New Scopes and Accessories for Direct Peroral Cholangioscopy

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Introduction

Peroral cholangioscopy (POC) permits direct visualization of the biliary tree for diagnostic procedures and provides endoscopic guidance for therapeutic interventions. POC using mother-baby scope system is improving on image quality, but, still not widely used because of its disadvantages. With recent technological developments, single operator cholangioscopy system can be new POC system to provide adequate samples for histological diagnosis adding visual diagnosis, and facilitated stone fragmentation. Direct POC using an ultra-slim upper endoscope has been proposed as a single-operator system for direct endoscopic examination of the biliary tree.

Direct peroral cholangioscopy

Direct POC is direct insertion of an endoscope into the biliary tree without the assistance of mother scope. It can be a valuable and economic solution for evaluating and managing bile-duct lesions because of the using of the conventional endoscope with set-up. Advantages of direct POC include its use of conventional endoscopy equipment, its superior images of the biliary tree, and large working channel. Direct POC permit the easy application of narrow-band imaging to enhance the endoscopic imaging of the surface structures and blood vessel patterns to differentiate malignant from benign biliary lesions. Enhanced endoscopic function is improving with a new ultra-slim endoscope. An ultra-slim endoscope has a larger working channel of 2 mm, enabling its use in facilitating procedures with a broad spectrum of therapeutic devices in patients with biliary diseases. Intracorporeal lithotripsy with electrohydraulic or laser lithotripsy is a main therapeutic intervention of direct POC for patients with bile duct stones that are resistant to conventional endoscopic stone-removal procedures. Tumor ablation therapies are feasible procedures under direct POC. Direct POC can be utilized to guide additional biliary interventions, like a selective biliary drainage through the difficult strictured biliary segments or cystic duct. Accessories to assist direct POC, and endoscopes to be a dedicated scope for direct POC is developing to expand the function of direct POC.

Conclusions

With the technical development, direct POC is expected to expand the diagnostic and therapeutic roles for biliary lesions.