AN INTERVIEW WITH

Kenneth Binmoeller, M.D., Director of Interventional Endoscopy Services at California Pacific Medical Center in San Francisco

Dr. Binmoeller talks about the influences that shaped his career in interventional endoscopy and led to his invention of the FDA-approved AXIOS™ Stent and Delivery System for drainage of pancreatic fluid collections. His company, Xlumena, was recently acquired by Boston Scientific.

Q Were there particular experiences that helped shape your passion for interventional endoscopy?

During my fellowship training, we had a patient with bleeding esophageal varices who had undergone several sessions of sclerotherapy. We decided to use a prototype endoscope for band ligation. Treating esophageal varices using a mechanical method was completely new. It was easily performed and worked flawlessly.

Another case was a pregnant woman in her first trimester admitted with sepsis from obstructive cholangitis. We could see that the ampulla was bulging. We used a needle knife to unroof the papilla and the stone just popped out with a gush of infected bile. The patient's critical condition reversed 180 degrees. That was an inspirational moment for me.

So early on in my career I learned to be inventive and innovative, always thinking about what type of tool or device I would need to accomplish the task at hand.

Q What do you mean by the art of interventional endoscopy?

The art is about an approach. It's about applying different imaging modalities that complement one another to guide our procedures. It's about delivering and executing the maneuvers with elegance, control, and precision. It's about eliminating redundancy and making sure that every maneuver is purposeful.

Q What were the influences that led you to develop the AXIOS platform?

The more steps in a procedure, the greater the chance for complications. Each time you exchange a device over a guidewire, there's a potential to lose access. The tract needs to be large enough to place multiple plastic stents for drainage, which increases the potential for leakage alongside the guidewire. If the cyst is not fully adherent to the wall, it may cause the cyst to leak or separate from the wall as you dilate the tract. Thinking in terms of grace, elegance, purposeful maneuvers and reducing redundancy, I knew that we could do a lot to improve on that technique. Those were the seeds that inspired the AXIOS platform.

Editor's Note: *Since this interview took place, the AXIOS Stent and Electrocautery-Enhanced Delivery System received 510(k) clearance in the U.S.*

Q What is the AXIOS Stent and Delivery System and how does it work to provide an endoscopic solution for the drainage of pancreatic pseudocysts?

The AXIOS platform consists of two components: The AXIOS Stent and the Access and Delivery System.

The stent is soft and flexible yet sturdy to reduce the risk of migration, and it's also removable. It's lumen apposing, so you don't get leakage between the two lumens. It's fully covered, which helps prevent leakage, ingrowth and bleeding. It has a large diameter to handle debris in the cysts. It's a short stent that doesn't extend into the lumen of the cavity. That's important because as the cyst drains, the wall collapses down on the stent. If the end of the stent extends into the lumen of the cavity, it can cause injury, bleeding and perforation.

The delivery system eliminates the redundancy. The design goal for the AXIOS platform was 'one device, one step.' As soon as you're inside the cyst, you can deploy the stent. The individual steps of the Seldinger technique are combined into one. You need dedicated tools such as this to perform EUS-guided translumenal therapy quickly, safely and efficiently.

Q Where is the field of interventional endoscopy headed?

Pseudocyst drainage used to be treated surgically; now endoscopic drainage is becoming the preferred approach. Today, a cholecystectomy is the standard treatment for a patient who is symptomatic for gallstones. While that's a less-invasive surgical procedure today, you're still removing a healthy organ. With interventional endoscopy, we can facilitate drainage, prevent the reformation of the gallstones and preserve the organ. The surgical paradigm is to resect and reconfigure. As interventional endoscopists, our goal should be to preserve as much as possible.

Q How will the acquisition of your company by Boston Scientific help advance the field of interventional endoscopy?

We're just scratching the surface with the AXIOS platform. I think the next wave will be a boom in innovations in EUS-guided accessories. Boston Scientific has already contributed so much to the success of this field. Without question, it is the company that will take interventional endoscopic ultrasound to the next level.

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