

**SPEAKER:**

In this video, we will demonstrate the use of indigocarmine for staining the colon for inflammatory bowel disease surveillance. This is a simple procedure which can be accomplished by the addition of two grams of indigocarmine powder to one liter of saline solution. The saline is mixed in a standard, simple manner, and then added to the water jets that are integrated into the water pump associated with the colonoscope.

This procedure has been demonstrated to increase the detection of dysplasia during surveillance of inflammatory bowel disease patients, and has recently been endorsed by multiple GI societies as an alternative to random biopsy. As you can see, the procedure is relatively simple. After mixing the indigocarmine powder into the saline, we connect the tubing to the integrated water pump attached to a standard colonoscope. This then allows direct installation of indigocarmine through the accessory channel of the endoscope.

Here the view from the inside of the colon, once we've reached the cecum, is shown. Typically we start spraying indigocarmine after we have reached the cecum. Indigocarmine is applied to the surface. Typically we apply this on the side opposite gravity, so that the instilled indigocarmine runs downstream and stains all the walls of the colon. We try to use the minimum volume necessary to stain the entire surface.

You can also use the same indigocarmine water to clear any residual stool or mucus from the walls of the colon. If necessary, an anti-bubbling agent, such as simethicone, can be added. As you can see, the application is relatively quick. In particular, it is much more efficient than using the traditional method of a spray catheter, as there is no other accessory needed.

Once all the walls of the colon are stained, you can remove excess indigocarmine liquid and inspect for any abnormal areas that may suggest dysplasia. In this case, we can add other imaging agents, such as narrow band imaging, which is an optical filtering method which achieves similar results, although they have been less well validated compared to traditional indigocarmine staining. Other agents, such as methylene blue, can also be applied in the same manner.

In summary, this is an effective and efficient method of screening for dysplasia and inflammatory bowel disease that requires much less time than traditional methods of application. Here we can also use optical biopsy methods, such as the probe based confocal

endomicroscope to examine tissue. In this case, you can clearly see evidence of inflammation in the colon.

Applying the probe-based confocal endomicroscope, we can see the tissue directly and determine if there is evidence of dysplasia. In this case, there is inflammation but no dysplasia. In summary, these are all effective methods of screening for surveillance in inflammatory bowel disease.