

RESULTS OF THE METHOD OF TRANSANAL HAEMORRHOID DEARTERIALIZATION FOR TREATMENT OF THE HEMORRHOIDAL DISEASE

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ABSTRACT

PURPOSE: Hemorrhoidal disease is a polyetiologic disorder at active age. Recently, the methods of hemorrhoidal artery ligation (HAL) and transanal hemorrhoid dearterialization (THD) were introduced. The aim of the present study was to analyze the initial results from THD treatment of hemorrhoidal disease.

MATERIAL AND METHODS: The study covered 26 patients, 14 males and 12 females, at a mean age of 46 years, with hemorrhoidal disease. Physical examinations, rectal examination and colonoscopy were preoperatively performed. THD was done of 6 arteries along with mucoplication of the distal rectal mucosa.

RESULTS: There were no early postoperative complications requiring surgery. Patients' complaints were dominated by low to medium pain not requiring any narcotic analgesics. One patient reported bleeding and pain necessitating re-hospitalization on the 11th day and conservative treatment without blood transfusion. Five patients reported mild pain complaints and 7 ones complained of discomfort in the anal area until the end of the second week. In two patients a residual mucous prolapse up to the 6th month without other symptoms was found out.

CONCLUSION: THD is an effective and minimally invasive method after which application mild to moderate pain and good patient's comfort are reported. The relative share of the intra- and postoperative complications is low.

Key words: *hemorrhoids, hemorrhoidal disease, transanal hemorrhoid dearterialization, hemorrhoidal artery ligation*

INTRODUCTION

Hemorrhoidal disease is a polyetiologic disorder which represents proliferation of normal cavernous tissue at the distal section of the colon due to hemodynamic, degenerative, inflammatory and mechanical influences. Morbidity rate in Europe reaches 50% of the population in the active age and presents with a chronic progressive development. The complaints start after the age

of 20 years, usually, between 35 and 55 years. Men are more often affected. Classical methods of surgical treatment of hemorrhoids are effective, however, unfortunately, they are associated with many postoperative complications and pain. A method of transanal hemorrhoidal artery ligation under Doppler control was developed in 1995 (6). Its main objective is to reduce the blood pressure in the hemorrhoidal plexus with decongestion and reduction of symptoms of hemorrhoidal disease without excision. The method is further improved with introduction of various proctoscopes (8). The terms of hemorrhoidal artery ligation (HAL) and transanal hemorrhoid dearterialization (THD) have been adopted as almost synonyms, but the second one includes the mucoplication in the distal rectum.

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Operative equipment

THD system possesses specifically designed proctoscopes with Doppler probe and light source (Fig. 1).

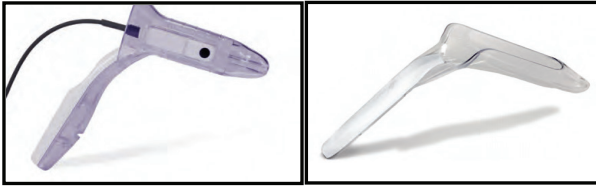


Fig. 1. THD proctoscope with Doppler probe and proctoscope for mucoplication

The terminal branches of the superior rectal artery are identified using the Doppler probe. After finding an artery, the proctoscope working window with specially designed chute and needle carrier slot is just above it, allowing the stitching calibrated in depth and ligation with a specially designed 5/8-26 mm needle. With the aid of the second proctoscope, the mucoplication is performed by spiral longitudinal stitches of the mucosa of the distal rectum, which raise the mucosa in proximal direction by tying down the both ends of the suture.

The aim of the present study was to analyze our own initial experience with THD for the treatment of hemorrhoidal disease.

MATERIAL AND METHODS

A total of 26 patients with hemorrhoidal disease at stages II to IV were operated for a two-year period, from May 2011 to May 2013. No surgery was offered to the patients at stage I. The average age of the operated patients was 46 years. There were 14 men and 12 women. THD was done of 6 arteries along with mucoplication of the distal rectal mucosa. Case history and physical examinations were preoperatively performed in any patients along with rectal examination and colonoscopy to determine the stage of the disease and of the associated colorectal diseases. The classification of Goligher *et al.* (4) was used for disease staging.

Two patients had concomitant perianal fistulas and one had an anal fissure. One fistula and one anal fissure were treated simultaneously with the hemorrhoidal disease. The other patient with a fistula was treated first through minimally invasive method of

obturation with fibrin glue successfully and six months later on pathogenetic treatment of the hemorrhoidal disease and fistula by THD was performed.

The patients were operated under spinal anesthesia except one patient who ran under venous anesthesia. Preoperative antibiotic prophylaxis was not applied.

RESULTS

We did not establish any intraoperative complications except transitory small submucosal hematomas in two patients which didn't impose additional treatment. There were no early postoperative complications requiring surgery. The complaints of the operated patients were dominated by low to medium pain which did not require any applications of narcotic analgesics. On the second postoperative day, pain complaints were minimal and all the patients were discharged.

The patients were followed-up for one-two-four weeks and three-six-twelve months after the operation and were asked and examined for pain, prolapse, bleeding, stenosis and incontinence. One patient (3,8% of the cases) reported bleeding and pain, which required re-hospitalization on the 11th day and conservative treatment without blood transfusion. Five patients (19,2% of the cases) reported mild pain complaints and 7 ones (26,9% of the cases) complained of discomfort in the anal area until the end of the second week. In two patients (in 7,6% of the cases) a residual mucous prolapse up to the 6th month without other symptoms was found out. There were no relapses of the hemorrhoidal disease, thrombosis, anal stenosis and fecal incontinence in all the patients.

DISCUSSION

The method is based on the theory that the main pathogenic cause of hemorrhoidal disease is disbalanced blood circulation in the haemorrhoidal plexus. Pathophysiological studies demonstrate that the branches of the upper rectal artery play a major role in the blood supply of this plexus (2). These branches are dilated and with increased blood flow in patients with the disease (5,7). The blood flow is restricted by ligation of these arteries and as a result decongestion and volume reduction of the plexus is achieved. The aim of this operating procedure

is exactly that end branches of the superior rectal artery, which are anatomically located at 1,3,5,7,9 and 11 hour a clock to be ligated (7,9). Doppler probe allows their easy and precise localization.

Selective ligation of arterial branches and ensuring the space between stitches prevents distortion of venous flow and thrombosis as a complication. THD procedure prevents damage to the anal sphincter due to lack of incision and/or excision during the operation. We do not observe any fecal incontinence after THD. The damage of the sensitive area of pain under *linea dentata* is avoided during the procedure and thus we achieve low to absent pain and faster recovery. By means of mucoplication mucous membrane prolapse is eliminated and the membrane is permanently repositioned back into the rectum. There is a hypothesis that mucosal slip deteriorates further venous drainage and mucosal prolapse exacerbates disease. These circumstances are eliminated by mucoplication and this allows usage of the method in advanced stages of the hemorrhoidal disease.

The operative procedure is minimally invasive, without incisions, excisions and mucosal transposition. It is performed outside of the anal canal (proximally in the rectum). It could be performed under general or spinal anesthesia as well as with sedation and analgesia.

The most common early postoperative complications in the literature available are pain (18,5%), residual mucosal prolapse (12,6%) and bleeding (4,3%), which in 0,15% of the cases needs revision for hemostasis (8,9). Other more seldom complications are the following: fever (3,9%), hemorrhoidal thrombosis (1,8%), urinary retention (0,7%), fecal incontinence and perianal fistula (0,4% each), and acute proctitis (0,2%) (8).

We established a moderate pain only and a protracted low output bleeding in one case.

Literature data about patients' postoperative follow-up for one and more years report mucocutaneous prolapse in 10,8%, occasional bleeding in 9,7%, and pain during the defecation in 8,7% of the patients (3,8). Reviews about patient's satisfaction after THD operation show a positive assessments in approximately 95% of the cases (1,5). Our results correspond with these figures, too.

CONCLUSION

THD is an effective and minimally invasive method after which application mild to moderate pain and good patient's comfort are reported. The relative share of the intra- and postoperative complications is low. Restoration of the normal physical activity and lifestyle is achieved quickly and postoperative symptoms are resolved in short terms.

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