

Minimally Painful Tumescant Local Anesthesia for Wide-awake Javid Loop Colostomy Reversal

Javid M. Shah, MBBS, MRCS, MS*; Hari K. Ondiveeran, MBBS, FRCSEd, FRCSC†; Sarvnaz Sepehripour, MBBS‡; Donald H. Lalonde, MD, FRCSC§

The purpose of this article and its videos is to show how to reverse a Javid loop colostomy with minimally painful tumescant local anesthesia without sedation or general anesthesia. We now know how to inject large volumes of dilute local anesthesia over large areas of the body in a minimally painful manner so that all the patient feels is the first poke of a small needle. This recent innovation is enabling large operations such as long bone fracture fixation, breast reduction, forehead flap nasal reconstruction, and large skin grafts to be performed painlessly without the need for an anesthesiology team.¹ All of the risks of general anesthesia such as nausea, vomiting, aspiration pneumonia, malignant hyperthermia, and urinary retention are avoided. Eliminating sedation can be safer in patients with severe medical comorbidities. In appropriate cases, the Javid loop colostomy alternative also eliminates many risks associated with the Hartmann procedure.

HOW TO INJECT MINIMALLY PAINFUL TUMESCENT LOCAL ANESTHESIA FOR LOOP COLOSTOMY REVERSAL

The only medications given to the patient are a maximum of 7 mg/kg of buffered lidocaine and epinephrine. We mix 50 mL of 1% lidocaine with 1:100,000 epinephrine + 5 mL of 8.4% sodium bicarbonate + 50 mL of saline to produce 105 mL of buffered tumescant 0.5% lidocaine with 1:200,000 epinephrine. We follow all 13 tips of minimally painful tumescant local anesthesia injection previously described in open access with multiple videos.²

We start with the smallest needle available (25–30G) to decrease the sting of the initial needle poke. (See Video 1 [online], which displays how to inject minimally painful

tumescant local anesthesia for Javid loop colostomy reversal.) We insert the needle through unscarred skin into fat just adjacent to the stoma. We immobilize the syringe with 2 hands, thumb ready on the plunger, so the patient does not feel the wobbling of the first needle until the skin gets numb. We inject 10 mL before moving the needle at all. We reinsert the needle into 4 more areas that are already numb, so the patient does not feel needle reinsertions. We inject 50 mL of local anesthesia so an area of 3 cm of skin and fat surrounding the stoma is plump and swollen (tumesced). It is ideal to inject the patients outside the operating room to give the 2 medications at least 30 minutes to work before the surgery.

ABDOMINAL WALL LOCAL ANESTHESIA

The subcutaneous tumescant anesthesia will get our dissection to the abdominal wall without pain. Once we get to the abdominal wall, we inject another 30–40 mL of local anesthesia into the abdominal wall to the parietal peritoneum under direct vision as shown in Video 2. (See Video 2 [online], which displays surgical dissection to the abdominal wall, where we inject additional local anesthesia into the abdominal wall to the parietal peritoneum under direct vision.) The parietal peritoneum lining the abdominal wall feels pain when cut or pinched with forceps.³ The visceral peritoneum lining the bowel is insensitive to cutting, sewing, or cautery. However, pulling on the bowel can cause pain similar in character to that of peristaltic cramps.⁴

We finish dissecting out the stoma from the abdominal wall while the parietal peritoneum numbs. Mobilization and scissor dissection are facilitated by the hydrodissection of the local anesthetic. The epinephrine decreases most of the bleeding, so cautery is often not required. (See Video 3 [online], which displays bowel anastomosis; closure of the abdominal wall; and video of the 81-year-old patient saying the surgery was painless, walking at day 3 after passing flatus at day 1, and having a bowel movement at day 2.)

THE JAVID LOOP COLOSTOMY

The Javid loop colostomy is selectively applicable in situations such as volvulus, in which the Hartmann

From the *Ahmadiyya Muslim Hospital Shianda, Kakamega, Kenya; †Department of General Surgery, Dalhousie University, Saint John, Canada; ‡Queen Elizabeth Hospital, Birmingham, United Kingdom; and §Division of Plastic Surgery, Dalhousie University, Saint John, Canada.

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procedure is indicated. The colon is resected, and the experienced surgeon ensures that the 2 ends of the bowel are healthy and will reach the skin without tension. Three-quarters of the lumen (lateral, posterior, and medial) is anastomosed with 3/0 Vicryl interrupted seromuscular sutures. Additional 4–6 seromuscular colon Vicryl sutures secure the three-quarters loop colostomy to the abdominal wall to prevent retraction of the stoma. The remaining unrepaired one-fourth of the lumen mucosa is sutured to the abdominal skin as a loop colostomy. Most of the bowel anastomosis heals during the colostomy period, so the second operation shown in Videos 2 and 3 only deals with anastomosing one-fourth of the bowel wall under local anesthesia (see Videos 2 and 3 [online]). Colostomy closure is performed by an experienced surgeon after ensuring that the distal bowel is healthy and patent.

The Javid loop colostomy has significant advantages over the Hartmann procedure. (See Video 4 [online], which displays the theory behind the Javid loop colostomy.)

The Javid loop colostomy enables venting of colonic contents while allowing three-quarters of the bowel anastomosis to heal. It decreases the risks of complications such as failure to find the distal stump of the colon in the pelvis, adhesions from a second full laparotomy, bladder and ureter injury, enterostomy, pelvic abscess, leakage, readmission, and death. The first author has performed Javid colostomy reversal on 12 of 17 patients under local anesthesia. The other 5 patients preferred general anesthesia. The only significant complications were 2 superficial infections that did not require further surgery and an incisional hernia. Most (12 of 17) of the patients were able to pass flatus and some were able to pass feces per rectum during the colostomy period, thus maintaining the functionality of the distal bowel until colostomy reversal.

Three-quarters of the anastomosed lumen healed in all 17 patients without leakage. Because there is much less dissection than in the Hartmann reversal, the operative time, hospital stay, and postoperative analgesics were less with the Javid reversal, while mobility was earlier and easier.

We were only able to find 1 publication on colostomy closure with local anesthesia.⁵ Unlike our technique, its authors did use intravenous sedation and did not use minimally painful tumescent local anesthesia.

Javid M. Shah, MBBS, MRCS, MS
Ahmadiyya Muslim Hospital Shianda
PO Box 77-50106, Kakamega, Kenya
E-mail: javid.s.m@hotmail.com

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