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What's new in the treatment of hemorrhoidal disease?

Co nowego w leczeniu choroby hemoroidalnej?

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Summary

For many years, the number of treatments and operations for hemorrhoids is only slightly changed. The variety of treatment methods, and subsequent modifications emerging treatments and operations are designed to improve patient comfort, reduce the number of complications and costs. Analysis presented in the paper covers the literature published in recent years in Poland and abroad. It reveals trends in current research on new methods and attempts to assess the effectiveness of these operations on the basis of published randomized trials. The paper presents the results of evaluating a new formulation for the treatment of hemorrhoidal disease, and insights on emerging early and late complications of certain surgical procedures. The authors present the results of research on postoperative pain management in patients after surgery hemorrhoidal disease stage IV, and preparations used in the healing of surgical wounds. It also discusses insights into the treatment of patients with co-existing with the hemorrhoids inflammatory diseases of the colon and rectum.

Key words: hemorrhoidal disease, hemorrhoids, hemorrhoids' surgery, hemorrhoids' treatment

Streszczenie

Od wielu lat zakres wykonywanych zabiegów i operacji w chorobie hemoroidalnej ulega jedynie niewielkim zmianom. Różnorodność metod leczniczych, oraz kolejne pojawiające się modyfikacje zabiegów i operacji mają służyć poprawieniu komfortu pacjenta, zmniejszeniu ilości powikłań i kosztów leczenia. Przedstawiona w pracy analiza obejmuje literaturę publikowaną w ostatnich latach w Polsce i zagranicą. Ujawnia trendy w prowadzonych badaniach nad nowymi metodami oraz podejmuje próbę oceny skuteczności poszczególnych operacji w oparciu o publikowane badania randomizowane. W pracy przedstawiono również wyniki prac oceniających stosowanie nowych preparatów w leczeniu zachowawczym choroby hemoroidalnej, oraz spostrzeżenia dotyczące pojawiających się powikłań wczesnych i późnych niektórych metod operacyjnych. Autorzy przedstawili wyniki badań nad zwalczaniem bólu pooperacyjnego u pacjentów po operacji choroby hemoroidalnej w IV stopniu, oraz preparatami stosowanymi w gojeniu ran pooperacyjnych. Omówiono również spostrzeżenia dotyczące leczenia chorych ze współistniejącymi z chorobą hemoroidalną chorobami zapalnymi jelita grubego i odbytnicy.

Słowa kluczowe: choroba hemoroidalna, guzki krwawnicze, operacje hemoroidów, leczenie hemoroidów

INTRODUCTION

Epidemiology of hemorrhoidal disease, particularly in the context of increasingly earlier diagnoses in young people creates the need to search for new methods of treatment or modifications of the proven techniques of surgical and operational treatment. Despite numerous attempts of many years, the number of treatments and operations for hemorrhoids is only slightly changed. Modifications of the various methods are designed to improve the patient's comfort, reduce the number of complications and cost of treatment. Similar goals are set to explore new methods of conservative treatment. Especially a lot of work is devoted to the treatment of postoperative pain.

The methods so far working in patients with the second and third degree hemorrhoidal disease are used in some modifications in the fourth degree of the disease, researchers are trying to prove their superior efficacy using the asset of less tissue trauma. Long-term results of treatment also verify the correctness of the set thesis.

NEW METHODS OF TREATMENT

The established position of conservative treatment of hemorrhoidal disease in the early stages of its progress is evident. Researchers are still looking for new, more effective methods of conservative treatment of symptoms associated with a history of surgery.

According to the Chinese researchers large doses of micronized oral diosmin proved to be one such method of treatment. Treatment with the described preparations reduces pain, bleeding and itching accelerating wound healing, as shown in a randomized study of statistically significant levels during the period from the operation to 8 weeks after treatment (1).

Reduction of pain in the early postoperative period may be obtained by the application of Bupivacaine injections of 300 mg in the form of liposomal particles of long release to the surgical wounds. This relationship has been proven as part of its multi-center randomized study in a large population of people undergoing Milligan-Morgan procedures. The resulting pain relief also allowed to reduce the supply of opioids and NSAIDs for up to 72 hours after surgery (2).

The authors describe good results of analgesia with the oral use of metronidazole or in the form of suppositories (3). In our own surgical practice we often use metronidazole suppositories and topically acting 2% diltiazem ointment decreasing the tension of sphincters. Calcium channel blockers as a factor reducing postoperative pain proposed by other authors as well (4).

A similar effect of analgesia after open surgery was also confirmed in studies with 2% diltiazem (5). There is no evidence, however, that another calcium channel blocker, nifedipine which is given in the form of a 0.3% ointment enhanced the analgesic effect of standard measures after hemorrhoid surgeries (6).

An interesting proposal for the conservative treatment of acute hemorrhoids is the oral administration of calcium channel blockers. These drugs are designed to reduce the tension of the internal sphincter and secondary reduction of pain symptoms (7). It is known that calcium channel blockers have their use in the treatment of anal fissure, where the increase of the tension of internal sphincter is one of the main factors involved in the pathogenesis of this disease. The authors, in patients treated with this method, observed in anoscopy reducing inflammatory states.

In the publications of the last two years there have been reports describing the use of a combination of aluminum, potassium sulfate and tannic acid (ALTA) in the treatment of hemorrhoidal disease. It is given as a submucosal injection. The procedure is performed under local anesthesia and the early effects of treatment are judged to be very good and involving a small number of complications (8, 9).

Another novelty is the combination of DGHAL method (Doppler Guided Hemorrhoidal Artery Ligation) with a laser. In this case, the laser takes the place of a surgical thread closing the vessel located using the Doppler head. In the opinion of the authors, published in Disease Colon and Rectum last year the new method of operation gives less postoperative pain and improves the quality of life in patients with the second and third degree hemorrhoidal disease. The cost of this treatment is still greater than in the case of DGHAL (10, 11).

A notable use of DGHAL method is the treatment of hemorrhoidal disease in patients with Crohn's disease (12). As is known, healing of the anal canal in patients with inflammatory bowel is, particularly during acute inflammatory disease, significantly impaired. The authors of that article describe good results of the use of DGHL in patients with Crohn's disease in the 3rd period of hemorrhoidal disease.

Another new method of operation is marginal fold resection with submucosal electrocoagulation of hemorrhoids (SEC – submucosal electrocoagulation). Electrocautery electrode is inserted under the mucosa through the wound after the cut without cutting the marginal folds of the mucous membrane of the anal canal. According to the authors, this approach reduces pain, accelerates wound healing, prevents bleeding and stenosis after surgery (13).

Satisfactory results obtained in the treatment of the hemorrhoidal disease in stage II and III using the DGHAL method prompted researchers to attempt to search for the application of this method in the higher stages of the disease (III and IV). The innovative solution of DG-RAR method involves enrichment of the method resulting in duplications of mucosa allowance in a line parallel to the long axis of the anal canal. The result is "pulling in" external hemorrhoids. DG-RAR (Doppler-guided Recto-Anal Repair) at the same time reduces pain and perioperative bleeding (14). Other researchers shall describe similar observations and good results (15).

CLINICAL OBSERVATIONS

A large number of papers published on stapler hemoroidectomia shows the popularity of this method. Opinions as to its effectiveness, complications and costs, however, are divided. The works positively assessing long-term positive effect of the treatment often stress the importance of surgical technique and the learning curve in this method. A study based on a group of more than 7300 patients operated at a single center over subsequent seven years showed a small percentage of bleeding (4%), urinary retention (4%), postoperative pain (1.7%) and stenosis (1.2%). Relapse concerned only 14 patients in such a large study group. This demonstrates the clear impact of surgical technique on outcomes (16). In multicenter studies the described recurrence and complications after hemoroidectomia surgery using a circular stapler are much higher and estimated at about 10% (17).

Doppler Proctoscope head, apart from the well-established Morinagi method begins another new application. Basing on the assumption that hemoroidectomia using stapler produces better results in patients

without excessive vascularization of hemorrhoids, researchers established a thesis that the Doppler method can be helpful in selecting the proper method of operation (stapling or classic technique), to achieve the best possible postoperative effect. However, in the literature, studies showing the lack of the above-mentioned relationships can also be found (18, 19).

The common use of stapling hemoroidectomia method (SH), and a relatively long period of observation allow to evaluate not only long-term results, but also reveal rare complications associated with the method. These include the following: proctitis associated with the response to the staple, bleeding to the peritoneal cavity and inflammation of the fecal peritonitis due to perforation (20-22).

An interesting observation of the causes of difficulty in wound healing after proctologic surgery was presented by researchers from England. No healing was observed in patients with ischemic heart disease treated with oral preparations of nitroglycerine (NICARDIL) whose wounds healed after discontinuation of medication. However, this is only preliminary observation not supported by on a larger group of patients (23).

COMPARISON OF OPERATIONAL METHODS PERFORMANCE

Foreign publications were analyzed based on randomized trials comparing the efficacy of surgical procedures. In the list of publications presented below a tendency can be seen to promote less invasive methods, giving less postoperative pain, such as the LIGASURE or DGHAL which, however, are associated with higher costs of the procedure. Large variability in the assessment of the effectiveness of the Barron method may result from the eligibility for treatment of patients with varying degrees of severity of the disease to individual studies, or differences in the performance of procedures in different centers – which could have a substantial impact on the level of pain after surgery and the incidence of complications and recurrence as the main indicators of the effectiveness of the method.

Very good results are described in studies using stapling hemoroidectomia.

In recent years, there have been many studies comparing the techniques of laser and radio waves with classical and instrumental techniques. An interesting publication was presented in 2012 by Filligerii et al. The authors compared hemorrhoids submucosal resection technique and classical Parks surgery, open hemoroidectomia according to Milligan-Morgan and open hemoroidectomia using radio waves, closed hemoroidectomia according to Fergusson and using radio waves and Barron's rubber band ligation and complemented with radio waves. The results proved to be beneficial for radiosurgery, which according to the authors of the publication facilitates, accelerates, and improves surgical treatment (24).

Giamundo et al. (18) comparing the technique of laser surgery and Barron's rubber band ligation show that despite the cost, laser procedure is more effective, less postoperative pain occurs and a better quality of life is observed in patients with the second and third degree hemorrhoidal disease.

Despite this news, it seems that the classic cut of hemorrhoids still has its undeniable place in the treatment of advanced hemorrhoidal disease, as evidenced by work Jayaraman et al. (12, 25) comparing conventional hemoroidectomia with the stapler one, in which the authors have fewer recurrences after classic hemoroidectomia than after any stapling operation.

DISCUSSION

The analysis of 264 records in the databases of Polish and foreign literature shows current trends in the published studies on new methods of treatment of hemorrhoidal disease. The studies generally evaluate the effectiveness of different methods for ambulatory surgery showing a tendency to reduce the more traumatic procedures in favor of less demanding outpatient methods. At the same time work seems to confirm the unwoven position of the traditional surgical methods (Milligan-Morgan method and Ferguson method) in patients with hemorrhoidal disease stage IV.

The discrepancies in the results of research on stapling hemoroidectomia described by various centers indicate a strong influence of the learning curve, and the technique of surgery on the operating results. Much worse results are described in multi-center works compared to the works of a single center with a comparable quantity of randomized groups. One should, however, pay attention to the large number of works devoted to the good results of the use of the method.

Some of the literature is devoted to research on analgesic therapy in patients after surgery. Analyses carried out in the last 40 years of research on pain after hemoroidectomia have been made by researchers from England. Basing on the review of 85 randomized trials conducted in the years 1966 to 2006 showed a better analgesic effect in patients who used postoperative injections of the operated area with an anesthetic drug compared to standard anesthesia (general or regional) in combination with standard drugs in the "analgesic ladder". Reduced pain in patients after staplers resection was also demonstrated, subject to appropriate indications for the stapler surgery (24).

Clinical observations reveal complications after surgery with the use of new techniques. The rare but serious include massive bleeding and perforation of the rectum.

CONCLUSIONS

Basing on the review of available literature in recent years, and their experience in the treatment of hemorrhoidal disease it can be concluded that classic methods of surgery will continue to occupy an important place in the treatment of hemorrhoidal disease grade

4 in the coming years. The development of minimally invasive techniques is due to both the needs of patients in this regard (short absences due to illness, painless, short healing after surgery), as well as new proposals and medical equipment of companies. However, it seems that each new proposal should be approached with caution, keeping in mind that untrained performing the surgery can sometimes result in irreversible complications. As an example, sensory incontinence due to low location of stapler and the resection of transition zone during the procedure by Longo method can be given. It is unacceptable for this type of treatment to be performed by people not involved classic proctologic surgery on everyday basis, because the so-called minimally invasive proctology treatments are only seemingly easy to be performed and a detailed knowledge of the anatomy of the anus is a prerequisite for their implementation. On the other hand, further solutions and proposals for the treatment of this disease, both pharmacological and operational can be expected in the coming years.

BIBLIOGRAPHY

1. Ba-bai-ke-re MM, Huang HG, Re WN et al.: How we can improve patients' comfort after Miligan-Morgan open hemoroidectomy. World J Gastroenterol 2011; 17(11): 1448-1456.
2. Gorfine SR, Onel E, Patou G, Krivokapic ZV: Bupivacaine extended-releaseliposom injection for prolonged postsurgical analgesia in patients undergoing haemorrhoidectomy: A multicenter, randomised, duble-blind, placebo-controled trial. Dis Colon Rectum 2011; 54(12): 1552-1559.
3. Balfour L, Stojkovic SG, Botterill ID et al.: A randomized, double-blind trial of the effect of metronidazole on pain after closed hemorrhoidectomy. Dis Colon Rectum 2002; 45: 1186-1190.
4. Silverman R, Bendick PJ, Wasvary HJ: A randomized, prospective, double-blind, placebo-controlled trial of the effect of a calcium channel blocker ointment on pain after hemorrhoidectomy. Dis Colon Rectum 2005; 48: 1913-1916.
5. Amoll HA, Notash AY, Shahandashti FJ et al.: A randomised, prospective, double blind, placebo-controlled trial of the effect of topical diltiazem on posthaemorrhidectomy pain. Colorectal Disease 2011; 13(3): 328-332.
6. Perrotti P, Dominici P, Grossi E et al.: Topical Nifedypine with lidocaine oitment versus active control for pain after hemorrhoidectomy: result of a multicentre, prospective, randomised, double-blind study. Can J Surg 2010; 53(1): 17-24.
7. Menteş BB, Görgül A, Tatlicioğlu E et al.: Efficacy of calcium dobesilate in treating acute attacks of hemorrhoidal disease. Dis Colon Rectum 2001; 44(10): 1489-1495.
8. Miyamoto H, Asanoma M, Shimada M: ALTA injection sclerosis therapy: non-excisional treatment of internal hemoroids. Hepato-Gastroenterol 2012; 59(113): 77-80.
9. Hachiro Y, Kunimoto M, Abe T, Ebisawa Y: Aluminium potasium and tannic acid (ALTA) injection as the manistay of treatment for internal hemorrhoids. Surgery Today 2011; 41(6): 806-809.
10. Giamundo P, Salfi R, Geraci M et al.: The hemoroid laser procedure technique vs rubber band ligation: a randomised trial comparing 2 mini-invasive treatments for second- and third-degree hemorrhoids. Dis Colon Rectum 2011; 54(6): 693-698.
11. Giamundo M, Cecchetti W, Esercizo L et al.: Doppler-guided hemorrhoidal laser procedure for the treatment of symptomatic hemorrhoids: experimental background and short term clinical results of a new mini-invasive treatment. Surg Endosc 2011; 25(5): 1369-1375.
12. Jayaraman S, Colquhoun PH, Malthaner RA: Stapled hemorrhoidopexy is associated with a higher long-term recurrence rate of internal hemorrhoids compared with conventional excisional hemorrhoid surgery. Dis Colon Rectum 2007 Sep; 50(9): 1297-1305.
13. Yada Y, Sakate Y, Kawamura Y: Submucosal elektrocoagulation for prolapsed hemorrhoids: a new operaitve approch to hemorrhoidal varices. Acta Med Okayama 2010; 64(6): 359-365.
14. Testa A, Torino G, Gioia A: DG-RAR (Doppler-guided recto-anal repair): a new mini invasive technique in the treatment of prolapsed hemorrhoids (grade III-IV): preliminary report. Int Surg 2010; 95(3): 265-269.
15. Forrest NP, Mullerat J, Evans C, Middleton SB: Doppler-guided hemorroidal artery ligation with recto anal repair: a new technique for the treatment of symptomatic haemorrhoids. Int J Colorectal Dis 2010; 25(10): 1251-1256.
16. Karin E, Avital S, Dotan I et al.: Doppler-guided haemorrhoidal artery ligation in patients with Crohn's disease. Colorectal Disease 2012; 14(1): 111-114.
17. Filingeri V, Bellini MI, Gravante G: The role of radiofrequency surgery in the treatment of hemorrhoidal disease. Eur Rev Med Pharmacol Sci 2012; 16(4): 548-553.
18. Giamundo P, Salfi R, Geraci M et al.: The hemorrhoid laser procedure technique vs rubber band ligation: a randomized trial comparing 2 mini-invasive treatments for second- and third-degree hemorrhoids. Dis Colon Rectum 2011; 54(6): 693-698.
19. Schuuman J: Anal dupplex failsto schow changes in vascular anatomy after the haemorroidal artery ligation procedure. Colorectal Disease 2012; 14(6): 330-334.
20. Nicholson TJ, Armstrong D: Topical metronidazole (10 percent) decreases posthemorrhoidectomy pain and improves healing. Dis Colon Rectum 2004; 47: 711-716.
21. Racalbuto A, Aliotta I, Santangelo M et al.: Hemoperitoneum as severe and unusual complication in the stapler recto-anopexy for hemorrhoidal prolapse. Case report. G Chir 2011; 32(5): 272-274.
22. Faucheron JL, Arvin-Berod A, Riboud R, Morra I: Rectal perforation and peritonitis complicating stapled haemorrhoidectompexy. Colorectal Disease 2010; 12(8): 831-832.
23. Riddell AD, Minhas U, Williams GL, Harding KJ: The role of Nicorandil in non-healing surgical wounds. Ann R Coll Surg Eng 2010; 92(6): 16-18.
24. Grag P, Lakhtaria P, Song J, Ismail M: Proctitis due to retained staples after stapler hemoroidopexy and a review of literature. Int J Colorectal Dis 2010; 25(2): 289-290.
25. Joshi GP, Neugebauer EA: Evidence-based managment of pian after haemorroidectomy surgery. Br J Surg 2010; 97(8): 1155-1168.

received/otrzymano: 15.05.2013
accepted/zaakceptowano: 26.06.2013

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