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Guidelines of the German Association of Coloproctology

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Haemorrhoidal disease

ICD-10: I84

Definition

The anatomical superior haemorrhoidal plexus (rectal venous plexus or corpus cavernosum recti) is a circular, spongy, broad-based cushion of blood vessels located in the submucosa of the distal rectum, extending up to immediately above the dentate line. It is an important component of the anal continence organ and is responsible for the fine sealing of the anus (Gibbons et al.). The term "haemorrhoids" is used when enlargement occurs. Haemorrhoidal disease (symptomatic haemorrhoids) is present only if the haemorrhoids cause problems.

Classification

The haemorrhoids are classified according to their size increase and the extent of their prolapse into the anal canal or outside the anus. The most frequently used international classification is that of Goligher, which is a four-stage grading system:

I	Enlarged superior haemorrhoidal plexus, only visible on proctoscopy
II	Prolapse on defaecation - spontaneous retraction
III	Prolapse on defaecation - no spontaneous retraction; manual reduction required
IV	Permanent prolapse - irreducible

The ICD-10 diagnosis catalogue is not a suitable tool for the classification of haemorrhoids.

Epidemiology

No valid epidemiological studies on the prevalence of haemorrhoids are available.

Aetiopathogenesis

There are no confirmed aetiological data. The available data are scarce and partially contradictory. Various factors are currently thought to be responsible for the development of haemorrhoidal disease: wrong diet and impaired defaecation, anorectal dysfunction, familial disposition and increased intra-abdominal pressure of various origin.

Symptoms

The most common symptom is painless transanal bleeding. It can occur once only, recurrently or continuously over a long period. The different types of bleeding are not pathognomonic for haemorrhoidal disease. Impaired fine continence can result in a mucous, faecaloid secretion; this leads to irritation of the perianal skin with pruritus, a burning sensation and discharge. The symptoms of advanced haemorrhoidal disease are a sensation of pressure or a foreign body sensation and, in some cases, pain due to incarceration and/or thrombosis of the prolapse. The

size of the haemorrhoids does not correlate with the symptoms.

Diagnostic procedures and differential diagnosis

In addition to taking the medical history, inspection, palpation, proctoscopy and rectoscopy are necessary. It should be noted that haemorrhoids are generally not palpable. Differential diagnoses are: anal tags, anal thromboses, anal or anodermal prolapse, anal fissure, anal fibroma, anal and rectal carcinoma, rectal polyps, rectal varicose veins, cavernous haemangioma and angiodysplasias.

Therapy

An indication for treatment is present only in haemorrhoidal disease.

Conservative and semioperative treatment

Basic therapy consists of optimising dietary habits and bowel movements. A meta-analysis (Alonso-Coello et al.) of seven randomised, controlled studies (Broader et al., Foster et al., Hunt et al., Jensen et al., Moesgaard et al., Perez-Mirinda et al., Webster et al.) showed that a high-fibre diet has a positive effect in the treatment of symptomatic haemorrhoids.
In medicinal therapy, preparations for the relief of haemorrhoids are used. As locally applied medicines, ointments, creams, suppositories and suppositories with a gauze lining (anal tampons) are used. Active substances that are classed by the WHO as "essential drugs" in the treatment of haemorrhoidal disease are either local anaesthetics (e.g. lidocaine), astringents (e.g. policresulen) or anti-inflammatory drugs (e.g. corticosteroids). Medicinal therapy does not treat the cause of the haemorrhoidal disease; it is only symptomatic and adjuvant treatment to relieve the acute symptoms.
As internally administered medicines, drugs such as the flavonoids (diosmin and rutoside) are available, which were primarily developed as treatment for venous disorders. In Germany, they have little or no therapeutic relevance.

Intrahaemorrhoidal sclerotherapy (injection therapy or obliteration), which was introduced in 1936 by Blond and Hoff, is mainly used in grade I and II haemorrhoidal disease. The complication rate is low (<1%), but the recurrence rate after three years is high (68%) (Staude). No randomised controlled studies are available, however.
Due to the allergenic potency of 20% quinine solution (according to Blond), other substances that only very rarely cause allergic reactions are usually used in sclerotherapy: polidocanol solution (= Aethoxysklerol® 3% and 4% or the non-officinal 10% alcoholic polidocanol solution) and a zinc chloride solution (NRF [Neues Rezeptur-Formularium]).

In suprahaemorrhoidal sclerotherapy (according to Blanchard) a 5% (almond or peanut oil) phenol solution is administered as a submucosal injection. This procedure is particularly widespread in the Anglo-American region. According to the scientific literature, the results of randomised, controlled studies are between 14% (Walker et al.) and 60% (Cheng et al.) and the complication rate is low (<1%), although the recurrence rate is high, at 80% after three years (Kanellos et al.). This therapy is effective in 75-89% of patients with grade I, II and III haemorrhoidal disease (Cataldo et al.). The positive representation of the results in grade III haemorrhoids has not been confirmed by further data in the scientific literature. In Germany, use of phenol in humans is legally problematic. The physician must take personal responsibility for its use.

Rubber band ligation (according to Barron, 1963) is suitable for the treatment of grade II and III haemorrhoidal disease. A systematic review compared ligation with conventional haemorrhoidectomy (Shammugam et al.). The authors recommend ligation for grade II haemorrhoidal disease, due to the low rate of side effects and complications. Prior to every sclerotherapy or ligation, proctoscopy must be performed, in order to exclude any current contraindications.

Infrared coagulation (Neiger 1979) is not recommended in the therapy of grade I and II haemorrhoidal disease, due to insufficient efficacy.
Doppler-guided haemorrhoidal artery ligation (dgHAL) (Morinaga et al., 1995) ligates the branches of the afferent superior rectal artery proximal to the haemorrhoidal plexus. There is currently only one randomised, controlled study available (Bursics et al.), so that no assessment of this procedure is yet possible.

Cryotherapy (Lewis, 1969) is hardly used today, as the patients can have a long period of postoperative pain and are impaired by permanent, severe anal discharge. No paper has been

published on this method during the past 20 years.

Electrotherapy (Norman, 1989) applies direct current into the haemorrhoids using a needle with the aim of fibrosis. Due to lack of validated results, this method cannot be recommended.

Bipolar diathermy coagulation with high-frequency electric current (Griffith, 1987) was initially introduced as the treatment method for all grades of haemorrhoidal disease. No validated results are available and the procedure cannot therefore be recommended.

Maximum anal sphincter dilatation under general anaesthesia (Lord, 1968) - with 4 fingers of each hand - based on the hypothesis of primary hypertension of the internal sphincter muscle as the cause of the haemorrhoidal disease. The method leads to an incontinence rate of up to 51% (Konsten et al.); possible damage is irreparable due to the uncontrolled tearing of the sphincter apparatus, so that this method should not be used.

Surgical treatment

Indications:

Surgical treatment is indicated in symptoms that cannot be treated with conservative measures and/or which are persistent. The aim of surgical treatment is the restoration of normal anatomical conditions and on no account the complete removal of the enlarged haemorrhoidal plexus.
In patients with reduced immunocompetence or an increased tendency to bleeding and in patients with chronic-inflammatory bowel disease and catabolic metabolic disorders, the indication for surgery must be cautious and determined on an individual basis.

Contraindikations:

Contraindications for haemorrhoidectomy are inflammatory anal disorders, such as abscess, fistula or gangrene. In such cases, priority must be given to treatment of the inflammatory process; the haemorrhoidal disease should be treated at a later date. Acute complications of haemorrhoidal disease, such as thrombosis, incarceration and associated irreducible prolapse, should primarily be treated with analgesics and anti-inflammatory drugs. Depending on the further course of the disorder, surgery may be necessary at a later date.

Surgical techniques:

Segmental or circular forms of haemorrhoidal disease require different surgical procedures.

Segmental procedures:

Open haemorrhoidectomy	Milligan-Morgan
Submucosal haemorrhoidectomy	Parks
Closed haemorrhoidectomy	Ferguson

Circular procedures:

Reconstructive haemorrhoidectomy	Fansler-Anderson/Arnold
Supra-anodermal haemorrhoidectomy	Whitehead
Stapled haemorrhoidopexy	Longo

When excising several segments, it must be ensured that sufficiently broad anodermal bridges are maintained. In circular haemorrhoidal prolapse, a procedure should be selected that largely retains the anoderm and re-attaches it in the anal canal (Fansler-Anderson, Parks). The stapled method ideally allows such a procedure in reducible circular haemorrhoidal prolapse without trauma of the anoderm.
Haemorrhoidectomy using laser offers no advantages compared with conventional surgical methods (Leff et al.)

Lateral subcutaneous sphincterotomy (Notaras or Parks) should no longer be performed, as the long-term results are not good and many patients show signs of incontinence.

Results, complications, relapse:

Milligan-Morgan procedure versus Ferguson procedure

Evaluation (Wolf et al.) of almost 90,000 operations showed the following complications: secondary bleeding 1.3 vs 1.31%, wound infection 0.72 vs 1.33%, abscesses 0.45 vs 0.50%, stenosis 1.88 vs 1.28%, incontinence rate for liquid stool 1.35 vs 1.11%. Baradnay reports that 90.2% of patients operated according to the Milligan-Morgan method were asymptomatic after 1-7 years.
Following surgery using Ferguson's technique, 67-92% of patients were asymptomatic after 5 years (Guenin et al., Ganchrow et al., McConell et al.). Following comparison of several randomised studies, neither of the two techniques showed significant superiority.

Fansler-Anderson/Arnold procedure

The secondary bleeding rate was 1-4% and the lobular necrosis rate was 5-14%. After 5-6 years, 78% of patients were asymptomatic (Lacher).

Parks' procedure

The following complications were recorded: secondary bleeding 1.8-5.8%, suture dehiscence 0.45-6%, abscesses 0-0.5%, anal tags 5.9-6.5% and stenosis 0.7-1.6%. Relapse was seen in 2.6-7% of patients (Deutsch-Friedrich, Lehmann).

Stapled procedur

Compared with conventional haemorrhoidectomy, the method has the following advantages, according to six systematic reviews (Sutherland et al. (2002), Nisar et al. (2004), Lan et al. (2006), Jayaraman et al. (2006), Tjandra et al. (2007), Shao et al. (2008): shorter duration of surgery, shorter hospitalisation time, shorter convalescence and less time off work due to illness, less postoperative pain and higher patient satisfaction. In terms of complications, there were no significant differences; the later results following conventional haemorrhoidectomy were, however, significantly better with regard to recurrence of prolapse, but were not significantly increased with regard to the reoperation rate.

References

1. Alonso-Coello P, Mills Ed, Hecks-Ansell D et al.: Fiber for the treatment of hemorrhoids complication: A systematic review and metaanalysis. Am. J. Gastroenterol. 101 (2006) 181-186
2. Arnold K: Therapeutische Möglichkeiten bei Hämorrhoidalleiden. Therapiewoche 30 (1980) 3888-3896
3. Baradnay G: Late results of hemorrhoidectomy according to Milligan-Morgan. Am J Proctol 25 (1974) 59-62
4. Barron J: Office ligation of internal hemorrhoids. Am. J. Surg. 105 (1963) 563-570
5. Blanchard CE: Textbook of ambulant Proctology. Med. Success Press, Youngstone, Ohio S. 134 (1928)
6. Blond K, Hoff H: Das Hämorrhoidalleiden. Deuticke Leipzig, Wien 1936
7. Broader JH, Gunn JF, Alexander-Williams J: Evaluation of a bulk-forming evacuant in the management of haemorrhoids. Br. J. Surg. 61 (1974) 142-144
8. Bursics A, Morvay K, Kupcsulik P et al.: Comparison of early and 1-year follow-up results of conventional hemorrhoidectomy and haemorrhoid artery ligation: a randomized study. Int. J. Colorectal. Dis. 19 (2004) 176-180
9. Cataldo P, Ellis N, Gregorcyk S et al.: Practice parameters for the management of hemorrhoids. Dis. Colon Rectum 48 (2005) 189-194
10. Cheng FCY, Shum DWP, Ong GB: The treatment of second degree hemorrhoids by injection, rubber band ligation, maximal anal dilatation and haemorrhoidectomy: a prospective clinical trial. Aust. NZ J. Surg. 51 (1981) 458-462
11. Deutsch-Friedrich A: Das Hämorrhoidalleiden und seine Behandlungsmöglichkeiten unter besonderer Berücksichtigung der submucösen Hämorrhoidektomie nach Parks. Med. Diss. 1991, Essen
12. Fansler WA, Anderson JK: A plastic operation for certain types of hemorrhoids. JAMA 14 (1933) 1064-1066
13. Ferguson IA, Heaton JR: Closed hemorrhoidectomy. Dis. Colon Rectum 2 (1959) 176-179
14. Foster GE, Bolwell JS, Wright J et al.: Controlled trial of bulk forming evacuants in the treatment of patients with hemorrhoids. Gut 20 (1979) A452 (Suppl. 2)

15. Ganchrow MJ, Mazier WT, Friend WG et al.: Hemorrhoidectomy revisted - a computer analysis of 2038 cases. Dis. Colon Rectum 14 (1971) 128-133
16. Gibbons CP, Bannister JI, Trowbridge EA et al.: Role of anal cushions in the maintaining continence. Lancet (1986) 886-887
17. Goligher JC: Surgery of the anus, rectum and colon. 3rd Ed (1975) Ballière Tindall, London
18. Griffith CDM, Morris DL, Ellis J et al.: Out-patient treatment of haemorrhoids with bipolar diathermy coagulation. Br. J. Surg. 74 (1987) 827
19. Guenin MO, Rosenthal R, Kern B et al.: Ferguson hemorrhoidectomy: long term results and patient satisfaction after Ferguson hemorrhoidectomy. Dis. Colon Rectum 48 (2005) 1523-1527
20. Hunt TS, Korman MG: Fybogel in haemorrhoid treatment. Med. J. Austr. 2 (1981) 256-258
21. Jayaraman S, Colquhoun PHD, Malthaner RA: Stapled versus conventional surgery for hemorrhoids. The Cochrane Library 2007, Issue 2
22. Jensen SL, Harling H, Tange G et al.: Maintenance bran therapy for prevention of symptoms after rubber band ligation of third-degree haemorrhoids. Acta Chir. Scand. 154 (1988) 395-398
23. Kanellos I, Goulimaris I, Vakalis I et al.: Long-term evaluation of sclerotherapy for haemorrhoids. A prospective study. Int. J. Surg. Invest. 2 (2000) 295-298
24. Konsten J, Baeten CGM: Hemorrhoidectomy vs. Lord's method. 17-year follow-up of a prospective randomized trial. Dis. Colon Rectum 43 (2000) 503-506
25. Lacher V: Klinische Ergebnisse beim Einsatz der Läppchenplastik nach Fanlser-Arnold in der differenzierten Behandlung des fortgeschrittenen Hämorrhoidalleidens. Med. Diss. 1992, Kiel
26. Lan P, Wu X, Zhou X et al.: The safety and efficacy of stapled hemorrhoidectomy in the treatment of hemorrhoids: a systemic review and meta-analysis of ten randomized control trials. Int. J. Colorectal. Dis 21 (2006) 172-178
27. Leff EJ: Hemorrhoidectomy laser vs. nonlaser: outpatient surgical experience. Dis. Colon Rectum 35 (1992) 743-746
28. Lehmann HG: Ergebnisse der Hämorrhoiden-Operation nach Parks am Krankenhaus Itzehoe. Med. Diss. 1998, Kiel.
29. Lewis MC, De la Cruz T, Gazzaniga DA et al.: Cryosurgical hemorrhoidectomy. Dis. Colon Rectum 12 (1969) 371-378
30. Longo A: Treatment of hemorrhoids disease by reduction of mucosa and hemorroidal prolapse with circular suturing device: a new procedure. In: Proceedings of the 6th World Congress of Endoscopic Surgery, Bologna, Italy, Monduzzi Publishing Co, 777-784, 1998
31. Lord PH: A new regime for the treatment of haemorrhoids. Proc. Roy. Soc. Med. 61 (1968) 935-936
32. Mc-Conell JC, Khubchandani IT: Long-term follow-up of closed hemorrhoidectomy. Dis. Colon Rectum 26 (1983) 797-799
33. Milligan ET, Morgan CN, Jones LA et al.: Surgical anatomy of the anal canal and the operative treatment of haemorrhoids. Lancet 2 (1937) 1119-1124
34. Moesgaard F, Nielsen ML, Hansen JB et al.: High-fiber diet reduces bleeding and pain with haemorrhoids. Dis. Colon Rectum 25 (1982) 454-456
35. Morinaga K, Hasuda K, Ikeda T: A novel therapy for internal hemorrhoids: Ligation of the hemorrhoidal artery with a newly devised instrument in cojunction with a Doppler flowmeter. Am. J. Gastroenterol. 90 (1995) 610-613
36. Neiger A: Die Hämorrhoidenverödung durch Infrarotkoagulation. Phlebol. Proktol. 8 (1979) 230-232
37. Nisar PJ, Acheson AG, Neal KR et al.: Stapled hemorrhoidopexy compared with conventional hemorrhoidectomy: Systematic review of randomized controlled trials. Dis. Colon Rectum 47 (2004) 1837-1845
38. Notaras MJ: The treatment of anal fissure on lateral sphincterotomy - a technique and results. Br. J. Surg. 58 (1971) 96-100
39. Norman DA, Newton R, Glenn V et al.: Direct current electrotherapy of internal hemorrhoids: an effective safe, an painless outpatient approach. Am. J. Gastroent. 84 (1989) 482-487
40. NRF/SR-Standardisierte Rezepturen 1997. Hrsg. Apothekenkammer Sachsen-Anhalt. Govi-Verlag, Pharmazeutischer Verlag 1998
41. Parks AG: The surgical treatment of haemorrhoids. Br. J. Surg. 43 (1956) 337-351
42. Parks AG: The management of fissure in ano. Hosp. Med. 1 (1967) 737-739
43. Perez-Miranda M, Gomez-Cedenilla A, Leon-Colombo T et al.: Effect of fiber supplements on internal bleeding haemorrhoids. Hepatogastroenterology 43 (1996) 1504-1507
44. Shanmugam V, Thaha MA, Rabindranath KS et al.: Rubber band ligation versus excisional haemorrhoidectomy for haemorrhois (Review). The Cochrane Library 2005, Issue 4
45. Shao WJ, Li GCH, Zhang HK et al.: Systematic review and meta-analysis of randomized controlled trials comparing stapled haemorrhoidopexy with conventional haemorrhoidectomy. Br. J. Surg. 95 (2008) 147-160
46. Staude G: Sklerotherapie und Gummiring-Ligatur bei Hämorrhoiden. Münch. Med. W'schr. 134 (1992) 186-190
47. Sutherland LM, Burchard AK, Matsuda K et al.: A systematic review of stapled hemorrhoidectomy. Arch. Surg. 137 (2002) 1395-1406
48. Tjandra JJ, Chan MK: Systematic review on the procedure for prolapse and hemorrhoids (stapled hemorrhoidopexy). Dis. Colon Rectum 50 (2007) 878-892
49. Walker AJ, Leicester RJ, Nicholls RJ et al.: A prospective study of infrared coagulation, injection and

rubber band ligation in the treatment of hemorrhoids. Int. J. Colorectal Dis. 5 (1990) 113-116
50. Webster DJT, Gough DLS, Craven IL: The use of bulk evacuant in patients with haemorrhoids. Br. J. Surg. 65 (1978) 291-292
51. Whitehead W: The surgical treatment of haemorrhoids. Br. Med. J. (Clin Res.) 1 (1882) 148-150
52. WHO Genf: 5th report of the WHO Expert Committee: The use of essential drugs (Model List of essential drugs, 7th List-revisted Nov. 1993)
53. Wolf JS, Munoz JJ, Rozin JD: Survey of hemorrhoidectomy practices: open versus closed techniques. Dis. Colon Rectum 22 (1979) 536-538

Consensus-building procedure

This guideline was drawn up by experts in a consensus conference which took place on 07.07.2007 in Freiburg and on 14.09.2007 in Bochum on the initiative of the German Association of Coloproctology and the Professional Association of Coloproctologists in Germany. It was later passed by both committees.

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