Get Ready for Chromoendoscopic Surveillance in IBD

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Inflammatory Bowel Disease and Colorectal Cancer Risk

Hello. I'm Dr. David Johnson, Professor of Medicine and Chief of Gastroenterology at Eastern Virginia Medical School in Norfolk, Virginia. Today I wanted to talk about how we monitor patients with inflammatory bowel disease (IBD) and what we need to change -- not on the horizon but right now. We need to change how we monitor these patients and how we manage dysplasia, and we need to begin to image these patients with chromoendoscopy.

IBD is associated with increased colorectal cancer risk. In fact, 10%-15% of colorectal cancer-related deaths occur in the patients with colitis. Risk factors for colorectal cancer in patients with IBD include longer duration of disease, disease severity, the presence of primary sclerosing cholangitis, and less use of 5-ASA products.

We typically monitor patients with IBD according to duration and extent of their disease. We were taught that they should be monitored with random biopsies and also biopsies of targeted lesions. At a minimum, at least 2 biopsies should be taken 10 cm apart, with a minimum of 33 biopsies per patient. It is very time-consuming, and if you also take targeted biopsies, the cost in terms of processing fees begins to add up.

The data have evolved somewhat on how we should monitor patients with early dysplasia. Not long ago, a patient with IBD (low-grade multifocal and high-grade dysplasia) would be routinely referred for a colectomy. We did field-effect random biopsies because we couldn't run the risk of missing a very subtle lesion and a potentially more aggressive and late-stage presentation of cancer.

Updating the Terminology as Well as the Approach

Back in the 1980s when I trained, if we saw a polyp, we started to think that it was IBD with dysplasia-associated lesion or mass (DALM), and we referred the patient for surgery. It then became apparent that these incidental adenomas were developing as patients aged, and maybe they shouldn't all be referred for surgery. The incident adenoma-like mass (IALM) became a manageable circumstance. We just followed these people closely and biopsied them for inflammatory changes associated with dysplasia, and when found, referred those patients for surgery.

More recently, the terminology for ALM and DALM has changed. Raised lesions with dysplasia (RLDs) are subdivided into adenoma-like RLD (the former ALM) and non-adenoma-like RLD (the former DALM).[1] The non-adenoma-like RLD includes such lesions as polypoid nodularity and ulcerative changes (plaques or strictures). These patients are also at increased cancer risk.

Guidelines[2] have suggested that we can resect polypoid dysplasia endoscopically and monitor these patients more closely.

A recently published systematic review and meta-analysis from the Translational Research Group of The Netherlands and the United Kingdom[1] looked at the data to formally assess the efficacy of resecting these polyoid lesions in preventing recurrent dysplasia or cancer. They reviewed 425 different reports concerning polyoid dysplasia, excluding flat lesions. They identified 10 studies with a total of 376 patients and more than 1700 patient-years of follow-up.

They found that the cancer incidence in those patients was 5.3 per 1000 patient-years. The confidence limits were fairly narrow (2.8-10.1). For dysplasia, there was a 10-fold increase in cancer risk, but the risk was still fairly low (65 cases per 1000 patient-years) with confidence limits in the mid-50s to 70s. This suggests that monitoring in these patients is an appropriate strategy, because the relative risk for development of cancer is quite low. Patients with dysplasia clearly need to be monitored for potentially resectable dysplasia.

New Standards for Chromoendoscopy

What should we do with this information? The standards are changing, because blind random biopsies are no longer recommended.

Researchers at Stanford (Roy Soetikno and Tonya Kaltenbach)[3-5] have done phenomenal work on this and led a consensus group, whose findings will soon be published. I will report back to you at that time, because it will address the use of chromoendoscopy in patients with IBD to identify polyoid and nonpolyoid lesions, so we can better manage these lesions endoscopically rather than surgically.

The use of chromoendoscopy has been evolving. A variety of other imaging modalities have been compared with chromoendoscopy. These include narrow band imaging, image correction and enhancement (ICE) scans, or other methods performed through the endoscope. Evidence doesn't support these techniques as being as good as chromoendoscopy. Chromoendoscopy coupled with high-definition endoscopes with magnification is going to be the new standard of care.

Chromoendoscopy uses the agent indigo carmine to accentuate the pit patterns and the margins of any lesions. Indigo carmine is very easy to mix up. Two ampules of indigo carmine are typically combined with 250 cc of saline. During withdrawal, this solution is sprayed circumferentially. If we see any lesions, we flush in a more concentrated solution (1 ampule of indigo carmine in 25 cc of saline). This helps accentuate some of the margins and get better definition of crypt and pit patterns. If you are going to do a lift resection, then you put 1 drop of indigo carmine in 10 cc of saline to better define the margins. Use this technique for lift polypectomies instead of saline, especially if you are looking for these flat or serrated lesions. It is incredibly helpful in patients with IBD, and it should be part of your standard practice.

Indigo carmine is very inexpensive, about $7 a bottle. Unfortunately, indigo carmine is produced by only 1 company in the United States, and as of July 2014, it is still on backorder. If you have some, use it, or at least get on the list for indigo carmine so you can get it as soon as it becomes available.

It adds about 11 minutes to the procedure, used after the lavage. However, in the long run, it may shorten the procedure because you won't be doing random biopsies. Random biopsies can be very expensive. A study from Canada[6] estimated that it cost about $25,000 Canadian per intraepithelial neoplastic lesion found to do the random biopsy. (Therefore, from the perspective of cost and effectiveness, reliance on random biopsy in detecting dysplasia is not the best approach.) Using indigo carmine and chromoendoscopy increases the likelihood of finding a neoplastic lesion by 2 to 3 times. No studies to date have shown any missed cancers when performed by experts.

Planning Ahead

What should you be doing? You should be developing a chromoendoscopic program for all of your patients with IBD. There is no question that, when coupled with high-definition endoscopy, this is going to be a standard of care.

Frank Farraye, an expert in chromoendoscopy, suggests that we should start training programs for chromoendoscopy and continue to do random biopsies, but use indigo carmine as well to become familiar with it. For example, Stanford has posted some videos on how to perform this procedure with targeted rather than random biopsies.
The final caveat is that when patients leave after having an indigo carmine chromoendoscopy, warn them that there will be a little bit of blue discoloration to their stools. You don't want them to think that they have been transformed into a Smurf as they leave the endoscopy unit.

All joking aside, this will be the new standard of care, and you need to be involved soon if you are not already and develop familiarity with this technique. Coupled with high-definition endoscopy, this will be the method for quality colonoscopy and surveillance monitoring and resection of polypoid -- and some of the nonpolypoid -- lesions going forward.

I'm Dr. David Johnson. Thanks again for listening. See you next time.

References


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