

**J. ANTONIO  
QUIROS:**

When you talk about endoscopy in general-- both colonoscopy, which is what people are familiar with, and upper endoscopy, which is an esophagogastroduodenoscopy-- you really only reach into the first portion of the small intestine. Balloon-assisted enteroscopy allows you to go deep into the small intestine into areas that are normally not accessible with an endoscopy and do therapeutic maneuvers, which can involve removing lesions, cauterizing sources of bleeding, and also to do the diagnosis that would otherwise not be possible by the usual means.

Deeper access is achieved by basically being able to-- by inserting the endoscope to the small intestine. And then using an over tube with a balloon, it allows us to fold the intestine over the endoscope and over the over tube. And then use a balloon system to basically hold the intestines in place while you use the endoscope to go deeper in. And then repeating this over and over until you basically fold as much of the intestine as you can over the over tube, and that will allow you to examine more of the intestine.

Being able to do the procedure and being able to perform therapeutic maneuvers while you're doing this is the challenge. And since that, you need to have special training to perform therapeutic endoscopy. Removing large polyps, large tumors in the intestine, treating bleeding vascular lesions in the intestine, does require a large degree of experience to be able to do it safely.

But obviously being able to do the enteroscopy for diagnostic purposes is nice, but if you're taking the trip down into the intestine, having the patient undergo anesthesia for this makes sense to be able to perform a full service and be able to treat the patient with that. And this avoiding surgery, which is really the other option, is to have the patient undergo surgery and have the bowel taken out by the surgeon and examined by hand and have a treatment performed by the surgeon itself. This way, the patient is managed in an ambulatory setting. So they come, they have their procedure, and they go home the same day.

I started doing enteroscopy back in 2004. I trained in adults at Stanford, then after that, we did it in San Francisco. We're the only balloon-assisted enteroscopy program in the city. We will see patients from all over northern California. And now we're doing them here in South Carolina. The biggest advantage, obviously, here is the availability of trained staff, anesthesia, nursing staff, equipment, that allows us to be able to perform not only diagnostic procedures but also therapeutic procedures in a safe fashion in children.

So the usual indications for this procedure are basically for diagnosis, which is a diagnostic question or a doubt [INAUDIBLE] the patient. Treating of bleeding lesions in the small intestine. And that can be the tumors, that can be vascular lesions. Treatment of polyps-- overgrowth of tumors in the small bowel. Usually by treatment, I mean remove.

And the nice thing about this procedure is, with the over tube, you can actually-- as we'll see in some of the demonstrations-- you can actually remove lesions and then go back and forth into the same area without having to remove the whole apparatus because the over tube provided you with a safe easy access. And it actually ends up being less traumatic to the patient's bowel than if you're trying to do this by simple endoscopy.

So for demonstration, we're going to show a couple of cases. One is a child. He has inflammatory bowel disease, long-lasting. He has been successfully treated medically but he kept on having abnormal lab tests and joint pain. So there was a question whether they had done the wrong diagnosis and he had Crohn's disease versus ulcerative colitis. And the difference is, obviously, one affects your colon and the other one affects your entire intestine.

We did a full enteroscopy on this patient. That meant that we basically went down with the enteroscope to the deepest point of insertion one way through the mouth, and then we went the other way through the rectum until you'll be able to examine the whole bowel. To demonstrate whether he actually did have or not any sort of bowel disease, not only by endoscopy but also microscopically-- take biopsies.

The other case that we're going to see is a patient who had recurring bleeding. The patient was known to have hereditary hemorrhagic telangiectasia. It's a relatively rare disorder in which you have overgrowth of blood vessels everywhere in your body. That includes your bowel, your brain. And recurring bleeding and chronic anemia.

So specifically, the bowel lesions-- intestinal lesions-- were the ones that were chronically bleeding. He was having chronic nosebleeds as well, but we wanted to go and treat his intestinal vascular lesions. Now we were able to do it successfully. After a couple of sessions, we were able to ablate almost all the lesions that he had in his intestines and the bleeding stopped.