

Diagnosis and treatment of haemorrhoids

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DEFINING THE SUBJECT

These guidelines provide a review of diagnosis, conservative and surgical treatment of haemorrhoids with primary focus on the surgical treatment.

ABBREVIATIONS

MMH (Milligan Morgan Haemorrhoidectomy), SH (Stapled Haemorrhoidopexy), DG (Doppler Guided), HAL (Haemorrhoidal Artery Ligation), RAR (Recto Anal Repair), THD (Transanal Haemorrhoidal Dearterilization)

QUICK GUIDE

In symptomatic hemorrhoids it is recommended, that conservative treatment is used as basic treatment regardless of grading. The vast majority of grade II hemorrhoids are treated conservatively, but surgery may be considered in a few cases with pronounced symptoms. In these cases chirurgia minor, Doppler guided dearterilization procedures or stapled haemorrhoidopexy are recommended. In grade III and IV Doppler guided dearterilization procedures, stapled haemorrhoidopexy (Grade III) or conventional Milligan Morgan haemorrhoidectomy are recommended.

INTRODUCTION

Development in the treatment of haemorrhoidal disease over the last 20 years has moved towards less invasive and non-ablative surgery. Several new techniques have been developed, but the use of these techniques in clinical practice and the general man-

agement of patients with haemorrhoidal disease, seems highly variable in Denmark.

The initiative to this national guideline has been taken by the colorectal section of the Danish Surgical Society, with the aim of ensuring patients with symptomatic hemorrhoids the best possible diagnosis and treatment based on the available scientific evidence.

DEFINITIONS

There is no consensus in the literature on how to define hemorrhoids. There is a distinction between internal and external hemorrhoids. Generally internal hemorrhoids are defined by an expansion of the normally occurring anal vascular cushions located in the upper part of the anal canal^{1,2}. The internal hemorrhoids are covered by a mucous membrane. The external hemorrhoids originate from veins surrounding the anal verge and are covered by the skin. The term "haemorrhoidal disease" is used only when the expansion of the vascular cushions in the anal canal and the external veins cause symptoms. Recurrence of the haemorrhoidal disease is defined as the recurrence of the symptoms in combination with objective findings.

FREQUENCY

The frequency peaks between the age of 45 and 65 years and is more common in men³. The true prevalence is unknown, but data from the National Center of Health Statistics in the United States estimates a prevalence of 4.4%³.

ETIOLOGY

In the literature, there are several theories describing the causes of the haemorrhoidal disease. Some believe that it is primarily a disease of the veins in line with the varicose veins in the esophagus. A morphological and functional failure of a sphincter mechanism coordinating the filling and drainage of the anorectal vascular cushions may be the cause⁴. Another hypothesis is that the disease is caused by a weakening of the collagen support in the anal canal where the submucosal collagen fibrils degenerates

Haemorrhoidal grading (Goligher)	Conservative treatment	Chirurgia Minor	Dearterilization procedures (DG HAL RAR/ THD)	Stapled Haemorrhoidopexy (SH)	Conventional Haemorrhoidectomy (MMH)
Grade I	+	-	-	-	-
Grade II	+	(+)	(+)	(+)	-
Grade III	+ (as supplement to surgical treatment)	-	+	+	+
Grade IV	+ (as supplement to surgical treatment)	-	+	-	+

with sliding mucosa during defecation or physical activity as a result⁵. A third theory suggests an increased arterial flow to the vascular plexus⁶. Constipation and bowel habits with straining are associated with the haemorrhoidal disease^{3,7}.

HISTORY

The common symptoms are: bleeding, prolapse, pain, discharge, itching and hampered anal hygiene. There is no correlation between specific symptoms and anatomic grading. A few attempts to create a symptom score have been made⁸, but a validated symptom score is not available at the moment. History should include toilet habits, stool frequency, stool consistency and difficulties in rectal emptying. Dietary habits in terms of fiber intake should be assessed.

PHYSICAL EXAMINATION – GRADING

Treatment of the haemorrhoidal disease and assessment of treatment outcome must be based on a uniform grading. Investigation in different positions is described, lithotomy position, left lateral position (Sims) position, sitting on a toilet chair and photo documentation with the patient standing or sitting. Grading is dependent on the position of the patient examined. The prerequisite for a proper grading is standardized examination conditions, or at least, a description of the position during examination. The grading system described by Goligher, is the most commonly used and is based on objective findings and history⁹:

- Grade I: No prolapse, vascular cushions in the anal canal visualized by endoscopy.
- Grade II: Prolapse during defecation, but spontaneous reduction.
- Grade III: Prolapse during defecation, which need manually reduction.
- Grade IV: Persistent prolapse irrespective attempt to reduce the prolapse.

ENDOSCOPY

The current national guidelines to exclude colo-recto-anal neoplasia must be followed.

EVIDENCE AND RECOMMENDATIONS

Evidence levels and recommendations are based on classifications used in publications from the U.S. Agency for Health Care Policy and Research (AHCPR), respectively 1992 and 1994.

Scientific evidence

Ia: Meta-analysis of randomized controlled trials.

Ib: At least one randomized controlled trial.

IIa: At least one good controlled non-randomized study.

IIb: At least one other type of good experimental non-randomized study.

III: Good descriptive studies (cohort, case-control, case series).

IV: Expert Committees, well-esteemed authorities, cases.

Recommendations

A: At least one randomized controlled trial among several good studies, all of which are fundamental to the recommendations (Ia, Ib).

B: Requires good clinical studies as a basis for recommendation (IIa, IIb or III).

C: Requires expert committee or authority recommendation without no good clinical studies as a basis (IV).

LITERATURE SEARCH

The search was done via Pubmed

(<http://www.ncbi.nlm.nih.gov/pubmed>) using Medical Subject Headings (MeSH) with the word haemorrhoids with relevant subheadings, and specifying restrictions (limits) to species (human), languages (English). Review articles were reviewed for original articles relevant to the topic.

Table 1 Statements and level of evidence

Statement	Level of evidence
Conservative treatment is selected as the primary treatment for grade I + II and as supportive care after surgical treatment	Ia
Chirurgia minor may be used in grade II hemorrhoids. Rubber band ligatures are the best documented and most effective choice among these procedures	Ib
DG HAL RAR / THD is an effective alternative to SH and MMH for hemorrhoids grade II-IV	Ib
The postoperative pain by DG HAL RAR / THD is less compared to MMH and the patients return more rapidly to normal activity	Ib
DG HAL RAR / THD and SH are equal in terms of symptom control and recurrence	Ib
SH is an effective treatment for hemorrhoids grade II-III	Ia
SH has a higher rate of additional operations, but less pain than MMH	Ia
SH patients return more rapidly to normal activity compared with MMH	Ia
SH can be repeated if recurrence occur	IIa
SH have higher relapse rate of prolapse than MMH during long-term follow-up	Ia
MMH is an effective treatment for hemorrhoids grade III-IV	Ia
MMH provide fast and good symptom control and the recurrence rate is low. The need for additional operations is lower compared with other surgical alternatives	Ia
MMH is associated with higher levels of pain and longer recovery time compared to DG HAL RAR / THD and SH	Ia
Surgical treatment of hemorrhoids in immune suppressed patients should be undertaken only in selected patients	IIa
Surgical treatment of hemorrhoids in patients with Crohns disease should be undertaken only in selected patients	IIb
Surgery should not be used as first-line treatment in acute complications of internal hemorrhoids	IV
Treatment of thrombosed external hemorrhoids may take place within the first week, incision made in local anesthesia is the treatment of choice	IIb
Surgical treatment of hemorrhoids / rectal varicose veins in patients with cirrhosis occurs only on vital indication	III
Pregnancy: treatment of hemorrhoids should primarily be conservative	III
Treatment of hemorrhoids in children is a specialist task	IV

CONSERVATIVE TREATMENT

Diet

The rationale for increased dietary fiber intake or laxative treatment is to increase fecal volume and soften stools in order to defer excessive straining during the defecation¹⁰, and thereby reducing the mechanical stress on the anal vascular cushions.

Local treatment

Topical application of corticosteroid ointment often in combination with local anesthetics is widely used. The rationale is to reduce the edema, which may reduce symptoms. However, no causal effect has been demonstrated. Suppositories with the same content often migrate to the rectum or colon, and they are without any effect. Another form of local treatment is repeated seat baths¹¹. The rationale is symptom relief through sphincter relaxation and better perineal hygiene.

Symptom Control and Complications

Increased dietary fiber intake is free of complications and halves the risk of prolapse as well as bleeding^{10,12}. Overall, the risk of recurrence is still high. Evidence for local treatment does not exist. Treatment with steroid ointments must not be used for longer than 2-3 weeks due to risk of contact dermatitis. Perineal burn and local septic complications have been described after seat baths.

CHIRURGIA MINOR

Background

In addition to conservative treatment for hemorrhoids, it is common practice to use a minimally invasive surgical procedure applied through the anoscope, without anesthesia and with the possibility of repeated interventions over time. All these procedures are designed to induce the local fibrosis at the base of the hemorrhoidal column, create obliteration of the haemorrhoidal vessels and fixation of the submucosa¹³. All together this may reduce the tendency to prolapse and thereby minimize symptoms.

Rubber band ligation

Application of a rubber band at the anorectal angle at the base of each haemorrhoidal column causes submucosal fibrosis^{14,15}. A similar effect is seen after injection of phenol oil infrared coagulation and by radio frequency ablation.

Symptom Control

Recurrence after rubber band ligation is found in 20%¹⁶. Rubber band ligation is significantly better than radiofrequency ablation and injection sclerotherapy^{13,17,18}. Two randomized studies found equal efficacy of infrared coagulation vs. rubber band ligation^{19,20}. Rubber band ligation is significantly inferior in terms of symptom reduction compared to the more invasive procedures such as stapled anopexy and Milligan-Morgan haemorrhoidectomy, but associated with fewer complications^{21,22}.

Complications

Minor anal bleeding is common after rubber band ligation when the rubber ring is exfoliated. Significant bleeding is seen in 2%²³. In rare cases, surgical hemostasis may be required. All minimally invasive surgical methods are associated with pain in 46-90% of patients^{23,24}. Local or generalized sepsis, necrosis, hepatic failure, periprostatic nerve damage and death have been described.

Recommendations

Conservative treatment is recommended as first line treatment of Grade I and II hemorrhoids and as additional treatment when surgery is necessary (C).

Chirurgia minor can be used at Grade II hemorrhoids. Rubber

bands ligation is the best-documented and most effective choice among these procedures (A)

DOPPLER GUIDED HAEMORRHOIDAL ARTERY LIGATION RECTO ANAL REPAIR / TRANS ANAL HAEMORRHOIDAL DEARTERIALIZATION (DG HAL - RAR / THD)

Background

DG HAL technique was first described by Morinago in 1995²⁵. In grade 3 and 4 hemorrhoids treated with the DG HAL technique alone, a high recurrence rate was found²⁶. The addition of the RAR principle brought the recurrence rate down to an acceptable level²⁷. The literature is characterized by the fact that the technique is relatively new. It consists of few randomized studies²⁸⁻³¹, a single review article³², and a number of case series^{26,33-58} of varying quality.

Procedure

Bowel preparation, antibiotic and thrombosis prophylaxis follow the policies of the department. The procedure can be performed in local anesthesia (an anal block), spinal or general anesthesia. In theory the injection (liquid volume + epinephrine) of local anaesthetics may interfere with the Doppler signal. Therefore, spinal or general anaesthesia is recommended. However, there is no evidence for this statement.

A proctoscope with a Doppler transducer is inserted through the anal verge and placed with the Doppler transducer in the distal rectum. The distal rectum is examined systematically (360 degrees) and every time a Doppler signal is identified, a ligation of the vessel is performed (HAL). The average number of ligatures per procedure is between 5 to 7²⁷. If a prolapse occurs in the same position a mucopexy is performed (RAR). There is no consensus in the literature whether to perform the mucopexy by the prolapse or symmetrically in the anal canal. The average number of mucopexies per procedure is between 3 to 4²⁷. It is recommended to finish the procedure with an anal block. The final result should not be assessed until after 6-8 weeks²⁷.

Recurrence rate and control of symptoms

At final follow-up > 12 months, the success rate was the same for THD as for SH^{30,40}. There was no difference between early postoperative complications, operation time or functional outcome assessed by the Wexner score. There was significantly better symptom control in terms of prolapse seen after MMH vs. the DG HAL. In the DG HAL group the consumption of analgesics was less than in the MMH group³¹.

There was a quicker return to normal activities in DG HAL group vs. MMH group²⁸.

Both techniques provided good symptom control. A review article³² reports the following recurrences rates: prolapse 10.8%, bleeding 9.7% and painful defecation 8.7%.

Early postoperative complications

Three significant postoperative bleeding episodes requiring surgical intervention among 1996 patients have been described³². Postoperative pain was seen in 18.5%³². Other early complications observed were postoperative bleeding 4.3%, fever 3.9%, anal fissure 0.8%, urinary retention 0.7%, anal fistulae 0.4% and incontinence 0.4%³².

Life-threatening complications have not been reported after DG HAL RAR / THD.

There is no valid information on late postoperative complications.

Conclusion

The DG HAL RAR / THD procedures are effective alternatives to SH and conventional haemorrhoidectomy in the short and medium term. The advantages of DG HAL RAR / THD techniques are, that they are minimally invasive, non-ablative, they are effective even

at 4 degree hemorrhoids, and no serious adverse events have been reported. The postoperative pain is substantially lesser compared to conventional haemorrhoidectomy and patients return to normal activities within a few days.

DG HAL RAR / THD and SH are equal with respect to symptom control and recurrence rates, but inferior compared to MMH.

Recommendations

DG HAL RAR / THD are effective methods in the treatment of hemorrhoids level 2-4 (A)

STAPLED HAEMORRHOIDOPEXY (SH)

Background

In 1998 Antonio Longo described a new transanal stapeling procedure as an alternative to conventional excisional haemorrhoidectomy⁵⁹.

Procedure

The operation is usually performed in spinal analgesia, general anesthesia or a local anorectal block with the patient in a combined lithotomy and Trendelenburg position. Enema, antibiotic and thrombosis prophylaxis are administered according to the local routine.

A special sterile kit consisting of a circular stapler, 33 mm, a circular anoscope with dilator and a suture anoscope is used. With this technique a ring-shaped doughnut of mucosa and submucosa proximal to the dentate line is removed. Stapling of the defect will result in an interruption of the feeding arteries to the haemorrhoidal tissue and a repositioning of the prolapsed tissue to a normal anatomical position⁶⁰.

Excision of skin tags can be added to the stapling procedure when needed to reduce the risk of subsequent fecal soiling. The superficial wounds should be left open. SH can be repeated if recurrence occurs⁶¹.

Recurrence rate and control of symptoms

At final follow-up > 12 months a recurrence rate of 8.8% has been reported. Focusing on specific symptoms the recurrence rate of prolapse was 12.6%, of bleeding 16.3% and of pain during defecation 9.3%. The incidence of subsequent additional operations was 8.7%⁶². The recurrence rate after SH is increasing with increasing degree of haemorrhoidal disease^{61,63}.

Early postoperative complications

Several studies have demonstrated significantly less pain after SH than after conventional haemorrhoidectomy although the procedure is not without pain⁶⁴⁻⁶⁶. Return to normal activities is significantly faster after SH than after conventional haemorrhoidectomy⁶⁷.

Postoperative bleeding after SH occurs in 4.1 to 5%^{68,69}. The incidence of major postoperative bleeding, defined as bleeding requiring surgical haemostasis and readmission, is low⁶⁷. Urinary retention is a frequent postoperative complication and occurs in 12.3 % of the cases⁶⁷.

Late postoperative complications

After one year follow-up 9% of patients who had SH complained of persisting pain and this was reduced to 5% after two years. SH was associated with less symptoms of anal stenosis than the conventional haemorrhoidectomy, but the difference was not significant. After one year follow-up 3% vs. 7% of patients were complaining of symptoms of anal stenosis. After two years it was 4% for each procedure. A weakness of the study is that the symptoms of stenosis are not clearly defined and not strictly comparable. Anal stenosis occurring after conventional haemorrhoidectomy was mostly localized to the mucocutaneous area in the anal canal while the stenosis after SH was at the anastomotic line.

Incontinence is reported in 3-4% of the patients⁶². Reports of serious complications occurring with SH exist but are rare⁷⁰.

Conclusion

Stapled haemorrhoidopexy is associated with a significantly higher recurrence rate and a higher need for re-operation in long-term follow-up than the conventional haemorrhoidectomy. Stapled haemorrhoidopexy causes less pain and fewer cases of acute urinary retention postoperatively and patients will significantly faster return to normal activity. Recurrence rate after stapled haemorrhoidopexy is increasing with increasing degree of haemorrhoidal disease.

Recommendations

Stapled haemorrhoidopexy is an efficient method to treat haemorrhoidal disease grade II and III (A)

MILLIGAN-MORGAN HAEMORRHOIDECTOMY (MMH)

Background

Since the method was described in 1937⁷¹ it has been considered the gold standard in surgical treatment of Grade III-IV hemorrhoids. The method is based on the simple assumption that excised hemorrhoids can not bleed nor cause prolapse. The introduction of new concepts in surgical treatment of hemorrhoids are often compared with the conventional MMH.

Procedure

In Denmark, the procedure is often performed in the lithotomy position and general anesthesia, but can be performed in the prone position and under local anesthesia. Intestinal cleansing, antibiotic and thrombosis prophylaxis follow local routines. Each hemorrhoidal pile is defined. The skin is incised laterally and at the edge of the prolapsing part of the pile. Thereafter, the external component is mobilized by subcutaneous dissection. The dissection continues in the submucosal plane to the base of the pile, where the vessel is ligated. This is repeated for each hemorrhoidal pile. The operation must leave mucosal and skin bridges between each incision and the skin defects should be leaf shaped. Both factors are important to prevent anal stenosis after secondary healing. The defects after haemorrhoidectomy can be closed (Ferguson's method). This might cause less postoperative pain and wound problems^{72,73}. However, one study demonstrated superior results with the Ferguson method regarding anal continence⁷⁴. The Ferguson method has not gained acceptance in Denmark. The use of different "hemostatic" instruments such as the LigaSure[®] reduces intraoperative bleeding and causes less postoperative pain⁷⁵. Postoperatively, patients should have oral pain killers and use laxatives. Some studies have found pain reduction using metronidazole applied either locally or systemically^{76,77}.

Recurrence rate and control of symptoms

Results vary widely in the literature. Generally, better results are found in prospective randomized trials and large patient materials from individual institutions. From randomized trials, symptom control has been reported in 82% of patients 1-2 years after surgery, while recurrence was found in 1.9%⁶². Symptoms such as prolapse, bleeding, pain on defecation occurred in 8%, 13% and 9%, respectively.

Early postoperative complications

A cohort study of 500 patients found a complication rate at 22%, including urinary retention in 16% (mostly men), delayed bleeding in 1.6%, mucosal stricture at the dentate line in 3.4%, delayed wound healing in 0.6% and blood transfusion in 0.4%⁷⁸. All studies show significantly more and longer-lasting pain after MMH compared to other surgical methods.

Late postoperative complications

In a study of 2,280 operations with 1-12 years follow-up, re-bleeding occurred in 0.4%. None of the 2280 patients were re-operated and none developed anal stenosis⁷⁹. In total, 20% of patients had previously undergone PPH procedure or Doppler guided haemorrhoidal arterial ligation. Anal incontinence was found in 33% of patients after 2-11 years, and 29% of these could be related to the MMH operation⁸⁰. Overall, 67% of patients were satisfied with the operation. In a metaanalysis, the frequency of soiling, hygiene problems, and anal incontinence was 3.6% after more than 1 year follow up⁶². Serious complications occur casuistically.

Conclusion

The MMH procedure is an effective treatment for hemorrhoids grade 3-4 in the short and long term. The advantage of MMH procedure is, that it provides good symptom control, and that recurrence and additional operations are significantly less compared with other surgical alternatives. The downside is that MMH procedure is associated with higher levels of postoperative pain compared with SH and DG HAL RAR / THD, and that return to normal activities is significantly longer after MMH. Serious complications have been described by MMH.

Recommendation

MMH is an effective method of surgical treatment of grade 3-4 hemorrhoids (A)

ACUTE COMPLICATIONS IN HAEMORRHOIDAL DISEASE

Background

Acute complications are seen as two disease entities. The incarcerated internal hemorrhoids, where the venous drainage of unknown causes is compromised, which result in a more or less tense swell due to edema, venous thrombosis with affected microcirculation and secondary necrosis. The external hemorrhoids with thrombosis are characterized by a sudden and painful perianal skin swelling.

Incarcerated internal hemorrhoids

There are no prospective randomized studies comparing conservative with acute surgical treatment, but several retrospective studies and one cohort study. All support the opinion that surgery is indicated for the acute complications of haemorrhoids, thus reducing overall morbidity⁸¹⁻⁸⁴.

A single study pointed out that treatment should be individualized, and especially in mild cases without thrombosis and compromised microcirculation, a conservative approach was recommended⁸⁵.

The general strategy in the majority of Danish hospitals favors conservative treatment of incarcerated internal hemorrhoids.

Conclusion

Evidence so far has not been convincing enough to change the conservative but safe attitude among Danish surgeons towards the treatment of incarcerated hemorrhoids.

Recommendation

In Denmark first choice treatment for incarcerated hemorrhoids is conservative (C)

External hemorrhoids with thrombosis

There are no prospective studies comparing the results of conservative and surgical treatment of external hemorrhoids with thrombosis, but several retrospective studies recommend surgical intervention in the acute phase^{81,86-88}.

Recommendation

External hemorrhoids with thrombosis are best treated within the first week with incision and evacuation of the thrombus under local anesthesia (B).

SPECIAL CONDITIONS

Immunosuppressed patients

Although surgical treatment does not appear to increase mortality in patients with hematological malignancies (leukemia, lymphoma), surgery should be performed only as a last resort to relieve pain and gain control of infection⁸⁹. HIV infection is not a contraindication for surgical treatment, but surgery should be undertaken with great caution because of increased risk of complications^{90,91}.

Using SH and DG HAL RAR / THD external wounds are avoided as well as problems with wound healing. It should be emphasized, that the data in this group of patients is based on case reports. Antibiotics are generally recommended according to the specific recommendations for each disease group.

Recommendation

Surgical treatment of haemorrhoidal disease in immunosuppressed patients should be undertaken only in selected patients (B).

Crohn's disease

In a study from 1977 on patients with Crohn's disease, a very high rate of serious complications after both conservative and surgical treatment of haemorrhoids was found⁹². About 30% of patients ended up with an abdominoperineal extirpation of the rectum as a result of the treatment. In a more recent study 15 out of 17 Crohn patients without signs of active disease, healed well following haemorrhoidectomy⁹³.

Crohn patients with hemorrhoidal disease and severe symptoms that cannot be controlled conservatively, surgical treatment can be offered provided optimal medical control. Antibiotic treatment may be considered, but there is no evidence.

Recommendations

Treatment of haemorrhoidal disease in Crohn patients should be undertaken only in selected cases (B).

Patients with hepatic cirrhosis / portal hypertension

Porto- systemic shunts are present in the anal canal and hence patients with portal hypertension have an increased tendency for ano-rectal varices⁹⁴. These can be difficult to separate from haemorrhoids, but a history of cirrhosis / portal hypertension should increase awareness. Fatal outcome after haemorrhoidal surgery in these patients has been described⁹⁵. DG HAL and THD have been used to achieve hemostasis in bleeding rectal varices (personal communication).

Recommendations

Surgery for haemorrhoids in patients with portal hypertension should only be performed on vital indication (C)

Pregnancy

Haemorrhoids in pregnancy are a common finding. The incidence increases as pregnancy progresses. The available literature is primarily concerned with the safety of symptom-reducing local treatment.

A study from 1991 from the USA 95 reported on 25 women operated on during pregnancy (of a population of more than 12,000

pregnant women over 6 years, equivalent to 0.2%)⁹⁶. All had a prior history of haemorrhoids. All underwent closed Ferguson procedure in local anesthetic. One patient had post-operative bleeding; no other post-operative complications were reported. There were no reports of harm to the fetus or pregnancy complications. A total of 24% were subsequently treated for recurrence.

Recommendations

Treatment should primarily be conservative (C)

Acute complications of haemorrhoidal disease in pregnant women should be treated as described in the section: "Acute complications in haemorrhoidal disease" (C)

Haemorrhoids in Children

True haemorrhoids are usually not found in children⁹⁷. The main differential diagnosis is rectal prolapse. Diagnosis and treatment is a specialist task (pediatric surgeon).

Recommendations

Diagnosis and treatment is a specialist task (C)

SUMMARY

These guidelines provide a review of diagnosis, conservative and surgical treatment of haemorrhoids with primary focus on the surgical treatment. In symptomatic hemorrhoids it is recommended, that conservative treatment is used as basic treatment regardless of grading. The vast majority of grade II hemorrhoids are treated conservatively, but surgery may be considered in a few cases with pronounced symptoms. In these cases chirurgica minor, Doppler guided dearterialization procedures or stapled haemorrhoidopexy are recommended. In grade III and IV Doppler guided dearterialization procedures, stapled haemorrhoidopexy (Grade III) or conventional Milligan Morgan haemorrhoidectomy are recommended.

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