Doppler- guided haemorrhoidal artery ligation operation

Purpose: We present 12-month follow-up results of a functional assessment and safety assessment of a change in hemorrhoidal artery ligation (DGHAL) called Recto-Anal-Repair (RAR) in the treatment of advanced hemorrhoidal disease (HD). Methods: Patients with Class III and IV HD have undergone the RAR procedure (DGHAL in combination with the restoration of prolaptized hemorrhoids to their anatomical position with longitudinal sutures). Each patient had a rectal examination, anorectal manometry and QoL questionnaire performed 3 months ago and 12 months after the RAR procedure. Results: 20 patients completed a 12-month follow-up. There were no major complications. 3 months after RAR, 5 cases of residual mucosal prolaps (25%), while only 3 reported persistence of symptoms. 12 months after RAR, another 3 HD relapses were identified, up to a total of 8 patients (40%) with HD repeat. pressure after RAR was significantly lower than before (P < 0. 5), and the effect was persistent 12 months after RAR. One patient (5%) 3 months after RAR. Conclusions: RAR seems to be a safe method of treating advanced HD without major complications. The procedure has a significant influence on pressure, without evidence of the risk of fecal incontinence after surgery.1. IntroductionChoresoids are a normal part of the human anorectum and consists of arterioles, venuli, and arteriola-ventricular communications supported by fibromuscular tissue [1, 2]. Surgical methods of treating advanced hemorrhoidal disease include classic hemorrhoidectomies (Milligan-Morgan, Ferguson), Longo-stapler hemorrhoidectomy, etc. Each method has its advantages and disadvantages and method-specific complications, including canal strictures, sensitivity impairment and damage to the sphincter, which leads to fecal incontinence [3-5]. In 1995. Morinaga et al. describes a new method of treatment of hemorrhoidal disease, based on ligation of the hemorrhoidal artery, guided by a doppler flow meter. The purpose of the new approach is to preserve hemorrhoid plexuses and concealing mucous membranes [6]. It is now a very popular method of treating Grade II and III hemorrhoidal disease in some countries (Austria, Italy), recommended by some colorectal societies as an optimal method of treatment at these stages of HD, for its simplicity and low risk of complications [7]. The relapse rate for Grade IV hemorrhoidal disease is significantly higher in patients treated with DGHAL than with hemordectomy [8], also standard DGHAL does not address the problem of prolapsed mucosa. First, these problems rarely become a problem due to a very low risk of the procedure, the ability to re-apply the same method in case of lower effectiveness and very good tolerance to this method by patients. Therefore, the modification of DGHAL addressing the issue of prolapses of the mucous membrane is a very attractive option. This may lead to a wider use of hemorrhoids [7]. The latest change in selective hemorrhoidal artery ligation method, recombined repair, combines selective doppler-guided hemorrhoidal arteries ligation with rejoicing of the prolapted rectal mucosa using specially designed proctoscope (A.M.I., Austria)—Figure 1. Instead of excision of hemorrhoids, the purpose of this procedure is to reduce enlarged hemorrhoids by ligation of hemorrhoidal arteries and restoration of the anatomical position of the procapsitis mucosa. In the 3rd division of general surgery, Jagiellon University, this method has been used since 2006 as part of a multicenter clinical study (Austria, Poland, India, Italy). The purpose of this document is to present this new technique and preliminary results of functional evaluation and safety assessment of the RS procedure in the treatment of IIR and IVth class HD, conducted in the 3rd Division of Genetral Surgery, Jagiellonian University.2. Methods The study was positively approved by the Bioethics Committee. 40 patients, 27 men, 13 women with an average age of 53 years (29-74 years), with symptomatic IIIrd and 4th grade HD were qualified for the study. Each patient performed standardized diagnostic procedures: rectal examination, endoscopic and endorectory ultrasound examination, anorectal manometry and quality of life questionnaires (GIQL, FIQL). Qualification criteria: (i)symptomatic hemorrhoidal disease with prolipsing hemorrhoids, which either needs to be reduced manually (IIIrd class) or can not be reduced manually (IVth degree), (ii)absence of fecal incontinence before enrollment (based on fecal incontinent satch. Fecal index of severity of incontinence), (iii) there are no signs of damage to the sphincter in endorectory ultrasound examination, (iv) there are no pathological findings in a diagnostic endoscopic examination of the colon, the written consent of the patient to participate in the study. Besides prolaps or permanently procapsed hemorrhoids (100%), the main complaints when taking are bleeding (92.5%), itching (72.5%) There are no significant pathological findings in functional anorectal assessments of the patient before the procedure, none of the patients reported fecal incontinence. Two patients were disqualified from the procedure shortly before reception due to contraindications to anesthesia. All other 38 patients were admitted to the 3th Ward of General Surgery, Jagiellon University for preoperative evaluation and underwent an RAR procedure the next day. All the patients had surgery in Lloyd-Davis' position. With the help of a specially designed longitudinal opening in the proctoscope, continuous absorbent sutures are laid longitudinally along the canal to lift prolaptized hemorrhoids back into their anatomical position. The first stage of surgery consists of a standard doppler-guided hemorrhoidal artery ligation (DGHAL) using an A.M.I. DGHAL-RAR proctoscope. The proctoscope consists of a modified dghal probe and proctoscope tube, with a longitudinal opening 5 cm. Hemorrhoidal arteries are detected with a Doppler flow meter device built into a simple microscope and ligature with 2/0 absorbent seam (polyglycan), on 5/8 needle using a double seam (figure eight) method as described by Scheyer et al. [8] (Figure 2). After all detectable arteries have ligued (no more arterial doppler signals can be detected), the surgeon proceeded with the second part of the procedure. Procapsed hemorrhoids are identified in microscopic examination. The protoscope is placed in the canal with a longitudinal opening in the closed position, with the probe placed on a selected prolaptized hemorrhoid. By rotating the probe inside the simple tube, the longitudinal opening of the proctoscope gradually opens, from proximal (cranial) to distal (opalode) part. This allows the placement of a continuous seam along the prolapsed mucous membrane (Figure 3). The sutures covering the entire mass of prolaptized hemorrhoids are tied, lifting hemorrhoids back into their anatomical position (Figure 4). This procedure is repeated for any procapsed hemorrhoid, until more prolapsed mucosa is visible outside the canal. After surgery, patients are kept in the ward for 24 hours of observation for a detailed assessment of the postoperative course and then discharged home. We would like to stress that the prolonged stay in hospital is due to our goal of carefully assessing the postoperative course in the first 24 hours. For postoperative pain control NSAIDs (ketoprofen) are administered when a cumulative dose of up to 300 mg per day is needed. Three months and 12 months after surgery, each patient performed a rectal examination, anorectal manometry and quality of life questionnaires performed again. All data, including photographic documentation, were collected on standardised data forms and analysed. The acquired data on anorectal pressure were checked for normality (Shapiro-Wilk test) and analysed for significant differences using non-parametric Wilcoxon pairs test, as the distribution of samples is not normal. Manometric data are also checked with numerous non-parametric kruskal-Wallis ANOVA tests for any influence of anxiety factors (age, gender, etc.). 3. Results Initial 38 patients, 18 were lost for complete follow-up of 12 months (mostly due to refusal of further participation in the study or incomplete manometric data) and excluded from the analysis. The data collected for the remaining 20 patients were analysed (Table 1). In manometric data obtained prior to surgery, there was no significant basal pressure correlation (BAP) or contraction of levels (SAP) with age or sex in the study group. There is no correlation between HD class (III vs IV) and manometric findings (P > 0.0 5). (parks) n Middle age III/IVVMale1254 (29-70)363Female856 (40-68)611SRR procedure took an average of about 35 minutes (25–75) from the start of anesthesitic procedures to patient from the operating table. The average number of arteries ligated during the procedure is 5.65 (4-8), most common at 1 and 11 hours (in loyd-Davis position corresponding to 5 and 7 hours in the supine position). There were an average of 2.5 (1-4) longitudinal sutures used to withdraw the prolapsed mucosa into the canal. There are three cases (15%) intraoperative bleeding requiring additional hemostatic sutures. Early postoperative bleeding (approximately 60 ml of blood) was reported in one patient (5%), on the first day after surgery. Bleeding is successfully managed with sterile tamponade (type Lockhart-Mummary). There are no other complications in the perioperative period that require surgery. Postoperative pain is easily managed with NSAIDs administered IV or Hospital stay is standardized and lasted a total of 48 hours due to our goal of careful evaluation of the postoperative course. residual hemorrhoidal prolaps among 20 patients enrolled in the final analysis, while only 3 of them (15%) reported residual symptoms (painful defecation and itching). These 3 patients are among the top 10 who have undergone rectoanal repair in our department. There are no cases of persistent hemorrhage in the first 3 months after the RAR procedure. When assessing anorectal manometry, pressure levels recorded 3 months after RAR were significantly lower than before the procedure (Table 2). On average, BAP fell 11.53%, SAP 12.2% for women, BAP dropped 5.82% and SAP 6.03% for men (P < 0 . 0 5). These results are not correlated in any way with the age, nor the sex of the patient, nor the degree of hemorrhoidal disease (P > 0 . 0 . 5). Average BAPMean SAPphysiological RAIR (before /after)RSCC insisted (before /after)After qualification 3 months after RAR12 months after RARUpon qualification 3 months after RAR12 months after RARMale78.8372.1767.92214.50199.75198.1 751 2/1212/12Female64.5056.5058.75129.38111.25119.3888/88/8 Based on quality of life questionnaires (GIQL, FIQL) most of the reporting on better overall health and self-esteem, despite a non-full reduction in the prolaps of the mucous membrane in some cases. The mean Giqli preoperatively was 110 patients, while the postoperative average GIQL index reached 135 patients, a 19 significant improvement in GIQLI. However, one in 20 patients (5%), a 73-year-old male, reported occasional problems with continity in the subsequent examination 3 months after the procedure (incontinence of gases, accidental contaminated), starting about one month after surgery. recurrence of prolaps, giving a total of 8 known patients with hemorrhoidal prolaps 12 months after the procedure. No cases of persistent haemorrhage were observed, and the level of satisfaction as measured by quality of life questionnaires was still high in most patients (95%). , incontinence was reported after the procedure, with a slight improvement in 12 months of monitoring, with resistance to gas incontinence. DiscussionStites are in constant search for new methods of treatment of hemorrhoidal disease, which will offer not only high efficiency and low morbidity, but also a short recovery and good postoperative comfort. Ligation of the rubber band used in hemorrhoids of phase II and III can be complicated by bleeding after propecedura in up to 5% of cases [9]. The efficacy of this method is 76% in stage II, 66% in stage III, and less then 20% in IV degree hemorrhoids. Rubber ligatures are placed under limited visual control, near the line of dental; hemorrhoidal arteries are left open, leading to a high probability of recurrence [10]. Baron's method also requires several applications of rubber bands, since most proctologists refrain from ligation of all hemorrhoid pilots during one procedure. Moderately invasive methods such as Londo surgery are burdened with a relatively high risk of complications, including severe complications such as perforation, rectum occlusion, retroperitoneal hematoma and Furnier gangrene [11–16]. During the procedure DGHAL-RAR, all threads are placed under direct visual control, so that the risk of displaced threads is significantly reduced. In addition, during staples-based procedures, a continuous ring of the mucous membrane is cut out, while in DGHAL-RAR, longitudinal stripes of the untouched mucosa between RAR seams reduce the risk of damage to the anorectal function and sensation. Conventional surgical hemorrhoidectomy according to Milligan Morgan, Ferguson, and their modifications represent the most effective method of treating HD that is currently available. However, the effectiveness of these methods is limited by various complications such as the sphincter (in up to 25% of patients), a violation of rectoanal coordination due to partial resection of the mucosa (another 10% of patients), postoperative bleeding or infection up to 5-15% of patients [15]. Also postoperative recovery usually lasts from several days to 2 weeks. Therefore, taking into account all these facts, new treatment methods such as DGHAL and RAR, in addition to increasing efficiency, concentrate on preserving the natural anatomical and histological structure of the anorectal region, as well as the possibility of preventing damage to anorectal function. are also aimed at reducing the [17, 18]. It is said that the hemorrhoidal plexus is responsible for 15-20% of pressure. According to some studies [19–21] these pressures were significantly higher in HD patients compared to healthy individuals, and decreased after surgical treatment of HD regardless of the chosen method (Barron, Milligan-Morgan, Longo) was also reported [19, 20, 22]. Some authors even raise a question if increased resting anus pressure is secondary to swelling of hemorrhoidal cusions, or if it is an etiological factor of hemorrhoidal diseases [19]. On the other hand, many other authors argue that there is no significant change in manometric findings in patients treated for hemorrhoidal disease [23-25] leaving the question of initially raised pressure unanswered. The DGHAL method reports also did not report significant changes in basal pressure and contraction [25]. Our study showed a significant drop in resting anus pressure after RAR, with the coexistence of a minor RAR procedure on squeezing pressure, although we have no evidence if the pressure initially increased compared to healthy individuals. One drawback of our study was a relatively small group of patients - this was due to rigorous qualifications - patients operated on this method who did not meet the qualification criteria were not included in the study to keep the learning group united on initial functional conditions. The other factor limiting the amount of patients in the analysed group was the fact that some patients refused to participate further in the study or their manometric follow-up was not completed due to missed follow-up visits. Taking this into account, a complex study involving an age-and-gender-combined control group of healthy individuals is still needed to compare or perhaps scale the future process to answer this question. The clinical results of the repair procedure are very promising, since most patients are satisfied with the result, although the observation period of 12 months is too short to conclude the long-term effectiveness of the procedure. Moreover, many of the patients treated with this method in our department have not completed the full follow-up plan, so the clinical results in these patients are not known. It can only be assumed that most of them did not have any symptoms after treatment and therefore did not find a visit to the doctor necessary. In short-term studies related to staples-based techniques, the relapse rate was lower than in our analyzed patient group [26–29]. However, DGHAL/RAR may offer a better safety profile and a lower risk of anorectal disorders. Moreover, recovery after RAR procedure is much faster compared to the classic Milligan-Morgan or Ferguson hemorrhoidectomy [4]. ConclusionRecovery repair seems to be a safe method of treating and IVth grade hemorrhoidal disease without major complications and a high degree of good short-term results. 1. 1. has a significant effect on rest and plucking of the anus, without evidence of risk of fecal incontinence after surgery. It remains to be answered if this is the result of a return to normal anus or should be considered an adverse effect. However, this is a preliminary study with a small series of patients and a short follow-up time, so it is difficult to assess long-term efficacy, relapse rate and long-term impact on anorectal function, which still need to be evaluated in larger studies with a longer follow-up period and larger patient groups. Conflict of interestD. P. Wallega, M. Romanceian, J. Kennig, R. Herman, W. Novoka have no conflict of interest or financial ties to disclose.