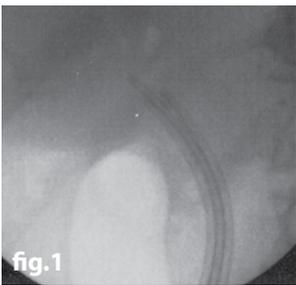


# Improvement in multi-stenting of biliary anastomotic strictures after liver transplantation using Fusion System

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We work in a referral center for liver transplantation (LT) in Northern Italy where diagnosis and treatment of biliary complications after LT is a frequent challenge. ERCP is now considered the first approach to confirm the presence of an anastomotic stricture and to proceed to its treatment which is carried out with a high rate of success. As recent data suggests, progressive increase of the number of plastic stents placed side-by-side across the stricture (multi-stenting) achieves a prolonged clinical remission.



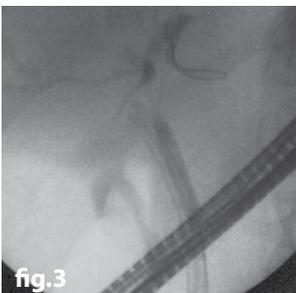
In one case, a 52-year-old patient presented with itching and progressive impairment of cholestasis six months after LT for HCV cirrhosis performed at our center. An anastomotic biliary stricture was suggested by magnetic resonance cholangiography. During ERCP, a tight stricture was confirmed. A dilation with a 4-mm hydrostatic balloon catheter was performed and a single 10-French plastic stent placed across the anastomosis. In a few weeks, the itching resolved and the cholestasis markedly improved. Therefore,

as it is our common practice, we performed endoscopic multi-stenting therapy, in which we progressively increase the number of plastic stents placed side-by-side across the stricture every three months for one year. The Fusion System was used (Fig 1 and 2) and our patient was successfully treated with no recurrence of itching and cholestasis.



Endoscopic therapy consists of placing a single plastic stent across the anastomosis as the first step, and then multi-stenting for one year with stent exchanges at three-month intervals to prevent clogging.

When we used the traditional 480-cm wire guide, we dilated the residual stricture first and placed more multiple stents thereafter, being limited by the maximal diameter of the balloon dilator available and by the need of multiple insertions of the catheter through the papilla and the strictured/angulated anastomosis, alongside stents already in place. The Fusion System has



changed our traditional approach and led to better clinical results in a shorter time and with minimal discomfort for the patient. With the Fusion System, the sequence of steps to increase the number of stents has changed. After removal of the occluded stents, we now 1) place first the new stents with the same number as the previous procedure less one, 2) dilate the residual stricture with the balloon dilator alongside the stents already in place across the anastomosis (Fig 1 and 3) add stents one-by-one according to maximal diameter of the CBD (Fig 2 and 3). These procedural changes were made possible by the technical characteristics of the Fusion System

which allows us to maintain a stable access to the biliary tree during all steps of the procedure and by the use of intraductal exchange achieving the placement of multiple stents with one short wire guide. We have used the Fusion System in more than twenty procedures. Only one dilatation per session was needed with little discomfort for the patient and no stent displacement. A higher number of stents, three to five, were placed at the time of final treatment and a wider patency of the biliary anastomosis was seen at one year after stent removal. The nurses on our staff have commented on the ease of use with this short wire guide system and leads to shortening of procedures.



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