Response:

We appreciate Ding et al's[1] interest and comments related to our video case report entitled "Endoclip papilloplasty for a patulous and incompetent biliary papilla: a therapeutic misadventure."[2] In their letter, they claimed that clipping is likely to increase the likelihood of adverse events and that biliary-enteric anastomosis has been shown to be safe.

It is well known that endoscopic hemostasis by clipping is safe and effective to manage refractory postsphincterotomy bleeding and tear. In addition, these clips generally fall off spontaneously in days or weeks. In our experience, endoclips fell off within 3 weeks in 70% of patients who had undergone endoclip papilloplasty (30 patients, unpublished data). By contrast, rates of late adverse events after biliary-enteric anastomosis, such as biliary or anastomotic strictures, were reported to be 10% to 30%.[3,4] These patients are susceptible to recurrent choledocholithiasis and cholangitis. Therefore, we believe that it is incorrect to claim there is no need to preserve the sphincter of Oddi (SO) function.

Biliary sludge contains bacteria and fungi, microbial by-products, proteins, dietary fibers, crystals of fatty acid calcium salts, and amorphous calcium bilirubinate.[5-7] The SO prevents the reflux of duodenal contents into the bile duct, the pancreatic duct, or both, under physiologic conditions.[8] This natural antireflux function disappears after sphincterotomy.[9] Permanent destruction of the SO after endoscopic sphincterotomy can lead to late adverse events such as recurrent choledocholithiasis, ascending cholangitis, and acute cholecystitis.[10] The risks of these late adverse events are related to long-standing duodenobiliary reflux with bacterial contamination.[11] Although risk factors related to common bile duct stone recurrence are multiple, including the differences in stone ingredients,[12] biliary microbiota,[13,14] genetic factors,[15,16] juxtapapillary diverticulum,[17] and biliary duct dilation,[18] endoscopic sphincterotomy, endoscopic papillary large balloon dilation, and biliary microbiota are clearly related to stone recurrence.

Although a scarred or repaired SO may lack certain neuronally controlled muscle fibers, the control of the SO is complex, and it is under hormonal, extrinsic neural, intrinsic neural, and myogenic control or influence.[19] Our porcine experiments (unpublished data) demonstrated that healing of the SO after endoclip papilloplasty was different from that in the control group. We also demonstrated that the basic pressure of the SO in the treatment group was significantly higher than that in the control group.[20]

We concur that endoclip papilloplasty is not suitable for a papilla located deep within the diverticulum, a small papilla, and a papilla with a short intramural segment. These papillas are not suitable for extensive sphincterotomy anyway. We also agree that long-term follow-up and large-scale randomized controlled trials are needed in this direction.

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