AMITPAL JOHAL: So ideal patients for EUS guided Liver Biopsy would probably be patients who need a liver biopsy and then also need an endoscopy at the same time. So there's a group of patients who have Barrett's esophagus, for example, who need variceal screening, who have abdominal pain, who potentially have any other upper GI manifestation that needs to be worked up-- nausea, vomiting, things like this. So if they're coming to endoscopy for a EGD and they need a liver biopsy, we can do both. And so those are the ideal patients.

We do liver biopsies in patients who just have elevated liver function tests and no real upper GI symptoms, but in those cases we're specifically looking for any signs of biliary obstruction, bile duct stones, or anything else like that. Pancreatic pathology. So ideally you get two procedures in one package. That's kind of the ideal patient.

DAVID DIEHL: There's three different ways to obtain a liver biopsy-- transjugular, percutaneous, or endoscopic ultrasound guided. In patients who need an endoscopic procedure and a liver biopsy, there's definitely a benefit to doing it through an endoscopic ultrasound. With EUS guided Liver Biopsy, we're able to assess the bile duct, check for stones, as well as do a liver biopsy.

AMITPAL JOHAL: Building an EUS guided Liver Biopsy practice and an institution, I think, takes a couple of things. It takes really getting to know your hepatologist very well. So getting them on board with the technique is very important. And then, even a lot of gastroenterologists don't know this technique is possible. So communication is key. Then, once we start a practice, I think the benefits will just show.

So we have seamless communication because hepatology is part of gastroenterology. So for patient notification of the results, for referring physician notification of the results, it's just seamless. So we can do all the scheduling in one department, the communication in one department. So when something is that easy, it tends to grow.

DAVID DIEHL: EUS guided Liver Biopsy is a very safe procedure. One of the technical challenges is simply using a 19 gauge needle. A lot of doctors may not be comfortable using a 19 gauge needle in the liver. However, the biopsy is done under live, real time, ultrasound guidance. So if anything, it's safer than other modalities of a liver biopsy.

AMITPAL JOHAL: I think where this is going to really-- EUS guided liver biopsy is going to really take off is this fact of cost savings because these patients who are getting endoscopy-- and there's a great number of them who are getting even colonoscopies who need liver biopsies. If we can find these patients and do both procedures in one setting is, I think, an enormous cost savings.

I think at this point that's probably the number one savings. The other one potentially is the ability to get both lobes. And with that, we can get a better sampling and prevent repeat procedures. So a lot of times we'll get a percutaneous biopsy of just the right lobe. The biopsy does not show us what we really thought the liver would look like, and so the patient is sent back for a second biopsy of a different area to see if the first biopsy was representative. But we can avoid that by our technique.

DAVID DIEHL: The technique of EUS guided Liver Biopsy-- we generally are targeting both left and right lobes of the liver. The left lobe we find through the proximal stomach and the right lobe through that duodenum. We find a large area of liver without intervening vessels, and then we target that for the trajectory of the needle. We typically do several passes with full suction to acquire tissue.

AMITPAL JOHAL: So results wise, the ASLD typically states we need a liver biopsy specimen of about a centimeter and a half with six CPTs. We're getting much more than that. We have specimens in a three to four centimeters range with CPTs in the teens. 15 to 20. And so we've compared our specimens to percutaneous and transjugular, and the EUS guided liver specimens are equivalent.

DAVID DIEHL: So we prefer to use the Expect flex needle for our EUS guided Liver Biopsies. The tissue yield is excellent, and the ability of that needle to pierce the stomach of the duodenum is wonderful.