



Treatment of Hemorrhoid in Unusual Condition- Pregnancy

Hyo Seon Ryu 

Division of Colon and Rectal Surgery, Department of Surgery, Korea University College of Medicine, Seoul, Korea

Received Sep 30, 2022
Accepted Oct 4, 2022

Corresponding author

Hyo Seon Ryu
Division of Colon and Rectal Surgery,
Department of Surgery, Korea University
College of Medicine, 73, Goryeodae-ro,
Sungbuk-gu, Seoul 02841, Korea
Tel: 82-2-920-5978
Fax: 82-2-928-1631
E-mail: hseyu@kumc.or.kr

Key Words

Hemorrhoids; Hemorrhoid therapy;
Hemorrhoid in pregnancy; Hemorrhoid
complication

Hemorrhoids are varicose veins of the rectum that are located in or near the anal canal and are covered by mucosa. They can occur at any age, are generally symptomless, and affect both sexes equally. Hemorrhoids are a common complaint among younger women and are more likely to occur during pregnancy and the menstrual cycle. In this article, we discuss the many approaches in the treatment of hemorrhoids. Laxatives, stool softeners, and fiber supplements are all considered safe for use by pregnant women. Moderate use of laxatives is also acceptable. Since there is a lack of sufficient evidence to support the safety and efficiency of topical medicines or oral phlebotomies during pregnancy, these treatments must be utilized with an increased degree of extreme caution. In the case that considerable bleeding occurs, anal packing may be a straight forward and helpful operation to implement. A hemorrhoidectomy is the treatment option for hemorrhoids that have become strangulated, badly thrombosed, or have bleeding that cannot be controlled.

Introduction

One of the most common disorders that can affect the anorectum is hemorrhoidal disease. Anal bleeding, the sense of a prolapsing lesion, anal pain, anal irritation, and anal soiling are not symptoms that are unique to hemorrhoidal disease; however, these symptoms can occasionally be helpful in distinguishing hemorrhoidal disease from other disorders [1,2]. In actual clinical practice, classification of hemorrhoids was done based on the extent of internal hemorrhoidal tissue prolapse, and treatment was outlined in accordance with classical classification [3]. According to some findings, classification systems that take into account many symptoms at once are more practical [4,5]. The treatment for hemorrhoid was determined according to the severity of the symptoms, which might range from conservative management to intervention or surgical treatment [6–9]. Nevertheless, the therapy of hemorrhoidal disease in unusual conditions is considerably more challenging.

Incidence or Pathogenesis of Hemorrhoidal Disease in Pregnancy

Hemorrhoidal disease is often symptomatic and bothersome for pregnant women. It affects 25–35 percent of pregnant women [10], primarily presents in the third trimester, and can be

internal or external. There is a rise in blood volume (between 40% and 50% of the volume before pregnancy). During pregnancy, there is an increase in cardiac output and utero-placental blood flow, as well as an increase in the inflow and intravenous pressure in the pelvic veins [11,12]. These mechanisms result in increased blood flow in collateral circulation veins (vulvar, rectal, and lumbar), which increases the likelihood of developing hemorrhoids. The pelvic veins are compressed during pregnancy due to the enlarged uterus [13]. In the first trimester of pregnancy, an increase in venous pressure mixed with hormonal changes causes venous relaxation. Several mediators were associated with these alterations. Estrogens are responsible for mesenchymal release, but progesterone has a myolytic action across the body. These effects on the vein system result in a tissue vascular dislocation (estrogen) and a decrease in venous tone (progesterone) [13,14].

As a result of altered venous drainage through the hemorrhoid plexus, some circumstances (such as constipation and prolonged exertion) may contribute to the development of hemorrhoids by increasing intra-abdominal pressure [15]. Some dietary and lifestyle factors, including as a diet low in fiber, spicy foods, and alcohol consumption, may contribute to the development of hemorrhoids and the exacerbation of symptoms [16].

The most common manifestation of hemorrhoidal pathology is painless rectal bleeding during feces, with or without anal tissue protrusion. Anal pain may be experienced by patients with complex hemorrhoids, such as external hemorrhoids with thrombosis or internal imprisoned hemorrhoids. On clinical examination, a nodule at the level of the anal margin may be identified. It is uncommon for patients with simple hemorrhoids to experience anal pain. Anal pain with hemorrhoids is more likely to be caused by an anal fissure or an anal abscess [17].

Conservative Treatment

The purpose of hemorrhoid treatment in pregnant women is to control the symptoms, which typically disappear on their own during the postpartum period, and to protect the perineal region, which is susceptible to stress during vaginal delivery. Except in cases of acute thrombosis, a conservative approach is always suggested. If possible, surgical procedures should be delayed until a few weeks after delivery. It would be advantageous to avoid potential complications associated with hemorrhoidectomy [18,19].

The consumption of fiber and fluids positively affects constipation, which is one of the elements that contribute to the development of uterine fibroids during pregnancy. Constipation is a risk factor for long-term pelvic organ prolapse when combined with changes in anal sphincter pressure [20,21]. It is important to consume fresh fruits and vegetables on a regular basis [22]. In a study of 40 pregnant women in their third trimester, those who consumed 10 grams of fiber in the form of biscuits or wheat bran had significantly greater digestive motility than the control group [23].

Moderate physical activity increases intestinal motility and promotes anorectal coordination, and should be included among the prenatal hygiene interventions. The usage of Psyllium in the treatment of constipation has been linked to enhanced intestinal transit and intestinal motility, as well as the generation of soft, highly-lubricated stool [24].

Osmotic laxatives contain ions or molecules that are not reabsorbable and that hold water in the intestinal lumen. Polyethylene glycol and lactulose are the most widely utilized. According to the meta-analysis, polyethylene glycol is more efficient than lactulose in terms of stool frequency and consistency, with fewer adverse effects; osmotic laxatives should be considered

the first choice [25]. In addition, the favorable safety and tolerability profile enables their use in unique circumstances, such as pregnancy. The safety of stimulant laxatives during pregnancy is not currently recommended because there are insufficient evidences of their safety profiles. Sitz-baths diminish the tone of the internal sphincter, alleviate venous congestion, edema, and inflammation, and provide excellent symptomatic control for inflamed hemorrhoids [26]. A study of two groups of patients with acute anal pain due to hemorrhagic disease or anal fissure (24 patients in total, 12 for each group) who had used cold water [group 1, 10.8°C (range 5–13)] and hot water [group 2, 38.5°C (range 20–40)] did not reveal any differences in the clinical course of the disease, despite a reduction in painful symptoms with the use of hot water [27]. Because ice has a local anesthetic effect, applying it directly to an injury can make it feel less painful [28]. The analgesic effect of cold was achieved by decreasing cellular metabolism and sensory nerve transmission, which led to sphincter relaxation. Additionally, local vasoconstriction helped diminish edema and swelling of the tissue, which contributed to the analgesic effect of cold.

Medical Treatment

The goal of the medical treatment for hemorrhoids that occur during pregnancy is to alleviate the symptoms, however the therapeutic options are restricted. Anti-inflammatory medications are frequently taken in order to acquire a rapid regression of the symptoms; nevertheless, the usage of these medications is associated with the risk of developing problems. Corticosteroids and non-steroidal anti-inflammatory medications are the most often used anti-inflammatory drugs, however they cannot be used during or after nursing. There are insufficient scientific studies to demonstrate the safety and efficacy of steroidal anti-inflammatory medicines, whether they are administered orally, topically, or with suppositories [10]. Long-term topical steroid usage is connected with the development of allergic reactions and sensitization. Multiple investigations have indicated that the teratogenic effect of oral corticosteroids is dose-dependent, and four case-control studies have demonstrated an association between corticosteroids use and the development of cleft palate [29].

Inhaled corticosteroids were observed to be connected with a modest increase in the risk of spontaneous abortion during pregnancy. On the other hand, oral corticosteroids were not related to an increase in the risk of congenital abnormalities [30]. Because breastfeeding makes it unsafe to use nonsteroidal anti-inflammatory drugs, it was recommended that pregnant women with thrombotic hemorrhoids and significant edema before and after delivery use corticosteroids at a dose of 40 mg per day for three to five days. Although betamethasone is the most often used corticosteroid in clinical practice, dexamethasone exhibited similar efficacy [31]. However, the prenatal exposure to dexamethasone was observed to increase the chance of neurological changes when compared to betamethasone and placebo [32].

Paracetamol, also known as acetaminophen and N-acetyl-p-aminophenol, can be recommended to alleviate uncomfortable sensations at the typical dose; nevertheless, recent research has indicated its relation with fetal development problems [33]. It is not recommended to use codeine while breastfeeding and is only safe to take during the first and second trimesters of pregnancy for a limited amount of time. Treatment with tramadol is only permitted in the second trimester of pregnancy [34]. The application of topical anesthetics such as benzocaine, dibucaine, and pramoxine after each defecation can alleviate anal itching and discomfort, with possible sensitization following prolonged use [22].

For the treatment of hemorrhagic diseases, phlebotonic drugs are commonly prescribed.

Phlebotonics function as antioxidants, exert a protective effect against pro-inflammatory mediators, and enhance venous tone and lymph drainage. Flavonoid has been shown to be effective in the treatment of hemorrhoids illness in pregnant women, and it has been shown to decrease symptoms such as bleeding, itching, and recurrence of hemorrhoid [35]. Micronized pure flavonoid fraction has demonstrated efficacy in lowering pain and bleeding in patients with acute hemorrhoidal episodes, in addition to tolerability [36]. Rutosides belong to the family of flavonoids, which are plant-derived natural compounds. These are recommended drugs for treating chronic venous insufficiency. Although their mechanism of action is not well understood, the phlebotonic effect (the action of boosting venous tone) may be associated with an increase in lymphatic drainage (drawing of lymphatic fluids), an improvement in venous tone, and a decrease in capillary hyper permeability (the passage of substances through the membrane of the smallest vessels). In patients with pregnancy-related grade I-III hemorrhoids, rutoside, a flavonoid glycoside, shown considerable improvement in pain alleviating, in comparison to placebo [37]. The symptoms of nausea, dizziness, gastrointestinal pain, vomiting, dry mouth, constipation, headache, and fatigue were the ones that were reported as occurring the most frequently in patients who experienced adverse reactions. Compared to placebo, there were no significant differences in adverse reactions, fetal death, early delivery, or congenital abnormalities. Nonetheless, several researches discovered a link between Rutoside and congenital abnormality and advised against its use during the first trimester of pregnancy [38,39]. There were no adverse effects recorded in terms of issues with prenatal development, birth weight, or postnatal nutrition in connection with the usage of 500 mg of Daflon [22]. It was recommended that micronized diamines (Daflon) be administered at a dose of 1–2 g/day for short periods only, and not for prolonged use [34]. Lacroix et al. [40] reported the first epidemiological data about suspected veinotonic side effects in pregnant women. They discovered no higher risk of unfavorable pregnancy outcomes in women exposed to veinotonics compared to those who were not exposed. According to a double-blind, randomized, controlled trial, weakened calcium, a phlebotonic medication with anti-haemodynamic action, is helpful in treating the acute phase of hemorrhoids, with a marked reduction in inflammation [41]. Dobesilate calcium (calcium 2,5-dihydroxybenzenesulfonate) inhibits, dose-dependently, the production of PGF1a, PGF2a, PGE2, and TXB2 [42]. Calcium Dobesilate impacts blood pressure and, as a result, reduces the need for medication and hospitalization in cases of mild to moderate midtrimester hypertension, according to a pilot research [43]. There have not been enough research done to determine the safety profile or the teratogenicity of the weakened calcium when it is consumed during pregnancy.

Interventional and Surgical Treatment

The treatment of hemorrhoids during pregnancy should be conservative, consisting of improving eating habits and using suppositories or ointments as necessary. Sclerotherapy, which involves injecting sclerosing chemicals at the level of the hemorrhagic plexus, is a controversial operation that can be performed during pregnancy. In the majority of instances, hemorrhoids disappear on their own within two months of delivery, along with the regression of risk factors that contributed to their development [44,45]. In the event of severe bleeding and pain that does not respond to any of the available analgesics, invasive procedures can be considered medically necessary during pregnancy. Thrombosis of the caudal hemorrhoid cushion is what causes hemorrhoids to protrude along the anal border and the anal canal. This condition is known as hemorrhoids thrombosis. Pain that comes on suddenly and swelling at the level of the

anal edge are both symptoms of hemorrhoid thrombosis. The diagnosis can be easily confirmed by an examination of the perianal region. Surgery is typically not indicated for patients who have inadequate symptoms in their condition. The aim of the treatment is to lessen the patient's level of discomfort by way of a systemic anti-inflammatory approach utilizing non-steroidal anti-inflammatory medicines. Ibuprofen and Diclofenac can be taken throughout pregnancy up until the 30th week of the pregnancy. It was previously thought that paracetamol could be taken throughout the entirety of a woman's pregnancy; however, growing evidence from both experimental and epidemiological research suggests that prenatal exposure to paracetamol may alter fetal development, which may in turn increase the risk of certain neurodevelopmental, reproductive, and urogenital disorders. Caution is therefore required when using this medication during pregnancy [33]. Anesthetic ointments, such as Procain, Bupivacain, Lidovain, and Mepivacain, as well as local cooling, may be used in conjunction with the systemic treatment. With this conservative treatment, the pain should go away in a few days, and although the nodule will remain, it should go away on its own in two to four weeks [46]. Necrosis of the vascular wall and skin can, in extremely rare instances, be linked with spontaneous resolution of the thrombus, which in turn leads to relief of the symptoms. In urgent circumstances, due to the severe pain and the presence of a large thrombus, local anesthesia is used for surgical treatment, which involves the complete excision of the whole thrombosed hemorrhoid. Some have reported that metronidazole would be effective in the management of post-hemorrhoidectomy pain. a thrombus is a collection of blood cells that can block blood flow through a blood vessel [47]. Because there is a risk of the thrombus forming again, surgical procedures such as incision and drainage are not advised [48,49].

Conclusion

The most common kind of anorectal disease that occurs during pregnancy is hemorrhoids, particularly in the third trimester [50]. At the beginning of treatment for hemorrhoids that occur during pregnancy, a conservative approach is utilized. The most significant risk factor, which is also present in the general population, is refractory constipation, which is often accompanied by the possibility of traumatic vaginal birth. In order to limit the incidence of symptomatic hemorrhoids, it is crucial to avoid constipation during pregnancy, particularly after childbirth. Short-term relief of symptoms may be achieved through the use of local interventions such as sitz baths, ice, or ointments containing anesthetics, phlebotonics, or glucocorticoids, either alone or in combination. Surgery for an incurable sickness ought to be put off until the fetus is no longer in danger, or even better, until after the baby has been born. Excision is necessary as soon as possible for external hemorrhoids that have developed acute strangulation thrombosis.

Acknowledgements

Not applicable.

Conflict of Interest

No potential conflict of interest relevant to this article was reported.

ORCID iD

Hyo Seon Ryu : <https://orcid.org/0000-0003-2606-9973>

Author Contribution

The article is prepared by a single author.

Ethics Approval and Consent to Participate

Not applicable.

References

1. Ng KS, Holzgang M, Young C. Still a case of “no pain, no gain”? An updated and critical review of the pathogenesis, diagnosis, and management options for hemorrhoids in 2020. *Ann Coloproctol* 2020;36(3):133-147.
2. Pham BV, Kang JH, Phan HH, Cho MS, Kim NK. Malignant melanoma of anorectum: two case reports. *Ann Coloproctol* 2021;37(1):65-70.
3. Goligher JC. Haemorrhoids or piles. In: Goligher JC, Duthie HL, Nixon HH, editors. *Surgery of the anus, rectum and colon*. 4th ed. London: Baillière Tindall; 1980. p.96.
4. Sobrado Júnior CW, de Almeida Obregon C, da Silva e Sousa Júnior AH, Sobrado LF, Nahas SC, Cecconello I. A new classification for hemorrhoidal disease: the creation of the “BPRST” staging and its application in clinical practice. *Ann Coloproctol* 2020;36(4):249-255.
5. Fathallah N, Beaussier H, Chatellier G, Meyer J, Sapoval M, Moussa N, et al. Proposal for a new score: hemorrhoidal bleeding score. *Ann Coloproctol* 2021;37(5):311-317.
6. Jeong H. The effort to reduce vasovagal reaction and abdominal pain during stapled hemorrhoidopexy. *Ann Coloproctol* 2020;36(5):291-292.
7. Yano T. Is there a relationship between stool consistency and pain at first defecation after limited half hemorrhoidectomy? A pilot study. *Ann Coloproctol* 2021;37(5):306-310.
8. Bhatti MI, Sajid MS, Baig MK. Milligan–Morgan (open) versus Ferguson haemorrhoidectomy (closed): a systematic review and meta-analysis of published randomized, controlled trials. *World J Surg* 2016;40(6):1509-1519.
9. Brown SR. Haemorrhoids: an update on management. *Ther Adv Chronic Dis* 2017;8(10):141-147.
10. Altomare DF, Giannini I. Pharmacological treatment of hemorrhoids: a narrative review. *Expert Opin Pharmacother* 2013;14(17):2343-2349.
11. Hills DL, Firth BG, Wilford, Willerson IT. Pregnancy and cardiovascular abnormalities of clinical problems in cardiology. ABE, Milan; 1990. p.917-927.
12. Struckmann JR, Meiland H, Bagi P, Juul-Jørgensen B. Venous muscle pump function during pregnancy. Assessment by ambulatory strain-gauge plethysmography. *Acta Obstet Gynecol Scand* 1990;69(3):209-215.
13. Williams JW, Cunningham FG, Mc Donald PC, Gant NF. *Williams obstetrics*. 18th ed. Appleton & Lange: Norwalk; 1989. p.129-168.
14. Cruikshank DP. Cardiovascular, pulmonary, renal and hematologic disease in pregnancy. In: Scott JR, Disain PJ, Hammond CB, Spellacy WN, editors. *Danforth's obstetrics and gynecology*. 6th ed. Philadelphia: Lippincott; 1990. p.433-459.
15. Loder PB, Kamm MA, Nicholls RJ, Phillips RKS. Haemorrhoids: pathology, pathophysiology and aetiology. *Br J Surg* 1994;81:946-954.
16. Pigot F, Siproudhis L, Allaert FA. Risk factors associated with hemorrhoidal symptoms in specialized consultation. *Gastroentérol Clin Biol* 2005;29(12):1270-1274.
17. Lohsiriwat V. Hemorrhoids: from basic pathophysiology to clinical management. *World J Gastroenterol* 2012;18(17):2009-2017.
18. Assaraf J, Lambrescak E, Lefèvre JH, de Parades V, Bourguignon J, Etienney I, et al. Increased long-term risk of anal fistula after proctologic surgery: a case-control study. *Ann Coloproctol* 2021;37(2):90-93.
19. Cho KJ, Hwang DY, Lee HJ, Hyun KH, Kim TJ, Park DH. Prospective comparative analysis of the incidence of vasovagal reaction and the effect of rectal submucosal lidocaine injection in stapled hemorrhoidopexy: a randomized controlled trial. *Ann Coloproctol* 2020;36(5):344-348.
20. Tsunoda A, Takahashi T, Sato K, Kusanagi H. Factors predicting the presence of concomitant enterocele and rectocele in female patients with external rectal prolapse. *Ann Coloproctol* 2021;37(4):218-224.
21. Büyükaşık S, Abdussamet Bozkurt M, Kapan S, Alis H. Analyzing the role of anal sphincter pressure in rectocele formation. *Ann Coloproctol* 2020;36(5):330-334.
22. Avsar AF, Keskin HL. Haemorrhoids during pregnancy. *J Obstet Gynaecol* 2010;30(3):231-237.
23. Jewell DJ. Interventions for treating constipation in pregnancy. *Cochrane Database Syst Rev* 2015;(9):CD011448.
24. Singh B. Psyllium as therapeutic and drug delivery agent. *Int J Pharm* 2007;334(1-2):1-14.
25. Lee-Robichaud H, Thomas K, Morgan J, Nelson RL. Lactulose versus polyethylene glycol for chronic constipation. *Cochrane Database Syst Rev* 2010;(7):CD007570.
26. Shafik A. Role of warm-water bath in anorectal conditions. *J Clin Gastroenterol* 1993;16(4):304-308.
27. Maestre Y, Parés D, Salvans S, Ibáñez-Zafón I, Nve E, Pons MJ, et al. Cold or hot sitz baths in the emergency treatment of acute anal pain due to anorectal disease? Results of a randomised clinical trial. *Cir Esp* 2010;88(2):97-102.
28. Ashaal YE, Chandran VP, Siddiqui MN, Sim AJ. Local anal hypothermia with a frozen finger: a treatment for acute painful prolapsed piles. *Br J Surg* 1998;85(4):520.
29. Lim SS, Yu CW, Aw LD. Comparing topical hydrocortisone cream with Hai's perianal support in managing symptomatic hemorrhoids in pregnancy: a preliminary trial. *J Obstet Gynaecol Res* 2015;41(2):238-247.
30. Bjørn AMB, Ehrenstein V, Nohr EA, Nørgaard M. Use of inhaled and oral corticosteroids in pregnancy and the risk of malformations or miscarriage. *Basic Clin Pharmacol Toxicol* 2015;116(4):308-314.
31. Elimian A, Garry D, Figueroa R, Spitzer A, Wienczek V, Quirk JG. Antenatal betamethasone compared with dexamethasone (betacode trial): a randomized controlled trial. *Obstet Gynecol* 2007;110(1):26-30.
32. Lee BH, Stoll BJ, McDonald SA, Higgins RD. Neurodevelopmental outcomes of extremely low birth weight infants exposed

- prenatally to dexamethasone versus betamethasone. *Pediatrics* 2008;121(2):289-296.
33. Bauer AZ, Swan SH, Kriebel D, Liew Z, Taylor HS, Bornehag CG, et al. Paracetamol use during pregnancy: a call for precautionary action. *Nat Rev Endocrinol* 2021;17(12):757-766.
 34. Abramowitz L, Benabderrhamane D, Philip J, Pospait D, Bonin N, Merrouche M. Pathologie hémorroïdaire de la parturiente. *Presse Med* 2011;40(10):955-959.
 35. Alonso-Coello P, Zhou Q, Martinez-Zapata MJ, Mills E, Heels-Ansdell D, Johanson JF, et al. Meta-analysis of flavonoids for the treatment of haemorrhoids. *Br J Surg* 2006;93(8):909-920.
 36. Jiang ZM, Cao JD. The impact of micronized purified flavonoid fraction on the treatment of acute haemorrhoidal episodes. *Curr Med Res Opin* 2006;22(6):1141-1147.
 37. Alonso P, Johanson J, Lopez-Yarto M, Martinez MJ. Phlebotonics for haemorrhoids. *Cochrane Database Syst Rev* 2003;(1):004322.
 38. Vazquez JC. Constipation, haemorrhoids, and heartburn in pregnancy. *BMJ Clin Evid* 2010;2010:1411.
 39. Kubicsek T, Kazy Z, Czeizel AE. Teratogenic potential of tribenoside, a drug for the treatment of haemorrhoids and varicose veins: a population-based case-control study. *Reprod Toxicol* 2011;31(4):464-469.
 40. Lacroix I, Beau AB, Hurault-Delarue C, Bouilhac C, Petiot D, Vayssière C, et al. First epidemiological data for venotonics in pregnancy from the EFEMERIS database. *Phlebology* 2016;31(5):344-348.
 41. Menteş BB, Görgül A, Tatlıcioğlu E, Ayoğlu F, Ünal S. Efficacy of calcium dobesilate in treating acute attacks of hemorrhoidal disease. *Dis Colon Rectum* 2001;44(10):1489-1495.
 42. Falkay G, Kovács L. Calcium dobesilate (doxium) as a prostaglandin synthetase inhibitor in pregnant human myometrium in vitro. *Experientia* 1984;40(2):190-191.
 43. Tamás P, Csermely T, Ertl T, Vizer M, Szabó I, Prievara FT. Calcium dobesilate lowers the blood pressure in mild to moderate midtrimester hypertension: a pilot study. *Gynecol Obstet Invest* 1999;47(3):210-213.
 44. Kersting S, Loch H. Coloproctological problems in pregnancy and postpartum. *Chir Mag* 2007;29:22-25.
 45. Brühl W, Wienert V, Herold A. Hämorrhoiden. Current proctology. *Bremen: Uni-med Verlag*; 2005. p.56-71.
 46. Bussen S, Herold A, Schmittner M, Krammer H, Bussen D. Coloproctological diseases in pregnancy and the postpartum period. *Geburtsh Frauenheilkd* 2008(11);68:1-5.
 47. Di Re A, Toh JWT, Iredell J, Ctercteko G. Metronidazole in the management of post-open haemorrhoidectomy pain: systematic review. *Ann Coloproctol* 2020;36(1):5-11.
 48. Herold A. Analvenenthrombose. In: Brühl W, Wienert V, Herold A, editors. Current proctology. *Bremen: Uni-med Verlag*; 2005. p.72-76.
 49. Forner DM, Vestweber KH, Lampe B. Proctological diseases in gynecological practice. *Frauenarzt* 2006;47:102-106.
 50. Gojnic M, Dugalic V, Papic M, Vidaković S, Miličević S, Pervulov M. The significance of detailed examination of hemorrhoids during pregnancy. *Clin Exp Obstet Gynecol* 2005;32(3):183-184.