

Case Report

Hyaluronidase injection for anal hematoma in a high-risk patient: a case report

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Received: 24 February 2026

Revised: 07 April 2026

Accepted: 17 April 2026

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ABSTRACT

Anal hematomas are benign anorectal lesions that often resemble thrombosed haemorrhoids. Conventional management ranges from conservative therapy to excision. In elderly patients with major comorbidities, surgical intervention may be unsafe. This report describes the first known documented use of intralesional hyaluronidase to treat a large anal hematoma in a high-risk patient. A 70-year-old woman with hypertension, ischemic heart disease, and hypothyroidism (ejection fraction 55%) presented with a 4-cm bluish swelling at the 7 o'clock perianal position, initially mistaken for a prolapsed haemorrhoid. She was deemed unfit for anaesthesia. After counselling and informed consent, intralesional hyaluronidase was injected directly into the lesion. The swelling regressed rapidly, symptoms resolved, and bowel function normalized with supportive medication. No complications or recurrence were observed during three months of follow-up. Hyaluronidase breaks down hyaluronic acid in the extracellular matrix, reducing tissue turgor and promoting resorption. It is well established in dermatology and ophthalmology but has not been reported in anorectal conditions. This case suggests it may provide a minimally invasive alternative in carefully selected patients for whom conventional surgery is contraindicated. Limitations include the single-case nature of the report and lack of standardized dosing. Intralesional hyaluronidase may be a safe and effective treatment for large anal hematomas in high-risk surgical patients. Further clinical studies are warranted.

Keywords: Anal hematoma, Hyaluronidase, Hyaluronic acid, Minimally invasive therapy, Haemorrhoid misdiagnosis

INTRODUCTION

Anal hematomas are benign perianal swellings caused by rupture of subcutaneous vessels in the anal margin. They present suddenly, often after straining or minor trauma, and appear as tense, bluish lumps near the anal verge.¹ Although self-limiting in many cases, they can cause significant discomfort, difficulty in stool passage, and occasionally diagnostic confusion with other anorectal disorders. The most frequent misdiagnosis is thrombosed external haemorrhoid, which is clinically similar but differs in anatomical origin and management.² The true incidence of anal hematomas is not well documented, as

many patients do not seek medical care; however, they are encountered frequently in surgical practice and in emergency settings. Risk factors include constipation, pregnancy, heavy lifting, and sudden increases in intra-abdominal pressure.³ Pathophysiologically, rupture of a small venule or arteriole leads to subcutaneous bleeding and hematoma formation. The overlying skin is often intact, resulting in a tense, painful lump. Management strategies depend on the size, duration, and symptom severity. Small hematomas (<2 cm) that present late are generally treated conservatively with analgesics, stool softeners, and sitz baths. Larger or acutely painful lesions, especially those <72 hours old, are usually

excised under local anaesthesia to provide rapid relief.²⁻⁴ Conservative care, though safe, may result in prolonged discomfort, whereas excision provides immediate benefit but carries risks of bleeding, infection, and recurrence. In elderly patients with cardiovascular or systemic comorbidities, surgical options may be unsafe, even when symptoms are significant. Case reports and small series have highlighted the need for tailored management in such populations.⁵ In this context, minimally invasive alternatives that can accelerate resorption without anaesthesia are highly desirable.

Hyaluronidase is an enzyme that hydrolyses hyaluronic acid, the major glycosaminoglycan of the extracellular matrix. By breaking down this structural component, it lowers tissue viscosity, enhances permeability, and promotes dispersion of fluids.⁶ Clinically, it is used in ophthalmology, anaesthesia, and dermatology to facilitate drug diffusion, reduce edema, and dissolve dermal fillers.⁷ Its role in managing hematomas or localized collections has been described in other fields, but not in anorectal surgery.⁸ This case describes the first application of intralesional hyaluronidase for an anal hematoma in a patient deemed unfit for surgery. The successful outcome suggests a potential new therapeutic approach in selected high-risk patients.

CASE REPORT

Patient demographics and history

A 70-year-old woman presented to the surgical outpatient clinic with a one-day history of anal swelling and difficulty passing stools. The swelling was associated with irritation and mild discomfort rather than severe pain. She denied rectal bleeding, trauma, or anticoagulant use.

Her medical history was significant for hypertension, ischemic heart disease, and hypothyroidism. She was on amlodipine, aspirin, and levothyroxine therapy. A recent echocardiogram revealed an ejection fraction of 55%. On cardiology review, she was deemed unfit for anaesthesia or surgical intervention due to her comorbidities.

Examination and investigations

In lithotomy position, a solitary bluish-purple swelling was visible at the 7 o'clock perianal position (Figure 1). It measured approximately 4 cm in diameter, was tense, firm, and non-reducible. The lesion was mildly tender but not acutely painful. Digital rectal examination revealed normal anal tone and no internal masses. Vital signs were stable. Laboratory investigations showed haemoglobin 12.8 g/dl, white blood cell count $7.5 \times 10^9/l$, and platelets $210 \times 10^9/l$. Prothrombin time and INR were within normal limits. Thyroid function tests were stable. No imaging was performed as the diagnosis was clinical.



Figure 1: Anal haematoma observed at 7 o'clock position approximately 4 cm in diameter, minimal pain, discomfort at site reported by patient. On per-rectal digital examination, no spasm or lesion was noted.



Figure 2: Injection hyaluronidase injected into the haematoma using a 26 g needle (dose:1500 IU in 2ml twice, total 4ml injected into the lesion equivalent to 3000 IU). The intralesional injection was given directly into the mucosal layer, no local anaesthetic was used.

Clinical reasoning and management decision

Differentials considered included thrombosed external haemorrhoid and perianal abscess. However, the absence

of systemic symptoms, the lesion's colour, consistency, and intact overlying skin supported the diagnosis of a large anal hematoma. Conventional management would be excision under local anaesthesia, but this was contraindicated due to the patient's cardiac risk. Conservative management alone was expected to prolong symptoms and impair quality of life. After a multidisciplinary discussion and detailed counselling, we proposed intralesional hyaluronidase injection as a novel alternative. The rationale was to enzymatically reduce extracellular matrix viscosity, thereby accelerating hematoma resorption. The patient and her family were informed of the off-label nature of the therapy, potential risks including allergy and infection, and the lack of prior reports in this setting. Written informed consent was obtained.

Intervention

The procedure was conducted on OPD basis. Under aseptic conditions and standard monitoring, hyaluronidase was injected into the hematoma. A fine-gauge needle (26G) was used to deliver the drug centrally and peripherally.



Figure 3: Immediate resorption of the haematoma was noted within a few minutes, with no pain/discomfort/anaphylaxis noted. Patient was kept under observation to ensure support against ADR, if any.

(Dose:1500 IU in 2ml twice, total 4ml injected into the lesion equivalent to 3000 IU) (Figure 2). No local anaesthetic was required, and the patient tolerated the procedure with only mild transient discomfort. She was observed for 120 minutes post-procedure and discharged after an uneventful 24 hours, with instructions for sitz baths, stool softeners, and to return if new symptoms

developed. Immediate resorption was noted with shrinkage of the lesion.



Figure 4: No new lesion or signs of local tissue damage were noted at the one week follow up.

Follow-up and outcomes

At one week follow up, there was no visible swelling or lesion. Symptoms had completely resolved (Figure 4). At one month, there was no recurrence or any other symptoms.

Patient perspective

The patient expressed gratitude for a treatment option that spared her the risks of anaesthesia and surgery. She reported improved quality of life after recovery.

DISCUSSION

Anal hematomas are frequently misdiagnosed as thrombosed haemorrhoids due to overlapping clinical features. Accurate diagnosis is essential because haemorrhoids and hematomas differ in anatomy and management.^{1,2} In our case, the lesion was initially mistaken for a prolapsed haemorrhoid, underscoring this diagnostic challenge. Conservative treatment remains the mainstay for small, late-presenting hematomas. Symptomatic larger lesions are best treated with excision, but this requires anaesthesia and may not be feasible in patients with cardiovascular comorbidity.²⁻⁵ For such patients, clinicians often face a therapeutic dilemma: leave the lesion untreated with prolonged symptoms, or attempt risky surgical excision. Hyaluronidase offers a potential solution. Its enzymatic action lowers tissue

viscosity and facilitates resorption of interstitial fluid.⁶ In dermatology, it is widely used to dissolve dermal fillers and treat localized edema, with a strong safety record.⁷ In ophthalmology, it enhances diffusion of local anaesthetics and reduces tissue turgor.⁸ While rare allergic reactions have been reported, most adverse events are mild and self-limiting.⁹

Our case is, to our knowledge, the first application of hyaluronidase for an anal hematoma. The patient's rapid symptomatic relief and complete resolution of the haematoma within one day support the hypothesis that enzymatic reduction of extracellular matrix resistance accelerates resorption. Importantly, no complications were observed. The novelty of this report lies not only in the new indication but also in offering an alternative pathway for frail or comorbid patients. Current guidelines for anorectal emergencies emphasize individualized care and avoidance of unnecessary anaesthesia.¹ Hyaluronidase could align with these principles by offering a minimally invasive, office-based treatment.

Limitations must be acknowledged. This is a single case; efficacy cannot be generalized. Optimal dose, injection technique, and safety profile in the anorectal region remain undefined. Comparative data with conservative or surgical management are lacking. Risks such as infection, bleeding, or hypersensitivity require careful monitoring. Future directions include prospective case series to evaluate feasibility, dosing, and outcomes, followed by randomized studies comparing hyaluronidase with conventional therapy in high-risk populations. If validated, this approach could expand the therapeutic toolkit of colorectal surgeons, improve patient comfort, and reduce hospital admissions.

CONCLUSION

Intralesional hyaluronidase injection provided rapid and safe resolution of a large anal hematoma in a patient with significant comorbidities who was unfit for surgery. This case highlights the importance of accurate diagnosis and introduces a minimally invasive alternative when standard surgical management is contraindicated. Although limited to a single patient, the successful outcome suggests that hyaluronidase may represent a promising adjunct in select cases. Further studies are essential to confirm efficacy, define optimal protocols, and assess long-term safety.

ACKNOWLEDGEMENTS

The authors are grateful to the affiliation Institute for their support and guidance. The authors also express their gratitude to the patient for providing consent to publish.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

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Cite this article as: Pansare SG, Wavhal PP.

Hyaluronidase injection for anal hematoma in a high-risk patient: a case report. *Int Surg J* 2026;13:860-3.