

Studienlage Lasertherapie

1983 1989 1991 2006

Laser als lokale Wärmequelle

Reduktion des Begleitödems

Tonisierung

Revitalisierung des Gewebes

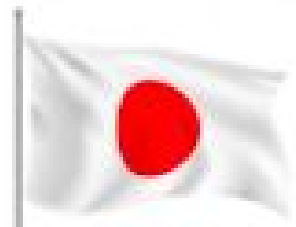
Trelles



1983 **1989** 1991 2006

Laser als Skalpell bei Hämorrhoidektomie

Iwagaki



1983 1989 **1991** 2006

Oberflächige Koagulation mit **Laser**

Wang



1983 1989 1991 **2006**

Laser für minimalinvasive

Koagulation und Evaporisation

Submuköse Hämorrhoidoplastie

Karahaliloglu



A.F. Karahaliloğlu

Die Laserhämorrhoidoplastie (LHP). Eine neues operatives Verfahren zur Behandlung des fortgeschrittenen Hämorrhoidalleidens

Zusammenfassung

Fragestellung. Beschrieben wird ein neues operatives Verfahren zur Behandlung des fortgeschrittenen Hämorrhoidalleidens unter Verwendung eines Diodenlasers. Der Eingriff kann in einfacher Allgemein- oder Regionalanästhesie ambulant oder mit kurzzeitigem stationärem Aufenthalt erfolgen.

Patienten und Methodik. Im Zeitraum 01/2006–10/2009 wurden insgesamt 332 Patienten mit dieser neuen Technik operiert und postoperativ verfolgt. Zur Anwendung kam dabei ein Diodenlaser mit einer Wellenlänge von 980 nm, wobei zunächst eine Geradeausfaser und später eine speziell entwickelte Radialfaser benutzt wurden.

Ergebnisse. Die durchschnittliche Operationsdauer für alle vergrößerten Segmente betrug 17 min. Intraoperativ traten keine schweren Komplikationen auf; vereinzelte Blutungen nach Mukosaschädigung wurden mit Umstechungsligaturen versorgt (2,7%); leichtere Blutungen konnten durch Kompres-

sion beherrscht werden. Postoperativ wurden ebenfalls keine schweren Komplikationen verzeichnet; schmerzlose Gewebeschwellungen infolge der Laserenergie traten gehäuft auf (13%); Gewebenekrosen wurden in einem Fall beobachtet (0,3%). Weitere Komplikationen waren Perianalthrombose (1,5%), Fibromentwicklung (7,8%), Abszess- und subanodermale Fistelbildung (0,6%) sowie Harnverhaltung (2,1%). Im Beobachtungszeitraum 6 Monate bis 3 Jahre postoperativ zeigte sich bei 5,8% der nachuntersuchten Patienten ein erneuter Hämorrhoidalprolaps.

Schlussfolgerung. Die Laserhämorrhoidoplastie ist ein anoderm schonender Eingriff, der das hämorrhoidale Gewebe reduziert und die natürliche Anatomie schmerz- und komplikationsarm wiederherstellt.

Schlüsselwörter

Laser · Hämorrhoiden · Laserhämorrhoidoplastie · LHP · Mukopexie

Tissue Coagulation in Laser Hemorrhoidoplasty - An Experimental Study

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PMID: 32190743 PMID: PMC7065422 DOI: 10.1515/med-2020-0027

[Free PMC article](#)

Abstract

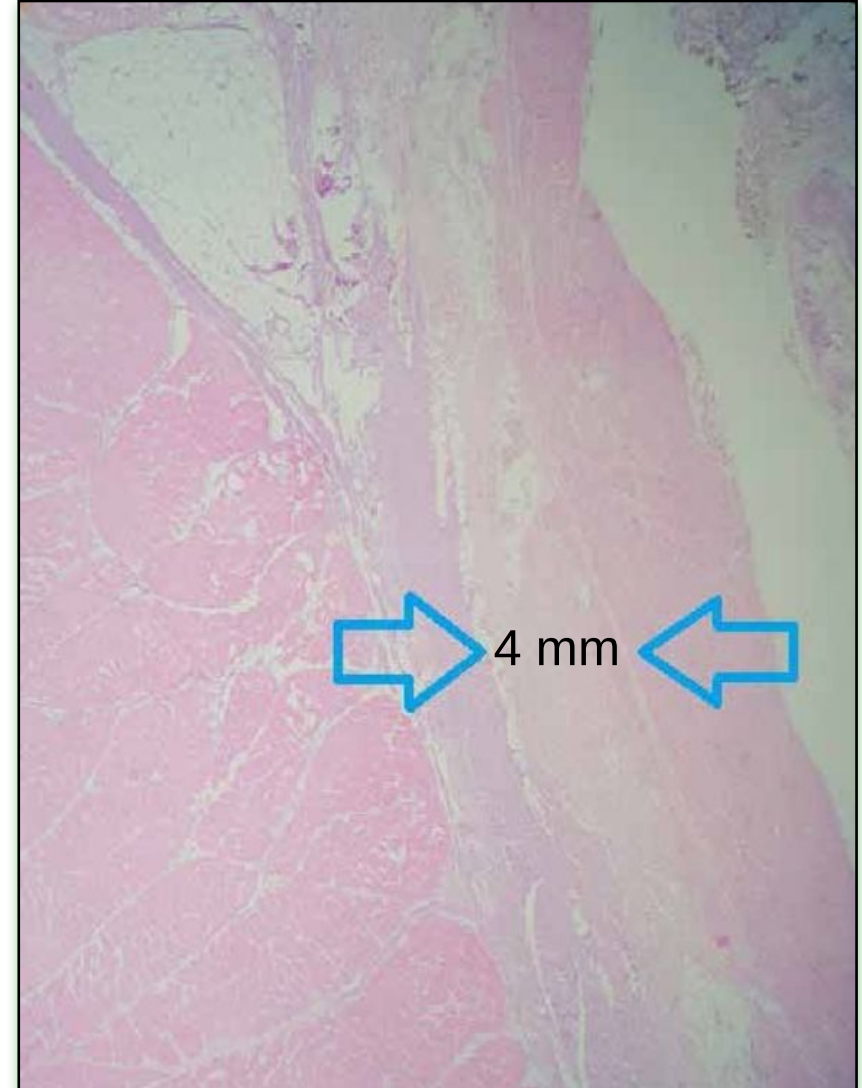
Background: Laser hemorrhoidoplasty (LHP) is a new technique for treatment of hemorrhoids. The exact extent of coagulation is not visible at the time of the procedure. There currently is no experimental or clinical data on the subject.

Objective: To evaluate the length of coagulation defect according to power and activation time of 1470nm diode laser on the perianal tissue model.

Methods: Fresh anorectal tissue of twenty-four pigs was used to produce 54 experimental samples. Each sample was randomly assigned to the laser power of 6, 8 and 10 W and 1, 2 or 3-second pulses. The procedure was performed using *Biolitec Ceralas* © diode laser with 1.85 mm optical fiber. The fiber was inserted in a manner, similar to intrahemorrhoidal laser application. Samples were evaluated using low-power and high-power light microscopy by a single pathologist. The length of tissue injury was measured on high-magnification microscopy.

Results: The longest tissue injury (mean 3.93 mm) was caused by the longest laser exposure time (3 sec) with no significant difference between laser power used.

Conclusions: 8 W 3-second application of the 1470nm diode laser results in coagulation area approximately 4 mm, and further coagulation should be initiated approximately 5 mm from the first one.



Was sagt die Leitlinie 04/2019

S3-Leitlinie - Hämorrhoidalleiden

Langfassung

Autoren:

A. K. Joos, R. Arnold, T. Borschitz, J. Brandt, J. Jongen, H. Krammer, F. Mader, P. Oetting, A. Ommer, M. Schmidt-Lauber, G. Schubert, K.-H. Moser, K. H. Moser, D. Zieker-Fischer, F. Hetzer, A. J. Kroesen, I. Kronberger, B. H. Lenhard, O. Schwandner, B. Strittmatter, A. Herold

Erstellungsdatum: 04/2019

Nächste Überarbeitung geplant: 03/2024

Nr. 36

Evidenzbasiertes Statement

Aufgrund der derzeit vorliegenden Evidenz kann keine Empfehlung für die verschiedenen Laser-Verfahren zur Behandlung des Hämorrhoidalleidens ausgesprochen werden.

Level of Evidence

Literatur: [1348], [752], [1176], [248], [988], [917]

II b

Konsens

Starker Konsens (9/9)

die "aktuellste" Studie aus dem 2017



[Laserhemorrhoidoplasty with 1470 nm Diode Laser in the Treatment of Second to Fourth Degree Hemorrhoidal Disease – a Cohort Study with 497 Patients]

[Article in German]

Guido Weyand ¹, Claudia Susanne Theis ², Aboubacar Nzambi Fofana ³, Felix Rüdiger ⁴,
Thomas Gehrke ³

Patients and methods: Between November 2010 and November 2016, 497 patients (age 55 ± 14 years) were submitted to laser haemorrhoidoplasty with a 1470 nm diode laser in the centre for minimally invasive proctology in Siegen District Hospital. All operated patients were included in the study. Perioperative clinical and technical data up to 6 weeks and follow-up data up to 6 months were analysed prospectively.

Results: The mean duration of operation was 14 min (± 5.2). A mean of 2.7 knots of 2.7 size were treated per patient. The mean postoperative pain was 2.5/10 (VAS). Long-term symptom relevance was 86%, and patient satisfaction 91%. Complications occurred in 49 patients (9.9%): bleeding 1.8%, infection 1%, urine retention 1.8%, oedema/thrombosis/prolapse 6.6%. 8.8% of patients suffered a relapse within 6 months. There were significant differences in pain on the day of the operation, and the parameters mucopexia, 3 treated segments and energy level > 500 J ($p < 0.05$). Complications were more common when mucopexia was performed, with 3 treated knots and energy consumed per patient > 500 J. The only significant difference was for energy level > 500 J ($p < 0.05$).

Conclusion: LHP is a safe, low pain and minimally invasive surgical procedure with long-term good patient acceptance and satisfaction and is suited for routine work. The energy applied should be reduced to a minimum. Complication rates are largely comparable with those of other minimally invasive conventional methods. Additional prospective studies must be performed, particularly in comparison to the Parks method, which gives similar functional results. With circular confluent findings, LHP cannot replace stapler hemorrhoidopexia.

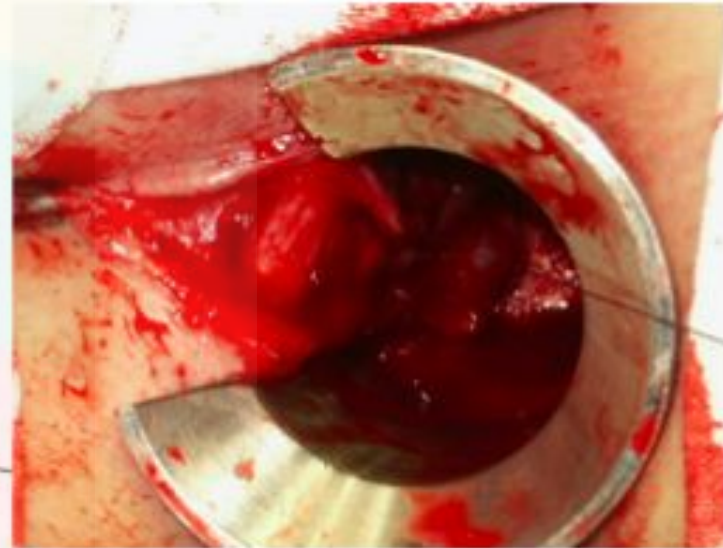
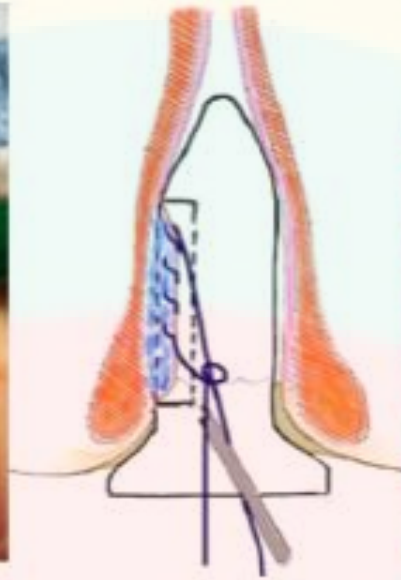


Laser-Hämorrhoiden Plastik (LHP). Ergebnisse der doppelblinden randomisierten kontrollierten Vergleichsstudie

Assoz. Prof. Dr. S. Mikalauskas^{1,2}, Prof. Dr. T. Poskus², Dr. D. Danys²

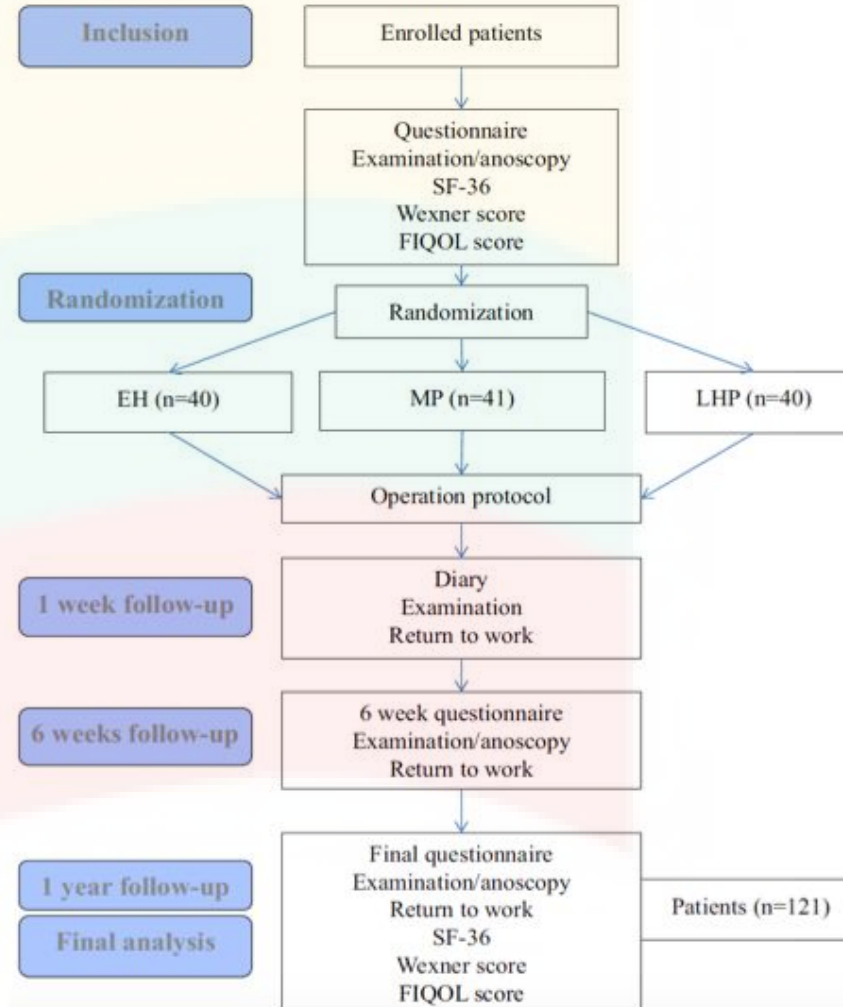
¹ Klinische Abteilung für Allgemein-, Viszeral- und Transplantationschirurgie, LKH Univ. Klinikum Graz, Graz, Österreich

² Medizinische Fakultät, Vilnius Universität, Vilnius, Litauen



Methoden

Eine randomisierte, parallele, doppelblinde, prospektive Single-Zentrum Studie durchgeführt in Vilnius Univ.- Klinikum „Santaros klinikos“.



Patienten

Symptomatische Hämorrhoiden 2. oder 3. Grades. Interventionen Computer-Randomisierungssequenz, Anonymisierung der Patienten, des Operateurs und des Chirurgen-Evaluators. Die LHP wurde unter Verwendung eines 1470 nm Diodenlasers mit bis zu 250 J Energie pro 1 Hämorrhoid durchgeführt (A). Das Verfahren wurde umfänglich ausgeführt. MP-Ligationen wurden im Bereich des sichtbaren Hämorrhoiden-Gewebes platziert (B). Standard-EH wurde bis zur Stelle des Hämorrhoiden-Pedikels durchgeführt (C). Follow-up nach einer und 6 Wochen und nach einem Jahr.

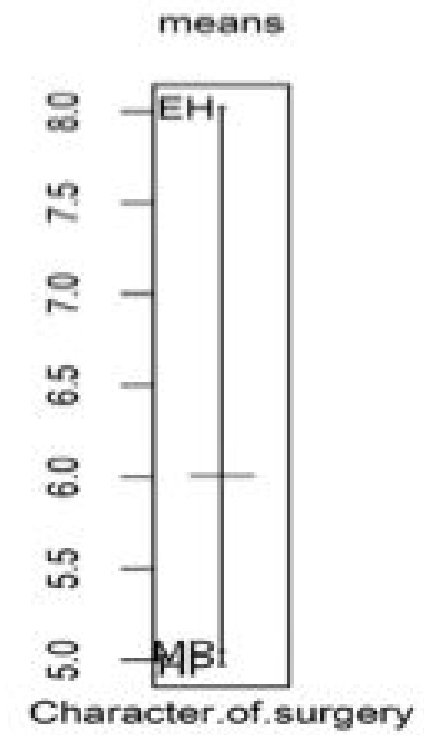
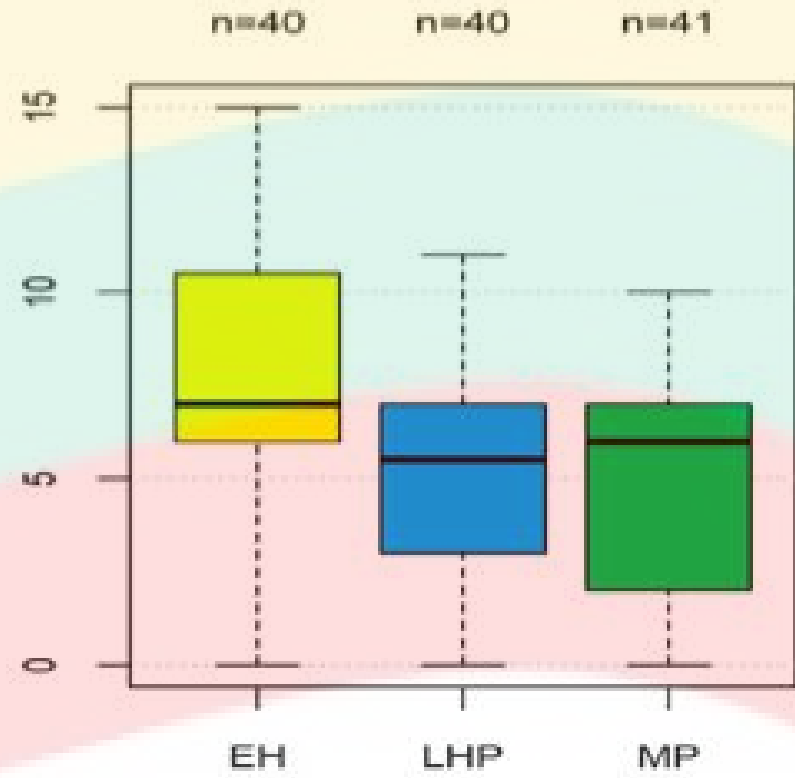
Resultate

Insgesamt 121 Patienten wurden untersucht. Die Gruppen waren präoperativ gleich. LHP dauerte 15 Minuten (SD 5,6), MP 16 Minuten (SD 5,58) und EH dauerte 29 min (SD 10.3).

Die behandlungsbedürftige Rezidiv-Rate betrug 0% nach EH, 10% nach LHP und 22% nach MP, ($p = 0,004$):

EH	LHP	MP
0/40	4/40	9/40
0%	10%	22.5%

LHP und MP waren weniger schmerzhaft als EH ($p < 0,001$):





Patienten nach LHP kehrten nach 15 Tagen zur normalen Aktivität zurück, nach MP nach 22 Tagen und nach EH nach 30 Tagen ($p < 0,001$):

Schlussfolgerungen

Die Laser-Hämorrhoiden Plastik ist eine sichere, minimal invasive Option für Hämorrhoiden, die wirksamer als MP und weniger wirksam als EH ist. Die Patienten bewerten diese Technik besser als die beiden anderen.



Laser hemorrhoidoplasty in the treatment of symptomatic hemorrhoids: a pilot Australian study

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Affiliations + expand

PMID: 35584917 DOI: [10.3393/ac.2022.00164.0023](https://doi.org/10.3393/ac.2022.00164.0023)

Methods: Thirty patients were prospectively enrolled to undergo LH. Postoperative pain, time to return to function, and quality of life (QoL) were determined through the Hemorrhoid Disease Symptom Score and Short Health Scale adapted for hemorrhoidal disease and compared to a historical group of 43 patients who underwent a Milligan-Morgan hemorrhoidectomy by the same surgeon at 3, 6, and 12 months.

Results: The LH group had significantly lower mean predicted pain scores on days 1 and 2 and lower defecation pain scores and lower opioid analgesia use on days 1, 2, 3, and 4. The median time to return to normal function was significantly lower in the LH group (2 days vs. 9 days; $P < 0.001$). Similarly, the median days to return to the workplace was significantly lower in the LH group (6 days vs. 13 days; $P = 0.007$). During long-term follow-up (12 months), hemorrhoid symptoms and all QoL measures were significantly improved, especially among those with grade II to III disease.

Conclusion: This pilot study demonstrates low pain scores with this revived procedure in an Australian population, indicating possible expansion of the therapeutic options available for this common condition. Further head-to-head studies comparing LH to other hemorrhoid therapies are required to further determine the most efficacious therapeutic approach.

Laser hemorrhoidoplasty for hemorrhoidal disease: a systematic review and meta-analysis

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PMID: 36094598 DOI: [10.1007/s10103-022-03643-8](https://doi.org/10.1007/s10103-022-03643-8)

Abstract

Laser hemorrhoidoplasty (LHP) is known as a new minimally invasive and painless procedure for symptomatic hemorrhoids. However, Milligan-Morgan (MM) may offer the best result of long-term cure rates. In this study, we aim to compare the efficacy between LHP and MM for hemorrhoidal disease treatment. Using specific keywords, we comprehensively go through the potential articles on PubMed, Europe PMC, and Google Scholar sources until April 19, 2022. All published studies on LHP and MM hemorrhoidectomy were collected. Statistical analysis was done by using Review Manager 5.4 software. Twelve studies with a total of 1756 patients with hemorrhoid grades II-IV were included for the analysis. Our pooled analysis revealed that LHP was associated with shorter operative time ($p < 0.00001$), shorter length of hospital stay ($p = 0.0005$), lower risk of urinary retention ($p = 0.005$) and anal stenosis ($p = 0.0004$), and lower VAS 24-h post-operative ($p < 0.00001$) when compared with MM. However, LHP and MM did not differ in terms of recurrence rate ($p = 0.70$). LHP was superior to MM procedure in terms of shortening the recovery time and minimizing post-operative complications for patients with hemorrhoidal disease.



Laser hemorrhoidoplasty versus conventional hemorrhoidectomy for grade II/III hemorrhoids: a systematic review and meta-analysis

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Emile John Kwong-Wei Tan ¹

Affiliations + expand

PMID: 36593573 DOI: [10.3393/ac.2022.00598.0085](https://doi.org/10.3393/ac.2022.00598.0085)

Abstract

Purpose: This study compared the short- and long-term clinical outcomes of laser hemorrhoidoplasty (LH) vs. conventional hemorrhoidectomy (CH) in patients with grade II/III hemorrhoids.

Methods: PubMed/Medline and the Cochrane Library were searched for randomized and nonrandomized studies comparing LH against CH in grade II/III hemorrhoids. The primary outcomes included postoperative use of analgesia, postoperative morbidity (bleeding, urinary retention, pain, thrombosis), and time of return to work/daily activities.

Results: Nine studies totaling 661 patients (LH, 336 and CH, 325) were included. The LH group had shorter operative time ($P < 0.001$) and less intraoperative blood loss ($P < 0.001$). Postoperative pain was lower in the LH group, with lower postoperative day 1 (mean difference [MD], -2.09; 95% confidence interval [CI], -3.44 to -0.75; $P = 0.002$) and postoperative day 7 (MD, -3.94; 95% CI, -6.36 to -1.52; $P = 0.001$) visual analogue scores and use of analgesia (risk ratio [RR], 0.59; 95% CI, 0.42-0.81; $P = 0.001$). The risk of postoperative bleeding was also lower in the LH group (RR, 0.18; 95% CI, 0.12- 0.28; $P < 0.001$), with a quicker return to work or daily activities ($P = 0.002$). The 12-month risks of bleeding ($P > 0.999$) and prolapse ($P = 0.240$), and the likelihood of complete resolution at 12 months, were similar ($P = 0.240$).