MICHAEL LEVY: We utilize FISH to evaluate patients with indeterminate bowel duct strictures to help distinguishing the ligament from the benign stricture. And the unique thing about FISH is it allows us to identify malignant cells in a very small sample, as compared to conventional cytology.

One of the important things, again, about FISH is the ability to detect cancer in a very limited amount of cells. So with the old tests, or conventional cytology, we often were not able to establish a diagnosis at all, or if we could, the disease often had to be a little more advanced in a disease state. And now, with FISH, we can often establish the diagnosis at an earlier stage, and be able to provide the appropriate management at an earlier time in their disease course.

For us to enhance the diagnostic sensitivity, we want to acquire enough cells. First of all, we pass the brush into the strictured area, and then advance to and fro the brush at least five times to collect as many cells as possible. We also want to avoid the surrounding tissues, because if we collect cells from non-strictured areas, that can make it more difficult for our cytopathologist.

And we do one other thing that's a little unique. When we remove the brush from the patient, instead of withdrawing it through the long plastic catheter-- and that can result in a loss of cells within the catheter-- we simply advanced it a couple of centimeters, cut the tip off, place it and preservative, and then immediately send it to the lab for processing and cytologic interpretation. And our studies have shown that each of these steps enhances the diagnostic accuracy.

Current available brushes all behave similarly, so we really do not necessarily prefer one over the other. There's research ongoing, at this point, to try and create better brushes that will collect more cells to enhance the sensitivity, but currently available brushes all behave similarly.

RENEE ROOT: For biliary tract malignancy testing, there's basically two options. There's the cytology and FISH option, and the test code to order for that would be 84357. And then there's also the option to perform cytology at your own lab, and then just send an aliquot of the original specimen to our lab for the FISH testing. And that test code is 19701.

And the preferred fixative for both is a non-Gyn PreservCyt vial, so about 20 mils of PreservCyt. You can obtain these through mayomedicallaboratories.com. It's supply T536, or you can call Mayo Lab and query to get these.

Upon arrival in the lab, the technologist will review the case, determine what testing has been ordered, and then they'll send it to the appropriate areas for testing. If cytology and FISH have been ordered, they'll aliquot it evenly between the two areas, and send it for testing. If FISH only has been ordered, then the entire aliquot goes for FISH testing, and then after those results come back it's reviewed by a technologist and a pathologist before sign out.

MICHAEL LEVY: Well, I think this test has really improved patient care. It's just simply the ability to provide the appropriate management at an earlier point in their disease state is just critical to better outcomes in these patients.