

# Investigating the Efficacy of Hemorrhoidectomy Versus Transanal Hemorrhoidal Dearterialization for Anticoagulated Patients

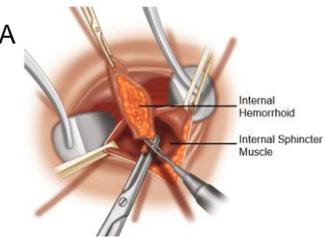
Alisha J. Khodabocus

Medical Science Internship Program 2021  
Virginia Commonwealth University School of Medicine

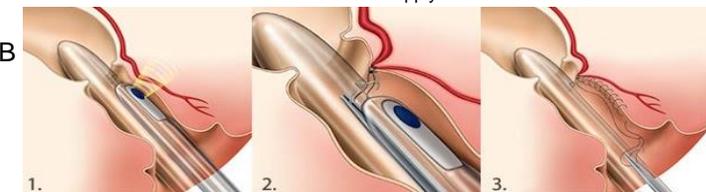
## ABSTRACT

Anticoagulant medication is used to prevent the formation of blood clots in patients. Correlations have been found between anticoagulant use and the occurrence of internal hemorrhoids. Internal hemorrhoids are often treated surgically with hemorrhoidectomy, a well-known but invasive procedure, involving the excision of hemorrhoidal tissue. The recently developed transanal hemorrhoidal dearterialization (THD) procedure is an alternative to hemorrhoidectomy. THD is minimally invasive and involves suturing the hemorrhoid-feeding arteries. The purpose of this literature review is to investigate whether hemorrhoidectomy or THD is a safer hemorrhoid treatment for anticoagulated patients. This review explores published research on both procedures, including cohort studies. The review examines a retrospective cohort study investigating the efficacy of THD among 106 control and anticoagulated patients over a 53-month period. Additional retrospective cohort studies investigated common complications of hemorrhoidectomy, such as postoperative bleeding, severe hemorrhaging, and transfusion. It was found that hemorrhoidectomy creates a greater risk of postoperative bleeding and transfusion in anticoagulated patients—hemorrhoidectomy does not put such patients at a greater risk for severe hemorrhaging. By contrast, THD offers no greater postoperative bleeding risks and lower recurrence rates for anticoagulated patients. THD tends to be a safer surgical treatment for anticoagulated patients, eliminating the risk of postoperative complications that come with hemorrhoidectomy. There is promise in the early data regarding the efficacy of the THD procedure for anticoagulated patients, but there are also limitations. As a result, further research must be conducted on the THD procedure to ensure its external validity.

## BACKGROUND

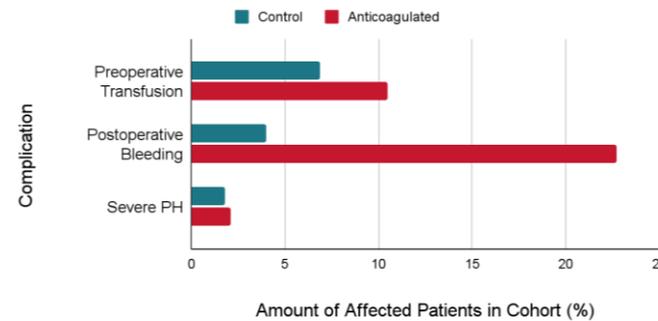


**Figure 1:** (A) The hemorrhoidectomy procedure (Kirat, 2020). This common procedure involves the excision of the hemorrhoid from the internal sphincter muscle using a sharp instrument, such as a scalpel or surgical scissors. (B) The THD procedure ("THD process," 2021). First, the hemorrhoid-feeding artery is detected with Doppler guidance. The artery is then ligated with absorbable sutures, effectively limiting blood supply to the hemorrhoids.



## RESULTS

### Complications of Hemorrhoidectomy Between Control and Anticoagulated Patients



**Figure 2:** After reviewing three retrospective cohort studies it was found that, pre-hemorrhoidectomy, there was a slightly greater risk of transfusion (6.9 v. 10.5%) for anticoagulated patients from severe hemorrhoidal bleeding, suggesting that the minimal invasiveness of THD would reduce this risk. Postoperative bleeding was more commonly seen in anticoagulated than control patients having undergone hemorrhoidectomy (4 v. 22.7%). The risk of severe postoperative hemorrhaging (PH) from hemorrhoidectomy was found to be rare for both the control and anticoagulated groups. Anticoagulant use was not a statistically significant factor for PH. Overall, there tend to be greater risks for anticoagulated patients than control when undergoing hemorrhoidectomy.

### Properties and Outcomes of THD Surgery Between Control and Anticoagulated Patients

	THD on anticoagulation (%)	THD off anticoagulation (%)	p-value
<i>n</i>	36	70	--
Age [range]	64 [35-79]	48 [22-86]	NS
Preoperative symptoms			
Bleeding	33 (86.6)	49 (73.1)	0.006
Prolapse	9 (25.0)	27 (38.5)	0.0004
Other	10 (26.3)	8 (11.9)	NS
Postoperative symptoms			
Bleeding	7 (19.4)	11 (15.7)	NS
Pain	7 (19.4)	9 (12.8)	NS
Recurrence	1 (2.8)	5 (7.1)	0.049

**Figure 3:** A retrospective cohort study on the outcomes of THD surgery for anticoagulated patients found that postoperative symptoms, such as bleeding and pain, were similar for both the control and anticoagulated groups. In addition, recurrence rates were found to be lower for the anticoagulated group—this is likely because the THD procedure addresses the root cause of hemorrhoids: the feeding arteries. The statistical significance of some preoperative symptoms and limitations of the study may weaken this evidence, however.

## CONCLUSIONS

- After analysis of the literature, it was found that THD is generally a safer surgical procedure for treating hemorrhoids in anticoagulated patients
- The risk of bleeding and pain post-THD is not significantly greater for anticoagulated patients than for control patients. By contrast, the risk of bleeding post-hemorrhoidectomy is drastically greater for anticoagulated patients than for control patients.
- Both procedures offer the similar rare risks of severe complications like PH, suggesting that neither procedure is safe to such an extent that it decreases mortality in anticoagulated patients.
- Another benefit to the THD procedure is that it offers lower recurrence rates for anticoagulated patients than control patients.

## FUTURE DIRECTION

- There is promise in the early data regarding the THD procedure in treating anticoagulated patients. However, there are limitations in this research: the study is not randomized or blinded, and it has a relatively low sample size. In order to ensure the external validity of this data, further research should be pursued with greater measures taken to eliminate errors. This would help to verify the THD procedure as the safer treatment for all anticoagulated patients, as opposed to the mere 36 in the cohort study.
- In addition, further research could be pursued in investigating whether differences in the length of cessation of anticoagulants during the perioperative period would impact the safety of either procedure.

## REFERENCES

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