Case Analysis

Staple Hemorrhoidectomy – A Modified Low Transection Technique of PPH

Shih-Chang Chang
Henry Hsin-Chung Lee

1 Division of Colorectal Surgery, Department of Surgery, Cathay General Hospital, Taipei, Taiwan
2 College of Medicine, Fu-Jei Catholic University, Taipei 242, Taiwan.

Key Words
Stapled hemorrhoidectomy;
Stapled hemorrhoidopexy;
Hemorrhoid

Purpose. Staple hemorrhoidopexy, also known as PPH, initially advocated by Longo, is becoming a procedure of choice for the hemorrhoids. The procedure has less postoperative pain and hastens early returning to work. If adhering to the standard Longo technique and in our experience, it is insufficient sometimes to eradicate prominent external piles and skin tags and leaves patients the impression of persistence of their hemorrhoids. We describe a modified technique to actually excise the hemorrhoids.

Material and Methods. Including 30 patients underwent modified Longo procedures and 30 patients underwent circumferential hemorrhoidectomy. The admission days and postoperative complications were collected including dysuria, pain, delayed bleeding, and perianal swelling or thrombosis.

Results. The patients underwent circumferential hemorrhoidectomy had better cosmesis with less hemorrhoids and skin tags, but the patients underwent modified Longo procedures had less postoperative pain and acceptable postoperative result.

Conclusion. This modified technique offers a straightforward and effective way of dealing with the problem in selective patients and further study is required.

Purpose. Staple hemorrhoidopexy, also known as PPH, initially advocated by Longo, is becoming a procedure of choice for the hemorrhoids. The procedure has less postoperative pain and hastens early returning to work. If adhering to the standard Longo technique and in our experience, it is insufficient sometimes to eradicate prominent external piles and skin tags and leaves patients the impression of persistence of their hemorrhoids. We describe a modified technique to actually excise the hemorrhoids.

Material and Methods. Including 30 patients underwent modified Longo procedures and 30 patients underwent circumferential hemorrhoidectomy. The admission days and postoperative complications were collected including dysuria, pain, delayed bleeding, and perianal swelling or thrombosis.

Results. The patients underwent circumferential hemorrhoidectomy had better cosmesis with less hemorrhoids and skin tags, but the patients underwent modified Longo procedures had less postoperative pain and acceptable postoperative result.

Conclusion. This modified technique offers a straightforward and effective way of dealing with the problem in selective patients and further study is required.

The Longo technique of staple hemorrhoidopexy (circumferential mucosectomy with stapled proctopexy) becomes a choice of treatment for symptomatic 3rd or 4th degree prolapsing hemorrhoids.\(^1\)\(^5\) It works on the premise that stapling interruption of the feeding superior hemorrhoidal arteries above the base of the hemorrhoids was adequate for complete treatment of hemorrhoidal symptoms of prolapsing and bleeding.\(^6\)\(^7\) Several studies have confirmed its benefits in reducing postoperative pain and early recovery, with similar symptom relief compared to that of conventional hemorrhoidectomy (Milligan-Morgan or Ferguson or circular hemorrhoidectomy).\(^7\)\(^14\) In the original Longo technique, with staple line placed at 3.5 to 4 cm above the dentate line, however, has inherent limitations when dealing with circumferential prolapsing piles with predominated external hemorrhoidal components. Patients are left with troublesome skin tags or excessive residual external hemorrhoids, leaving them with the impression of persistence of hemorrhoids and with dissatisfaction of the surgical procedure.\(^15\)\(^16\) Large prolapsing mixed hemorrhoids have been treated traditionally with either a circumferential hemorrhoidectomy or radical three piles hemorrhoidectomy (Milligan-Morgan or Ferguson hemorrhoidectomy).\(^17\)\(^20\)\(^21\)\(^22\) Severe postoperative pain associated with conventional hemorrhoidectomy is feared and dreaded by most patients and by far the most complication associated with the procedure. We modified the original Longo Technique of high transection by using low transection in a sense circumferential internal hemorrhoidectomy with acceptable postoperative pain and less residual hemorrhoidal tissue left. The technique described herein and our initial experience discussed.
Operative Technique
Patients with grade III or IV prolapsing hemorrhoids with prominent external component were selected for low transection. All patient is prepared for surgery in the standard fashion, and placed in the prone Jack-knife position under epidural anesthesia. The Procedure for Prolapsing Hemorrhoids (PPH01, Ethicon EndoSurgery, Cincinnati, OH, USA) equipment is used for hemorrhoidal stapling. The prolapsing piles were initially inspected and a 2/0 Prolene (polypropylene, Ethicon, Inc., Somerville, NJ) circumferential suture is inserted in a similar fashion as described in the original Longo technique except theses sutures were placed 1–2 cm cephalad of the dentate line (Fig. 1). A lifting motion after each insertion of the purse string suture making sure that suture were catching the lax Treitz muscles, not at the internal anal sphincter. A “belt-loop” stitch was inserted diagonally opposite the circumferential purse string knot (Fig. 2) to ensure a more symmetrical ring of mucosa is obtained after staple fired. The 33-mm Hemorrhoidal Circular Stapler (HCS33; Ethicon Endo-Surgery) was then opened to its maximal position and inserted through the purse string suture. The purse string suture was tied tightly around the opened anvil shaft. The threads of the pursestring suture and the belt loop suture were pulled through the side hole of the stapler with the introduction of the stapler into the anal canal. After the stapler closed, and in female patients a vaginal examination must be performed to exclude vaginal inclusion, and then fired. The staple line can be seen at the dentate line or just above it (Fig. 3). Hemostasis for staple line bleeding then were further secured with interrupted 3/0 Chronic sutures as necessary.

Results
To date we have undertaken 30 of the modified Longo procedure (MLP) including 17 male and 13 female patients and 30 patients (16 males and 14 females) underwent circumferential hemorrhoidectomy (CH). Ages ranged from 26 to 86 years old with mean age of 50.7 years in MLP group versus ages ranged from 25 to 70 years old and mean age of 44 years in CH group. All patients were performed as Taiwan National Health Insurance case payment of hemorrhoidectomy, which required inpatient management, with MLP group average 2.8 versus CH group of 4.2 hospital nights. Five patients (16.7%) in MLP group and 8 patients (26.7%) in CH group had postoperative dysuria and one patient (3.3%) versus 2 patients (6.6%) required urinary catheter placement to solve urinary retention. One patient (3.3%) in MLP group needed inpatient care for delayed bleeding and one patient had anal stricture that required secondary surgery from patient’s negligent of needed postoperative care. Postoperative pain control in MLP group needed average 1.3 dose of Meperidine (Demerol, 50mg, IM) versus 2 doses of Meperidine in CH group. Postoperative first day morning patient gait pattern was assessed and classified accordingly to normal gait versus “penguin” gait signifying that of postoperative pain. 73.3% of the patients in the MLP group had normal gait and all patients in the CH group had “Penguin” gait with difficult in walking. Six patients (20%) had postoperative perianal swelling or thrombosis of external piles in MLP group. (Table 1) At a median follow-up of 6 months all patients in both groups were fully continent, with good symptoms control. The patients in the CH group had better “cosmesis” with lesser residual external hemorrhoids and skin tags.

Discussion
There are plentiferous managements of hemorrhoids, range from local outpatients applications to various surgical hemorrhoidectomy procedures. The most common surgical procedures for symptomatic hemorrhoids appear to be the Milligan-Morgan, Ferguson, and Parks operations. All of these procedures offer effective results to manage hemorrhoidal symptoms with few risks and complications20, but they have a notorious reputation for being a painful procedure for a fairly benign disorder. We used circumferential hemorrhoidectomy in selected patients severe prolapsed and prominent external piles who had failed using less aggressive treatment. Circumferential hemorrhoidectomy in the hands of inexperience can result a high incidence of stenosis, soiling, and mucosal ectropion. Whitehead-Rand hemorrhoidectomy (radical hemorrhoidectomy) is, however, best reserved for circumferential third-and four-degree hemorrhoids and can have good results.17,23-26 Despite the successful application of stapling techniques to hemorrhoidopexy, it is handicapped in patients with severe circumferential
prolapsing piles with less optimum results. In 3 patients of the 15 (20 percent) who underwent stapled hemorrhoidectomy, external hemorrhoids were excised at a later stage because of related symptoms of perianal soreness or difficulty with hygiene. Although there are short-term benefits in pain reduction, the long-term symptomatic result is poor compared with conventional excisional hemorrhoidectomy, particularly in patients who have symptomatic external hemorrhoids.27 A prospective randomized study of staple hemorrhoidopexy versus diathermy excision for four-degree hemorrhoids showed that staple hemorrhoidopexy was not effective as a definitive cure for the symptoms of prolapse and itching in these patients.4 The original Longo procedure is modified from a high transection to a low transection of anorectal mucosa, in a sense that of a staple Whitehead procedure, and mucosal ectropion is thus avoided by the procedure itself. Almost all published data demonstrate the benefit lesser postoperative pain of standard Longo procedure, lesser requirement for analgesics, and lesser pain at first bowel movement while compare to the conventional hemorrhoidectomy; but it is still not a “non-pain” procedure. Beside hemorrhoidal symptoms, postoperative pain may be the primary concern for the patient to receive any form of surgical treatment. In the past, a variety of radical procedures including standard hemorrhoidopexy plus excision of the largest secondary pile with mucocutaneous reconstitution, or a modification of the Whitehead or radical hemorrhoidopexy have been used to deal with these problems.18,21,22,27,28 The results, however, have been variable and the techniques generally maligned because of their high incidence of complications, which include suture line dehiscence, fecal incontinence, and anal stenosis. The fear of the lowish staple line causing excessive postoperative pain is unfounded as long as the dentate line is not crossed and the internal anal sphincter is incorporated into the suture line.

This modified method described combines the both benefit of radical excisional and stapling techniques. More complete hemorrhoidal excision is achieved with a secure stapled anastomosis above the sensitive anoderm. Major complications reported in the literature with PPH, such as rectal perforation, retropneumoperitoneum, or retropneumomediastinum can be thus avoided with low transection of the anorectal mucosa and staple line bleeding is easily handled.

Conclusion

The successful treatment of circumferentially prolapsing piles presents a challenge to surgeon. This modified technique offers a straightforward and effective way of dealing with the problem in selected group of patients with prolapsing hemorrhoid and prominent external component. Further study is required to confirm our initial experience.

References


