

Open Access

Balloon Catheter Assisted Biliary Stent Insertion

Chang-Il Kwon and Kwang Hyun Ko

Digestive Disease Center, CHA Bundang Medical Center, CHA University, Seongnam, Korea

Endoscopic biliary stenting is widely used to palliate malignant obstruction or to treat benign biliary diseases. The technique is less invasive and guarantees high clinical success rates with low morbidity.^{1,2} In particular, a precise measurement of the length of stenotic area from the papilla makes it possible to place the stent successfully under fluoroscopic monitoring. Although previously taken abdominal computed tomography or magnetic resonance cholangiopancreatography might be helpful, simultaneous measurement using dedicated instruments during endoscopic retrograde cholangiopancreatography can be clinically most helpful.³ For this purpose, we employed a balloon catheter marked with a scale that allowed us to make direct endoscopic measurement of the length from the stenotic area to the papilla. The balloon catheter (Escort II double lumen extraction balloon; Cook Endoscopy, Winston-Salem, NC, USA), marked in advance with a scale, was one that we generally used as a retrieval catheter for biliary stone extraction. The followings are the step-by-step methods for measuring the length from the stenotic area to the papilla and stent insertion: 1) After the biliary stenosis was

identified with cholangiography, a guide wire was inserted in advance through the stenosis; 2) The balloon catheter could pass through the stenosis over the guide wire and advance far enough along to pass the proximal margin of the stenosis; 3) Once the inflated balloon catheter was pulled back until it reached the proximal end of the stenosis (Fig. 1), we could endoscopically measure the length from the stenotic area to the papilla with the scale marked on the balloon catheter (Fig. 2); 4) After removing the balloon catheter, leaving the guide wire, a stent of adequate size was positioned through the stenosis.

Conflicts of Interest

The authors have no financial conflicts of interest.

REFERENCES

1. Speer AG, Cotton PB, Russell RC, et al. Randomised trial of endoscopic versus percutaneous stent insertion in malignant obstructive jaundice. *Lancet* 1987;2:57-62.
2. Cowling MG, Adam AN. Internal stenting in malignant biliary obstruction. *World J Surg* 2001;25:355-359.
3. Dumonceau JM, Heresbach D, Devière J, et al. Biliary stents: models and methods for endoscopic stenting. *Endoscopy* 2011;43:617-626.

Received: July 2, 2012 Revised: September 27, 2012

Accepted: September 27, 2012

Correspondence: Kwang Hyun Ko

Digestive Disease Center, CHA Bundang Medical Center, CHA University, 59 Yatap-ro, Bundang-gu, Seongnam 463-712, Korea

Tel: +82-31-780-5220, Fax: +82-31-780-5219, E-mail: bluehipp@cha.ac.kr

© This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/3.0>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

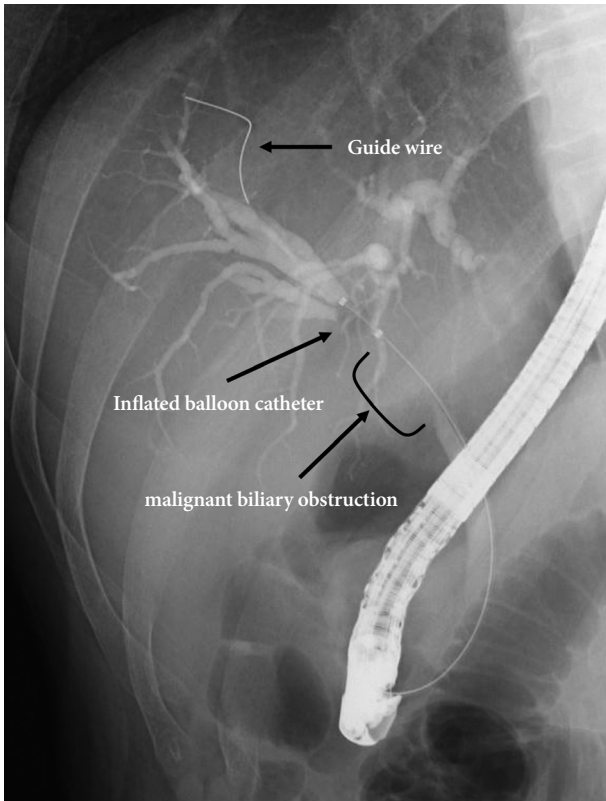


Fig. 1. Cholangiography showing an obstruction of 3 cm in length at the proximal extrahepatic biliary tract. The first step begins with the insertion of a guide wire that is introduced inside the balloon catheter into the stenotic area. Once it has passed the stenotic area, the inflated balloon over the guide wire is withdrawn until it reaches the proximal margin of the stenosis.

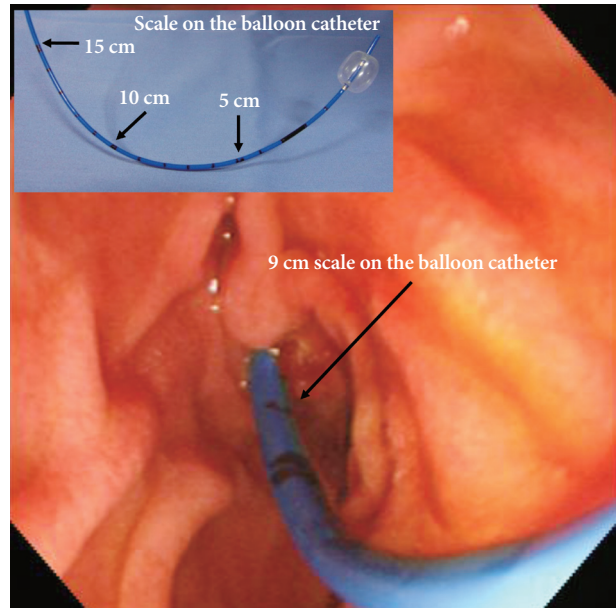


Fig. 2. Endoscopic image of balloon catheter assisted measurement. The length from the stenotic area to the papilla is directly and precisely measured with the scale on the surface of the catheter. Inset; balloon catheter with marked scale. The balloon catheter was normally used as a retrieval catheter for biliary stone extraction and it was marked with the scale in advance.