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Combined Doppler-Guided Hemorrhoidal Artery Ligation (HAL) and Milligan–Morgan Hemorrhoidectomy for Grade III Hemorrhoidal Disease Associated With a Chronic Posterior Anal Fissure: A Case Report

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Abstract: **Case Report**

***Background*:** Grade III hemorrhoidal disease may require operative management, particularly when associated with concomitant anorectal pathology. Doppler-guided hemorrhoidal artery ligation (HAL/THD) reduces arterial inflow, whereas excisional hemorrhoidectomy (Milligan–Morgan) remains a reference procedure for advanced prolapse and significant external components [1]. ***Case presentation*:** A 37-year-old patient with symptomatic grade III internal hemorrhoids and a chronic posterior anal fissure underwent a combined procedure: Doppler-guided HAL with figure-of-eight sutures at the principal pedicles (3, 5, 7, and 11 o'clock), followed by excisional hemorrhoidectomy of three piles using a Milligan–Morgan approach, with fissure excision included in the specimen. Intra-operative photographs illustrate exposure, disease appearance, and immediate postoperative aspect (Figures 1–2). ***Conclusion*:** This case highlights a tailored combined strategy in selected patients with grade III hemorrhoids and associated chronic fissure, aiming to address both vascular inflow and advanced prolapse/external components [1].

Keywords: Hemorrhoids, Grade III, Doppler-Guided Hemorrhoidal Artery Ligation, HAL, THD, Milligan–Morgan, Hemorrhoidectomy, Anal Fissure, Case Report.

INTRODUCTION

Hemorrhoidal disease is common and may present with bleeding, prolapse, and discomfort. Treatment selection depends on symptom severity, hemorrhoid grade, and coexisting anorectal conditions. Contemporary guidelines emphasize an individualized approach that ranges from office-based procedures to operative techniques for more advanced disease [1]. Excisional hemorrhoidectomy (open Milligan–Morgan or closed Ferguson) is generally reserved for higher-grade prolapse, substantial external components, or recurrence after less invasive methods [1]. Doppler-guided hemorrhoidal artery ligation (HAL), often performed with or without mucopexy/rectoanal repair, is intended to decrease arterial inflow and improve symptoms in selected grade II–III cases, though recurrence may be higher than with excisional approaches in some series [2-4].

Case Presentation

A 37-year-old patient with no reported medical comorbidities presented with symptomatic hemorrhoidal disease. Intra-operative assessment of the anal verge and anal canal confirmed **grade III internal hemorrhoids** and a **chronic posterior (posterior commissure) anal fissure**. The decision was made to perform a combined procedure to address (i) the vascular component via Doppler-guided ligation and (ii) the advanced prolapse/external components via

excisional hemorrhoidectomy, while treating the associated chronic fissure in the same session [1, 3].

Surgical Technique (as documented in the operative note)
The procedure was performed in a proctology operating setting.

1) Doppler-guided hemorrhoidal artery ligation (HAL)

A Doppler-equipped proctoscope system was introduced. The **principal hemorrhoidal arteries** were identified under Doppler guidance and ligated using **figure-of-eight sutures** (2/0 suture material) at **3, 5, 7, and 11 o'clock** positions. This step aimed to reduce arterial inflow to the hemorrhoidal plexus [3, 4].

2) Treatment of a prominent external component

A notable **external hemorrhoidal component** at **7 o'clock** was ligated with a 2/0 suture prior to excision.

3) Excisional hemorrhoidectomy (Milligan–Morgan)

An **open excisional hemorrhoidectomy** was then carried out for **three hemorrhoidal piles** using a **Milligan–Morgan technique**, and the **chronic posterior fissure was excised within the resection specimen** (combined hemorrhoidectomy with fissure excision as stated in the note). Hemostasis was secured, dressing applied, and the specimen was sent for histopathology [1, 5].

Intra-operative Imaging

Figure 1: Intra-operative exposure with prolapsing hemorrhoidal tissue at the anal verge

Figure 2: Final intra-operative view after hemostasis (operative field appearance)

DISCUSSION

For **grade III hemorrhoids**, operative options include Doppler-guided dearterialization techniques (HAL/THD ± mucopexy) and excisional hemorrhoidectomy. Guidelines generally consider excisional hemorrhoidectomy the most definitive option for advanced prolapse and mixed internal–external disease, while HAL/THD may offer less postoperative pain and quicker recovery in selected patients, at the expense of potentially higher recurrence compared with excision [1, 2, 4].

Comparative studies have reported differences in postoperative pain, recovery, and recurrence between Milligan–Morgan hemorrhoidectomy and HAL-based techniques. For example, comparative evaluations such as Milligan–Morgan versus HAL-RAR have explored symptom control and recurrence, reflecting the ongoing debate regarding optimal selection by phenotype (dominant bleeding vs dominant prolapse/external component) [2]. Long-term data on THD/HAL also suggest a trade-off between improved early comfort and higher recurrence in some cohorts, emphasizing the importance of patient selection and counseling [4].

In the present case, the coexistence of **grade III disease** with a **prominent external component** and an **associated chronic posterior fissure** supported a combined

strategy. The HAL step targeted arterial inflow, potentially reducing bleeding and engorgement, while the Milligan–Morgan excision addressed the prolapsing/external components and allowed **simultaneous fissure excision**. Such combined or hybrid approaches have been described in the literature as a way to tailor treatment for advanced or mixed disease patterns [6, 7].

CONCLUSION

This case illustrates a **tailored combined approach**—Doppler-guided HAL plus open Milligan–Morgan hemorrhoidectomy—with concurrent excision of an associated chronic posterior anal fissure. In selected grade III patients with mixed internal–external disease and concomitant anorectal pathology, combining vascular control (HAL) with definitive excision (Milligan–Morgan) may offer comprehensive symptom management. Further standardized follow-up is essential to report postoperative pain, wound healing, complications, and recurrence [1, 2, 4].

Patient Consent and Ethics

Written informed consent was obtained for the use of anonymized clinical data and intra-operative images for academic publication. The manuscript contains no directly identifying information.

Conflicts of Interest: None declared

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