERCP being tissue sampling.

MRCP can visualize the biliary and pancreatic ducts in physiological condition, as a projectional image that simulates contrast radiography. The information provided is widely interpretable as it was the case with diagnostic ERCP. Its accuracy and correlation with ERCP have been demonstrated in variety of biliary and pancreatic diseases. Its major advantage is that it requires neither endoscopy nor contrast injection nor irradiation and is devoid of any risk of complication. In addition, its performance is not only limited to the biliopancreatic duct but it can also visualize the parenchyma, the blood vessels, rendering possible an “all-in-one MR staging” which is of particular interest before taking a decision of treatment for biliopancreatic malignancies. The availability of MRCP has significantly reduced the total number of ERCPs in many centers while most of these procedures became purely therapeutic. The advantage is that it can also visualize the biliopancreatic ducts in their physiological state as well as investigate their response to stimulation. The dynamic magnetic resonance pancreateography obtained after secretin injection is another fascinating area which may help to select those patients having minimal changes of pancreatitis who may benefit of therapy as well as evaluating the pancreatic exocrine function and the pathways of secretion.

If MRCP has become the key examination for biliopancreatic therapeutic planning and follow-up after therapy, therapeutic ERCP is now challenged by EUS-guided therapy. This is clearly not a competition of 2 different techniques but an additional tool which allows to increase the indication for biliopancreatic treatments and improve their results. It is now possible to reach almost every peripancreatic collection for sampling or drainage and EUS-guided cystenterostomy has become the standard. The possibility to see “through the wall” has also allowed to develop new techniques to create anastomoses between the gut and the pancreatic duct, the common bile duct, the intra-hepatic duct or even the drainage of gallbladder in severe cases of cholecystitis. These combinations of imaging and therapeutic techniques allows to use them alone or in combination in the most difficult cases. A typical example is the complete rupture of the main pancreatic duct occurring in the setting of
acute or chronic pancreatitis, or in case of trauma: ERCP has been replaced by MRCP for identifying this disconnected pancreatic tail syndrome, transpapillary drainage of collection is replaced, at least in part, by transmural drainage, allowing to create more permanent fistula between the rupture and the gut, and even chronic pancreatic fistula have become potential candidates for therapy. Follow-up of the patient is done mainly by secretin-MRCP which allows to visualize the pathways of secretion and to direct the best therapy.

Biliopancreatic endoscopy has thus dramatically changed, ERCP being no more the cornerstone procedure mandatory for every patient but being part of an armamentarium of various diagnostic and therapeutic procedures of which the use of one or a combination, based on the specifics of each case, will hopefully result in better outcomes. This is also the typical clinical setting where all the physicians involved in patients treatment should work together and offer in a shared environment the best treatment or combination of therapies. Such convergence of medical care requires extensive manpower and equipment which can probably only take place in selected specialized centers.