Background: Management of grades 1 and 2 of internal hemorrhoids is non-operative by advising the patients to have a high-fiber diet and take phlebotropic agents such as MPFF (Micronised Purified Flavonoid Fraction). Rubber band ligation is the alternative in case of failure office-like procedure sclerotherapy. Management of grades 3 and 4 internal hemorrhoids is operative management. The gold standard of hemorrhoid surgery is the Morgan Milligan method, an excisional surgery, since this method results in a low recurrence rate.

Case presentation: We presented a twenty-six-year-old male patient who came to St Elizabeth Hospital, Semarang, with a chief complaint painful lump in the anal canal for the past 7 days. For about 3 years, he got chronic spontaneously reducible anal pile and bled, and since 2 months, the pile has enlarged and only can be reduced manually. Since 7 days ago, nonreducible anal lump (prolapse). He was several times treated medically by General Practitioner. The patient was in good condition on physical examination but looked painful with VAS: 7. The anal region looked like a big prolapsing anal canal skin and mucosa with a dentate line in between. The lump looked hyperemic, with edema and some thrombus.

Conclusion: Management of big grade IV internal hemorrhoids is challenging. Combination Morgan Milligan for a big pile and HAL-RAR for the rest of the pile gives a good result. The administration of MPFF one gram three times daily, pre and post-operatively, reduce the edema, post-operative pain and risk of bleeding, which is clinically significant.

Keywords: hemorrhoid artery ligation, recto-anal repair (HAL-RAR), internal hemorrhoid, Micronised Purified Flavonoid Fraction.

Chronic venous insufficiency (compared to placebo) and also reduces edema in leg chronic venous insufficiency (compared to diosmine). Our animal research by induction of anal Wistar with croton oil showed that mean (SD) anal weight (mgr) in MPFF was 453.61 (96.99) while in placebo, 551.87 (65.38) (p=0.046). It can be concluded that MPFF reduces the edema of experimental hemorrhoids. Our rational, pre-operative MPFF and reducing the prolapsing pile will decrease the edema and the size of the pile and will influence our next choice in managing this patient. We decided to give one gram of MPFF three times daily the day before surgery (starting after breakfast) (Figure 2). At 09.00 PM, under midazolam sedation, the prolapse can easily be reduced into the rectum, and we did pack the anus. The patient sleeps overnight and prepares for surgery the next morning (06.00 AM). In the operating room, packing was removed, and the hemorrhoid was prolapsed. We noticed that there was a significant reduction in edema. However, it was still a prominent grade IV internal hemorrhoid with less edema. We think it was impossible to be operated with minimally invasive.

We personally avoid the White Head method. Combination Hemorrhoid Arterial Ligation Recto anal Repair (HAL-RAR) and Minimal Mucocutaneous Excision (MME) is advised if, during HAL-RAR, there are still some prolapse and excessive skin components. In this case, it was impossible to do HAL-RAR for the primary anal cushion since the nodule was still big enough. Therefore we prefer a combination Morgan-Milligan and HAL-RAR. We did the Morgan Milligan method for the primary anal cushion and HAL-RAR for the secondary anal cushion. Under spinal anesthesia and lithotomy position, under doppler guidance, we did ligation of the branch of the rectal artery in the primary anal cushion (3rd, 7th, and 11th o’clock) followed by radial excision to the primary anal cushion. However, it still left a prominent secondary anal cushion. We did HAL-RAR for the prominent mucosal bridge (secondary anal cushion). To reduce post operative pain, we did a perineal nerve block.

Intravenous cefotaxime as antibiotic prophylaxis was given, and post-operatively reducing the prolapse is impossible. Therefore, non-operative management that may reduce the inflammation will not be worth it for this patient. Is minimally invasive surgery possible in this patient? Repositioning the prolapsing anal cushion to its position by using stapler hemorrhoidopexy or hemorrhoid artery ligation and recto anal repair (HAL-RAR), we think it is impossible to achieve complete reduction since the prolapsing is too big. Is the Morgan-Milligan method possible the get complete healing for this patient? In the Morgan-Milligan method, removing the primary anal cushion (3,7 and 11th O’clock) will leave the prominent secondary anal cushion. It will take some weeks to get a complete reduction of the rest secondary anal cushion. We think it will not satisfy the patients. Is the Whitehead method, removing all (circular fashion) the hemorrhoid tissue will heal this patient? Yes, the Whitehead method is the only surgery to remove all of the nodules. However, removing hemorrhoids circularly produces severe post-operative pain and high-risk complications like stricture, constipation, incontinence and wet anal syndrome. Therefore, we do not use this method again. Can reducing the edema and the size of the hemorrhoid change the management option? Micronized purified flavonoid fraction (MPFF) reduces edema in leg chronic venous insufficiency (compared to placebo) and also reduces edema in leg chronic venous insufficiency (compared to diosmine).
patient was given 100 milligrams of ketorolac twice daily. One gram of MPFF was given three times a day for the next 3 days, followed by a dose of one gram twice daily for the next 7 days (Figure 3). To facilitate defecation patient should have a high-fiber diet and water intake of 2-3 L/day. Patients should avoid strenuous exercise and no sexual intercourse within 2 weeks. The day before surgery, VAS was 7, and 24 hours after surgery, the VAS was 4; the patient experienced the first flatus and no bleeding. Followed up on 48 hours VAS was 3, have defecation no bleeding and patients went home. On the 7th post-operative day, the VAS was 1; the patient had no problem with defecation and no bleeding and a good operative wound. On 3rd month post-operatively, the patients had no complaints or signs of relapse. At the 17th month post-operatively, the patient was in good condition with no sign of relapse and no complaint.

**DISCUSSION**

We expected the pain scale (VAS) at 24 hours post-operatively for this case will be 7 because our previous report showed that factors affecting the post-operative pain after HAL RAR were the additional treatment for thrombus, skin tag, hypertrophy of anal papilla and the presence of anal laceration. The highest VAS after 24 hours was in an anal laceration; it was 6. Our case had multiple wounds; rationally, the VAS will be more than 6, but the VAS 24-hour post-operatively was 4. The difference was a dose of MPFF in our previous series 2x I gr and given post-operatively only. In this case, we gave the patient one gram of MPFF three times a day and given pre-operative and post-operatively. After 24 hours post-operatively, the VAS was low (4), and the first flatus was experienced within 24 hours. On 48 hours post-operatively, the VAS was 3, and the patient started defecation and no bleeding. Meta-analysis showed that MPFF significantly reduce pain, bleeding, discharge or leakage, and pruritus on hemorrhoid treated medically. and RCT for post hemorrhoidectomy, MPFF reduces pain, tenesmus, pruritus and bleeding. Further studies can enroll different doses and longer time of MPFF administration.

**CONCLUSION**

Management of big grade IV internal hemorrhoids is challenging. A combination of Morgan Milligan for the big pile and HAL-RAR for the rest gives a good result. The administration of MPFF one gram three times daily pre- and post-operatively showed clinically significant results in reducing the edema, post-operative pain, and risk of bleeding.

**CONFLICT OF INTEREST**

The authors declare that there is no competing interest regarding the manuscript.

**ETHICAL CONSIDERATION**

This research was conducted based on the ethical conduct of research from the Ethics Committee of the Medical Faculty, Universitas Diponegoro, with permission number 017/III/KEpE/2021.

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**AUTHOR CONTRIBUTION**

All authors contributed to the study from the conceptual framework, data gathering, and analysis until the study’s results were interpreted upon publication.

**REFERENCE**