

A SIMPLE TECHNIQUE FOR ASSESSING THE VIABILITY OF STOMAS OF THE INTESTINES

Charles L. Snyder, M.D., *Overland Park, Kansas*, and Dixon B. Kaufman, M.D.,
Minneapolis, Minnesota

ACCURATE POSTOPERATIVE ASSESSMENT of the viability of stomas of the intestine is a commonly encountered problem in clinical practice. Careful inspection of the stoma will usually suffice to resolve the issue. In some instances, however, the protruding mucosa is somewhat dusky, rendering it difficult to determine whether or not the stoma has adequate blood flow. A simple technique that can be used in the postoperative period to rapidly and safely assess the viability of stomas of the intestine is presented.

TECHNIQUE

The first step is careful visual inspection of the stoma with the appliance removed. If questions about the viability of the ostomy remain, a small test tube is lubricated with a petroleum-based gel and gently advanced one or two inches into the stoma. A flashlight or penlight is used to provide a light source with which to inspect the more proximal mucosa. In most instances, this maneuver will allow definitive determination of the viability of the stoma. If uncertainty remains, then 5 milliliters of fluorescein dye is administered intravenously for 10 minutes. A longwave ultraviolet lamp is used to inspect the stoma with the lights in the room turned off. The test tube is reinserted and the ultraviolet light is used as a light source to visualize the more proximal mucosa. It has been our experience that if strong fluorescence of the intestinal mucosa is noted, viability is assured. A negative result (lack of clear fluorescence) is indeterminate, and should not be considered an absolute indicator of a nonviable stoma. If permanent photographic documentation of intestinal viability is desired, perfusion of the stoma can be documented with a Polaroid™ camera and flash attachment after fluorescein is administered intravenously (1).

DISCUSSION

The fluorescein test has been used extensively in the intraoperative assessment of intestinal perfusion in instances of ischemia of the intestines (2, 3). The results of a prospective, controlled study demonstrated that this technique is better than clinical judgment or doppler analysis in the intraoperative evaluation of intestinal viability (4). The risks of administering fluorescein intravenously are minimal, occurring in an estimated 0.1 to 1.14 per cent of the patients (5). Most of these will be mild allergic reactions. Although the fluorescein technique has been extensively used intraoperatively, it has not, to our knowledge been described for use in the postoperative evaluation of stomas of the intestine.

We have used this technique successfully in the postoperative assessment of viability of the stoma after resection of ischemic intestine. Prompt recognition of a necrotic stoma is important, both as an indicator of the need to revise the stoma and as a sign of progressive ischemia of the intestine. We have not experienced any complications with this technique. In the clinical setting, when the viability of a stoma is dusky and questionable in the early postoperative period, the alternatives include continued observation of the stoma for clear signs and symptoms of necrosis; re-exploration to assess the viability of the small intestine and revision of the ostomy if necessary or examination of the new stoma with a small flexible endoscope to evaluate the mucosal integrity. The latter technique, even if performed carefully, carries a significant risk of damaging the stoma. Re-exploration will resolve the question of the viability of the stoma at the risk of a possibly unnecessary laparotomy. Observation may result in delayed recognition and resection of nonviable intestine. We believe that the ultraviolet examination of the stoma using fluorescein described herein offers a safe adjunctive technique for the postoperative assessment of the viability of the stoma, particularly in instances of ischemia of the intestine.

From the Department of Surgery, University of Minnesota, Minneapolis.

Reprint request: Dr. Charles L. Snyder, Department of Pediatric Surgery, Children's Mercy Hospital, Kansas City, Missouri 64108.

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