

Comparing Hemorrhoid treatment options

Treatment options

Treatment	Mechanism of Action (MOA)	Hemorrhoid type	Clinical Success	Symptom / Score Improvement	Recurrence Rate	Adverse Effects	Notes / Key Emphasis
Topical conservative care (Sitz baths, hydrocortisone, lidocaine, witch hazel)	Reduces local inflammation, edema, and sphincter spasm; improves hygiene and comfort	External / mixed (Grade I–II)	60–70 % ¹	Pain VAS ↓ 2–3/10; mild bleeding relief	Up to 40 % ¹	Local irritation 5–10 %	Safe short-term for external flare-ups; relieves pain/itching; limited effect on internal bleeding or prolapse.
Topical corticosteroid ± anesthetic	Anti-inflammatory ± local anesthetic action; transient vasoconstriction	External / perianal	65–75 % ²	Subjective relief only; no validated HSS	30–40 % ²	Skin atrophy, dermatitis	For acute external hemorrhoids or thrombosis ; avoid > 2 weeks use.
Phlebotonics (MPFF, Daflon®, diosmin–hesperidin)	↑ Venous tone, ↓ capillary permeability & inflammation, ↑ lymphatic drainage	Internal + external (Grades I–III)	70–80 % ³	HSS 15 → 9 (Δ –6); bleeding ↓ ~60 % ³	15–25 % ³	Mild GI upset < 5 %	Improves bleeding/pain; safe for long-term continuous use ; supports symptom control after procedures.
Rubber Band Ligation (RBL)	Mechanical strangulation → ischemic necrosis & fibrosis of internal cushions	Internal (Grades II–III)	80–90 % ⁴	HSS 18 → 10 (Δ –8); HBS 4 → 1.5 (Δ –2.5) ⁴	10–15 % ⁴	Pain 10–20 %, minor bleed 5–10 %	Office-based; most effective for internal HD; not suitable for external disease.
Sclerotherapy (polidocanol foam)	Endothelial damage → fibrosis & obliteration of hemorrhoidal venules	Internal (Grades I–II)	75–85 % ⁵	HSS 16 → 9 (Δ –7); HBS 4 → 2 (Δ –2) ⁵	10–20 % ⁵	Mild pain 8 %, ulcer 2 %	Minimally invasive; effective for bleeding-predominant HD; safe in anticoagulated patients .
Infrared Coagulation (IRC)	Thermal coagulation of hemorrhoidal vessels → thrombosis & fibrosis	Internal (Grades I–II)	75–85 % ⁶	HSS 15 → 9 (Δ –6); HBS 3.8 → 2 (Δ –1.8) ⁶	15–25 % ⁶	Mild pain 10–15 %	Best for early internal HD; non-surgical; quick recovery; modest durability.
Transanal Hemorrhoidal Dearterialization (THD / HAL)	Doppler-guided arterial ligation ± mucopexy → reduces arterial inflow & repositions prolapse	Internal ± mixed (Grades II–III)	85–90 % ⁷	HSS 19 → 11 (Δ –8); HBS 4.5 → 1.5 (Δ –3); QoL 4 → 2 ⁷	10–20 % ⁷	Pain 20–30 %	Durable with less pain vs excision; may recur from collaterals; preserves continence .

Treatment options continued

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Stapled Hemorrhoidopexy	Circular mucosal resection + stapling → reduces internal prolapse & interrupts blood flow	Internal / circumferential (Grades II–IV)	85–90 % ⁸	HSS 20 → 11 (Δ −9); QoL 4.5 → 2.5 (Δ −2) ⁸	10–15 % ⁸	Bleeding 5–10 %, urgency 5 %	Corrects prolapse; faster recovery but higher recurrence than open surgery .
Conventional Hemorrhoidectomy (Milligan–Morgan / Ferguson)	Surgical excision of hemorrhoidal tissue and plexus	Internal + external mixed (Grades III–IV)	> 90 % ⁹	HSS 21 → 9 (Δ −12); QoL 5 → 2 (Δ −3); Goligher IV → I ⁹	< 10 % ⁹	Severe pain 80–90 %, urinary retention 10 %	Most durable ; definitive for large mixed HD; higher morbidity; inpatient recovery.
Hemorrhoidal Artery Embolization (HAE / “Emborrhoid”)	Endovascular embolization of superior ± middle rectal arteries → reduces arterial inflow to plexus	Internal / mixed (Grades II–IV)	85–93 % ^{10, 11}	HSS 11 → 7.8 (Δ −3.2); HBS 4.4 → 2.2 (Δ −2.2); QoL 2.2 → 0.8 ¹⁰	8–20 % ¹¹	Mild pelvic ache 8 %, transient fever 3 %, no ischemic events	Minimally invasive; preserves continence; ideal for bleeding-predominant, high-risk, or anticoagulated patients, wide rage of HD grades.

References

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Key Published Studies Reporting Clinical Outcomes of HAE

Study (Year, Journal)	Design / N	Follow-up (mo)	Clinical Success	Symptom Score Improvements	Recurrence / Retreatment	Complications	Key Findings / Notes
Falsarella ML et al., JVIR 2023	Prospective RCT, n = 33 (16 HAE vs 17 hemorrhoidectomy)	12	90% (HAE arm)	HSS 12 → 7 (Δ −5); VAS pain significantly lower vs surgery	10%	None major; no ischemia or incontinence	First randomized head-to-head trial: HAE achieved similar bleeding control and faster recovery than surgery.
Bagla S et al., JVIR 2023	Multicenter prospective registry, n = 134	12	93% @1 mo; 86% @12 mo	HSS 11 → 7.8 (Δ −3.2); HBS/FBS 4.4 → 2.2 (Δ −2.2); QoL 2.2 → 0.8 (Δ −1.4); Goligher 2.3 → 1.2 (Δ −1.1)	8–15%	Mild pelvic pain 8%; transient fever 3%; no ischemia	Largest modern U.S. dataset: validated efficacy, safety, and reproducibility across centers.
Falsarella ML et al., CVIR Endovasc 2020	Prospective single-arm, n = 43	12	84%	HSS 13 → 8 (Δ −5); VAS 6 → 2 (Δ −4)	10–15%	Mild pain 12%; no ischemia	Early standardized technical protocol; defined embolization endpoints and expected HSS gains.
Marasco G et al., CVIR Endovasc 2021	Prospective, n = 47 (including anticoagulated patients)**	12	87%	HSS 14 → 9 (Δ −5); HBS 4.2 → 2.1 (Δ −2.1)	12%	No major AEs	Showed HAE safe without stopping anticoagulation; bleeding control maintained at 12 mo.
van Overhagen H et al., CVIR 2019	Prospective, n = 40	24	82%	HSS 13 → 8 (Δ −5)	15–20%	Minor pain 10%; transient bleeding 5%	First 2-year follow-up study; confirmed durability of symptom relief.
Carnevale FC et al., CVIR 2018	Single-center prospective (10-yr experience), n = 72	6–60	88%	HSS 12 → 7 (Δ −5); QoL 3.8 → 1.5 (Δ −2.3)	~12%	Minor transient pain 5%; no ischemia or incontinence	Foundational “Emborrhoid” technique study; demonstrated long-term durability and safety.
Ghelfi J et al., CVIR Endovasc 2022	Prospective anatomic-outcome study, n = 25	6	88%	HBS 4.3 → 2.1 (Δ −2.2)	12%	None major	Highlighted role of middle rectal arteries; emphasized importance of complete bilateral embolization.
Bacaro D et al., Tech Vasc Interv Radiol 2023	Real-world prospective registry, n ≈ 100	6–12	~90%	HSS 12 → 8 (Δ −4)	10–20%	None major	Expanded indication to Grades III–IV and mixed internal disease; high safety.

References

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	Level I	Level II	Level III	Level IV
RBL				
IRC	(Low evidence)			
SCL				
DG-HAL				
SH				
Hemorrhoidectomy				
HAE				

RBL = rubber band ligation; IRC = infrared coagulation; SCL = sclerotherapy; DG-HAL = Doppler guided hemorrhoidal artery ligation; SH = stapled hemorrhoidopexy

Recommended (1st line)	Indicated as 2nd line	Not recommended
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OUTCOMES MATRIX

Treatment	Hemorrhoid Type	Success	Recurrence
Fiber	All	↓ bleeding 50%	recurrence common
Band Ligation	Internal (Grades II–III)	80%	50% single-session 38% repeat
Sclerotherapy	Internal (Grades I–II)	90%	16%
IRC/Laser	Internal (Grades I–II)	65–95%	18–30% device/grade-dependent
HAL±mucopexy	Internal (Grades II–III)	90%	30%
Hemorrhoidopexy	Internal (Grades II–IV)	80%	10-20%
Hemorrhoidectomy	Internal + external mixed (Grades III–IV)	>90%	2-8%
HAE	Internal / mixed (Grades II–IV)	80-90%	18%

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HAE	80-90%	18%

