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Reviewing Best Practices for Endoscopic Ultrasound

Dr. Buch:

Welcome to *GI Insights* on ReachMD. I'm your host, Dr. Peter Buch, and today we're joined by returning guest, Dr. Kunal Jajoo, who is an assistant professor of medicine at Harvard Medical School, to discuss how we can best utilize endoscopic ultrasound, or EUS.

Dr. Jajoo, welcome back to the program.

Dr. Jajoo:

Thanks so much for having me back.

Dr. Buch:

Dr. Jajoo, let's start off by discussing who are the best candidates for EUS-guided gallbladder drainage? And what is the benefit over percutaneous drainage?

Dr. Jajoo:

Yeah, great question, and it is an evolving field, but thankfully, has now established itself, and so much so, that there's even a recent clinical practice update from the AGA about this just a couple months ago.

So I think in patients who arrive to us with acute cholecystitis and are not surgical candidates, the classic scenario is that they would have a percutaneous gallbladder drainage, and there are emerging literature that EUS gallbladder drainage has some specific advantages, especially if the patient is tolerant to sedation. One, there doesn't need to be a percutaneous stick. There doesn't need to be a drain sticking out of the abdomen, which patients tend to not like, and two, there are good data that there's a lower likelihood of needing reintervention, repeat changes of the drain, and repeat cholecystitis is actually lower when it was looked at comparing directly between EUS-guided gallbladder drainage and percutaneous drainage.

I think the one caveat is that it's probably not a great tool when the patient has a perforated gallbladder, an open perforated gallbladder with bile peritonitis, or if they have a lot of ascites in the abdomen, it can be a little more difficult.

Dr. Buch:

And who are not good candidates for percutaneous drainage?

Dr. Jajoo:

I think the patient who could easily go to the operating room for a traditional laparoscopic cholecystectomy should probably just go straight to that procedure. And then, as I mentioned, patients who have large volume ascites or have a perforated gallbladder should not have an EUS-guided gallbladder drainage.

Dr. Buch:

Thank you for that information. So when utilizing EUS, what adverse events might be encountered?

Dr. Jajoo:

When utilizing EUS specifically for gallbladder drainage there is some risk of bleeding. There is some risk of stent or dislodgement that the lumen-apposing metal stent could become dislodged. And then because we usually do this at the duodenal bulb, or sometimes in the antrum of the stomach, food can impact the stent and clog the stent. So those are a few of the things, but as I was alluding to earlier, actually the best studies that we have, recent studies, show lower reintervention rates, lower recurrent cholecystitis rates, and actually even lower adverse event rates globally at one-year follow-up and at 30-day follow-up.

Dr. Buch:

And again, a follow-up question, tell us a little bit about anatomical difficulties of accessing the gallbladder when doing EUS for drainage.

Dr. Jajoo:

Yeah, good question. So ideally, the gallbladder wall should be within a centimeter of the bowel wall that you're choosing to traverse, and sometimes that's just not true. The gallbladder is distended a little more laterally and away from the duodenum or the stomach, so that would make things anatomically difficult. Of course, if there are prior surgical interventions, such as a Roux-en-Y gastric bypass or other things that take the duodenum away from our scope, the duodenum and the antrum, then that would be quite difficult as well.

Dr. Buch:

And, Dr. Jajoo, what follow-up evaluation is necessary after EUS gallbladder drainage?

Dr. Jajoo:

So after EUS gallbladder drainage, if the patient is a candidate for ongoing procedures and the gallbladder drainage was not done in a palliative fashion, then we'll usually take a look in about six weeks and take that lumen-apposing metal stent that was utilized to create the fistula and exchange it for a softer double pigtail stent to minimize any local trauma that can occur from the metal stent. Also, the lumen-apposing metal stent can be utilized as an access point to actually go right into the gallbladder and remove stones if necessary to have a definitive procedure to get all the stones out.

Dr. Buch:

Thank you for that information. For those just tuning in, you're listening to *GI Insights* on ReachMD. I'm Dr. Peter Buch, and I'm speaking with Dr. Kunal Jajoo about therapeutic endoscopic ultrasound.

Now, Dr. Jajoo, looking at upper GI bleeding for a moment, how might EUS assist refractory upper GI bleeding?

Dr. Jajoo:

Yeah, this is an interesting scenario where it's not utilized very often but can be very helpful, especially in two specific situations. In those patients who have failed standard endoscopic therapy for GI bleeding for a Dieulafoy lesion or for a submucosal tumor that has a bleeding artery or arterial within it, endoscopic ultrasound can be helpful to identify the culprit vessel, and then potentially allow for therapeutics, whether that be identifying it perfectly in terms of location in order to better cauterize it or even injecting a sclerosing agent into that vessel, such as alcohol, and being able to sclerose the culprit vessel. The best studies we have is really mostly for Dieulafoy lesions and submucosal tumors in the non-variceal setting and for gastric varices. EUS has been very helpful in identifying culprit gastric variceal lesions, and then being able to even inject gel foam and coils to sclerose these gastric varices to stop acute bleeding and also to prevent subsequent bleeding. And so under EUS guidance, you can see these vessels very well. You can guide your needle right into them in order to place the coils, and potentially gel foam in order to stop that bleeding and stop that blood flow, and you can use the color flow ultrasound at the time of the procedure and actually demonstrate that the vessels no longer have flow in them once you've adequately placed the coils.

Dr. Buch:

That sounds like a really interesting concept to make sure that there's no longer any flow. Thank you. What would be the advantage of using EUS to obtain biopsies for suspected pancreatic cancer?

Dr. Jajoo:

I would argue that that's truly the standard of care at this point, that EUS should be the way we diagnose pancreatic cancer. It allows us with the pancreas sitting right behind the stomach and the duodenal bulb—it allows us very close direct access, very short needle tract in order to get tissue—and as opposed to a percutaneous approach, which would have to traverse the skin, traverse potentially both walls of the stomach in order to get it to the retroperitoneum and to the pancreas. So EUS provides many advantages in that regard. It's an outpatient procedure, still does not prolong length of stay, does not have an increased risk of infection compared to a percutaneous approach, and it really lets us get tissue.

And then as the oncologists are moving more and more towards neoadjuvant therapy for a broader range of patients with pancreatic cancer, they really need that tissue to have a diagnosis to decide on which chemotherapeutic regimen they're going to use, and potentially even use that tissue to really do some very specific molecular techniques to understand what cells are doing what, looking at immunohistochemistry, and to do that tailored approach to chemotherapy as much as possible.

Dr. Buch:

Dr. Jajoo, is there a school of thought to say that percutaneous biopsies of potential pancreatic cancer has the potential to spread it further than EUS?

Dr. Jajoo:

There is. There should be much lower risk for seeding with an EUS approach than a percutaneous approach because of that shorter needle tract that I was mentioning. I wouldn't say that it's impossible to spread with EUS, but it's been very, very rare to have reports of spread.

Dr. Buch:

Finally, as we come to the end of today's discussion, can you tell us how EUS might help with cholangiopancreatography?

Dr. Jajoo:

Yes. So EUS-guided rendezvous technique, so in those patients who their tumor is really completely obscuring the view of the ampulla or just doesn't allow us to get to the normal transpapillary approach to the ERCP, endoscopic ultrasound can help us identify exactly where that obstructed bile duct is. At times we can either place a lumen-apposing metal stent directly across into the bile duct from the duodenum in patients who are not surgical candidates, or if we think that they will eventually be surgical candidates and we don't want to have that lumen-apposing metal stent in there, then we can sometimes utilize needle and wire to create an EUS rendezvous technique to get that wire into the bile duct across the ampulla such that we can then grab it with the ERCP scope and place the stent as we usually would.

Also, sometimes this has been increasingly published from a variety of our colleagues around the country and around the world that accessing the left lobe of the liver from the stomach in those patients who you can't get to the duodenum at all, that you can drain the left lobe of the liver at least through the stomach in order to overcome biliary obstruction that you couldn't reach the ampulla.

Dr. Buch:

And before we conclude, are there any additional thoughts you'd like to share with our audience today?

Dr. Jajoo:

Yeah, I just would like to reiterate that these procedures are safe and effective, and it is an evolving field, but some of the devices that we're utilizing for this, were not initially intended for this use, so we do have to remind our patients that this is not the FDA-approved usage of these devices but that they have been proven to be safe and effective.

Dr. Buch:

This has been an excellent review of endoscopic ultrasound, and I want to thank my guest, Dr. Kunal Jajoo, for sharing his insights.

Dr. Jajoo, it was a pleasure speaking with you again.

Dr. Jajoo:

Thanks so much for having me. It was great.

Dr. Buch:

For ReachMD, I'm Dr. Peter Buch. To access this and other episodes in this series, visit ReachMD.com/GIInsights where you can Be Part of the Knowledge. Thanks for listening.