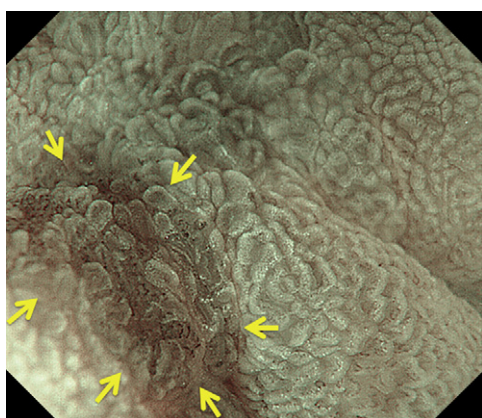


**Figure 1.** ME with NBI findings of early gastric cancer, 3 mm in diameter. Inside the demarcation line (*arrows*) between cancerous and noncancerous mucosa, LBC is evident just at the edge of the neoplastic epithelium.



**Figure 2.** ME with NBI findings of early gastric cancer, 4 mm in diameter. Outside the demarcation line (*arrows*) between cancerous and noncancerous mucosa, a dense white opaque substance is visible within the epithelium of the intervening part between the crypts. Accordingly, the subepithelial capillaries are totally obscured. No light blue crests are evident.

**TABLE 1. Prevalence of WOS and LBC within neoplasias and the surrounding background mucosa in 40 cases of early gastric epithelial neoplasia, examined by ME with NBI**

Neoplasias				Background mucosa			
WOS	LBC	n	%	WOS	LBC	n	%
+	-	11	27.5	+	-	2	5
-	+	2	5.0	-	+	24	60
+	+	3	7.5	+	+	6	15
-	-	24	60.0	-	-	8	20

WOS, White opaque substance; LBC, light blue crest; NBI, narrow band imaging.

histologically as having intestinal metaplasia (Fig. 2). Two of the 8 cases were strongly positive for WOS, but LBC was not detected (Fig. 2).

Therefore, in answer to Matsushita et al, WOS may be another marker of intestinal metaplasia, and LBC can be detected within gastric neoplasia.

**Kenshi Yao, MD, PhD**  
**Takashi Nagahama, MD, PhD**  
**Akinori Iwashita, MD, PhD**  
**Hiroshi Tanabe, MD**  
**Yasuhiro Takaki, MD, PhD**  
**Toshiyuki Matsui, MD, PhD**  
 Department of Gastroenterology  
 Fukuoka University  
 Chikushi Hospital  
 Fukuoka, Japan

## REFERENCES

1. Yao K, Iwashita A, Tanabe H, et al. White opaque substance within superficial elevated gastric neoplasia as visualized by magnification endoscopy with narrow-band imaging: a new optical sign for differentiating between adenoma and carcinoma. *Gastrointest Endosc* 2008;68:574-80.
2. Yao K, Iwashita A, Nagahama T, et al. White opaque substance as visualized by magnifying endoscopy with narrow-band imaging: a new useful sign for differentiating high-grade dysplasia/early carcinoma from low-grade dysplasia in gastric neoplastic lesions. *Endoscopy* 2008;57:A61.
3. Uedo N, Ishihara R, Iishi H, et al. A new method of diagnosing gastric intestinal metaplasia: narrow-band imaging with magnifying endoscopy. *Endoscopy* 2006;38:819-24.
4. Gono K. An introduction to high-resolution endoscopy and narrow-band imaging. In: Cohen J, editor. *Comprehensive Atlas of High-resolution Endoscopy and Narrow Band Imaging*. Boston: Blackwell Publishing; 2007. p. 9-22.
5. Yao K, Takaki Y, Matsui T, et al. Clinical application of magnification endoscopy and narrow band imaging in the upper gastrointestinal tract: new imaging techniques for detecting and characterizing GI neoplasia. *Gastrointest Endosc Clin N Am* 2008;18:415-33.

doi:10.1016/j.gie.2009.02.004

## Endoscopic or percutaneous approach for advanced biliary stenoses at the hepatic hilum?

To the Editor:

We read with interest the study by Paik et al<sup>1</sup> that compared the outcomes of percutaneous and endoscopic approaches of biliary stenting in advanced hilar cholangiocarcinoma (Bismuth type III and IV) in which the investigators concluded that percutaneous self-expanding metallic stents may be preferable for initial biliary drainage in these patients, given a higher initial success rate (92.7% vs 77.3%, respectively,  $P < .049$ ) and low level of procedure-related cholangitis (29.5% vs 22.0%, respectively,  $P =$  not significant). These conclusions are further supported by the evidence that median survival of patients in whom biliary drainage was initially successful was much longer than that of those who had a failed drainage (8.7 months vs 1.8 months, respectively,  $P < .001$ ). The outcomes of the present study, however, are not consistent with previous reports

that show that initial complication rates after endoscopic stent placement in malignant hilar stenoses are less than those after percutaneous placement.<sup>2</sup>

To draw firm conclusions from the study by Paik et al<sup>1</sup> we would like to ask the investigators to provide further data about the following important points: (a) whether the approach to these patients was aimed toward a unilateral or a bilateral drainage and whether this was successfully achieved and (b) how the patients with failed initial biliary drainage were managed. Recent reports show that endoscopic stent insertion should be successfully achieved in more than 90% of patients when the unilateral drainage is used to drain a hilar obstruction, with a risk of procedure-related cholangitis of 5% to 10%.<sup>3-5</sup> The risk of cholangitis after the endoscopic approach mainly pertains to the failure to insert a stent into an obstructed hepatic lobe that is filled with contrast.<sup>6</sup> Generally, if both lobes are imaged with contrast during cholangiography, bilateral stenting reduces the potential sequelae of cholangitis in contaminated but undrained areas. If contrast does not contaminate both sides, then unilateral stenting should be sufficient.<sup>6,7</sup> If endoscopic placement fails, then a promptly performed percutaneous drainage can lower the risk of acute cholangitis. In conclusion, we believe that endoscopic stent placement should now be accepted as the first-line palliative treatment for patients with advanced malignant hilar strictures, whereas, the percutaneous approach should be reserved for those patients who had a failed endoscopic stent insertion.

**Giovanni D. De Palma, MD**  
**Stefania Masone, MD, PhD**  
**Dario Esposito, MD**  
**Giovanni Persico, MD**

*Center for Technical Innovation in Surgery  
 Department of Surgery and Advanced Technologies  
 School of Medicine  
 University of Naples Federico II  
 Naples, Italy*

## REFERENCES

- Paik WH, Park YS, Hwang J, et al. Palliative treatment with self-expandable metallic stents in patients with advanced type III or IV hilar cholangiocarcinoma: a percutaneous versus endoscopic approach. *Gastrointest Endosc* 2009;69:55-62.
- Born P, Rösch T, Bruhl K, et al. Long-term outcome in patients with advanced hilar bile duct tumors undergoing palliative endoscopic or percutaneous drainage. *Z Gastroenterol* 2000;38:483-9.
- Cheng JL, Bruno MJ, Bergman JJ, et al. Endoscopic palliation of patients with biliary obstruction caused by nonresectable hilar cholangiocarcinoma: efficacy of self-expandable metallic Wallstents. *Gastrointest Endosc* 2002;56:33-9.
- Freeman ML, Overby C. Selective MRCP and CT-targeted drainage of malignant hilar biliary obstruction with self-expanding metallic stents. *Gastrointest Endosc* 2003;58:41-9.
- De Palma GD, Pezzullo A, Rega M, et al. Unilateral placement of metallic stents for malignant hilar obstruction: a prospective study. *Gastrointest Endosc* 2003;58:50-3.
- Chang W, Kortan P, Haber G. Outcome in patients with bifurcation tumors who undergo unilateral versus bilateral hepatic duct drainage. *Gastrointest Endosc* 1998;47:354-62.
- De Palma GD, Galloro G, Iovino P, et al. Unilateral versus bilateral endoscopic hepatic duct drainage in patients with malignant hilar biliary obstruction. Results of a prospective, randomized, and controlled study. *Gastrointest Endosc* 2001;53:547-53.  
doi:10.1016/j.gie.2008.12.058

## Response:

De Palma et al raise issue with our conclusion that the percutaneous approach may be preferable for initial biliary drainage to the endoscopic approach in advanced hilar cholangiocarcinoma (HC).<sup>1</sup> Most of our patients received unilateral drainage, because decompression of unilateral lobe could be enough to relieve symptomatic cholestasis.<sup>2</sup> However, some patients with HC needed dye overuse or aggressive catheter manipulation to achieve successful biliary palliation, especially with a high level of biliary obstruction (Bismuth III/IV). We excluded patients with HC and with a low level of hilar obstruction (Bismuth I/II) that can be easily managed by endoscopic self-expanding metallic stents (SEMSs), with less frequency of procedure-related cholangitis.<sup>3</sup> This may explain why the rate of cholangitis in endoscopic SEMSs was a little higher than in previous reports.<sup>3-6</sup> Besides patient enrollment, there are several differences in study design between our study and previous ones, such as patients with heterogenous cancer,<sup>5,6</sup> prophylactic antibiotics use,<sup>6</sup> and the definition of cholangitis.<sup>3</sup> Failure of biliary palliation by endoscopic SEMS should be followed by immediate percutaneous drainage. In our series, the rate of procedure-related cholangitis was significantly higher in the failure group than in the success group (70.0% vs 17.6%,  $P = .001$ ) (data not shown in the article). Among the 13 patients who failed initial biliary drainage, 10 patients with endoscopic SEMSs underwent percutaneous transhepatic tube insertion. Three patients with percutaneous SEMSs were medically treated with the percutaneous tube kept. The patients who initially failed endoscopic intervention had a poor prognosis, in spite of subsequent biliary intervention, and their median survival time was only 5.6 weeks. Therefore, we would suggest that the percutaneous approach could be preferable to the endoscopic approach for initial biliary drainage of advanced HC.

**Woo Hyun Paik, MD**

*Department of Internal Medicine and Liver Research  
 Institute  
 Seoul National University College of Medicine  
**Jin-Hyeok Hwang, MD, PhD**  
 Department of Internal Medicine and Liver Research  
 Institute  
 Seoul National University College of Medicine  
 Department of Internal Medicine  
 Seoul National University Bundang Hospital  
 Seoul, Korea*