

Technical Challenges
and Evolving Role of

EMBOLOTHERAPY IN HEMORRHOIDS

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Faculty Disclosures

- **Dr. Bagla:** Consultant—BSCI, CranMed, Medtronic, Terumo; Shareholder—CranMed
- **Dr. Malhotra:** Consultant — Medtronic, Boston Scientific
- **Dr. Salazar:** Consultant/Speaker's Bureau—Medtronic
- **Dr. Vidal:** Consultant—General Electric; Speakers' Bureau—Cook

Program Information

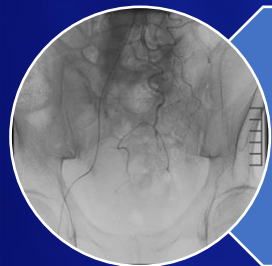
- Provided by North American Center for Continuing Medical Education, LLC, an HMP Global Company
- Supported by an educational grant from Medtronic

Learning Objectives

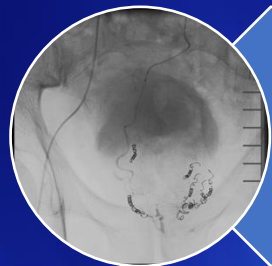
- Understand the disease state and current treatment options
- Interpret data and research to make appropriate treatment decisions for your patients
- Identify when and how to utilize embolotherapy for treatment of hemorrhoids

Embolic Treatment Of Hemorrhoids: Overview on Disease State

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Understand
indications for
embolization



Review techniques
and outcomes



Introduce to your
practice

How to do it?

Evidence

Technique



Should I offer to my patients?

Indications

Failed surgical approach



What else is needed?

RTC

Multidisciplinary collaboration

What Is the Problem?

- National Health Interview Survey: 13% of the US population diagnosed with hemorrhoids in the prior year
- 21% (7.7 million) reported having had surgery

Table 1. Why We Do Not Know the Best Treatment for Hemorrhoids

Poor quality trials (eg, lack of blinding, randomization, complete follow-up evaluation)
Lack of head-to-head comparison for each treatment (RBL, IRC, cryotherapy, surgery)
Treatment success is operator- and experience-dependent
Outcomes not measured in standard fashion
Absence of PROs for range of symptoms (itch, urgency, perianal leakage)
Inadequate sample size
Short-term and variable follow-up evaluation
Different techniques for the same intervention (forceps, suction for banding)
Variable duration of symptoms before treatment
Different grades of hemorrhoids (I, II, III)

RBL = rubber band ligation; IRC = infrared coagulation; PRO = patient-reported outcome.

LeClere FB, et al. *Adv Data*. 1992;(212):1-15. Sandler RS, et al. *Clin Gastroenterol Hepatol*. 2019;17(1):8-15.

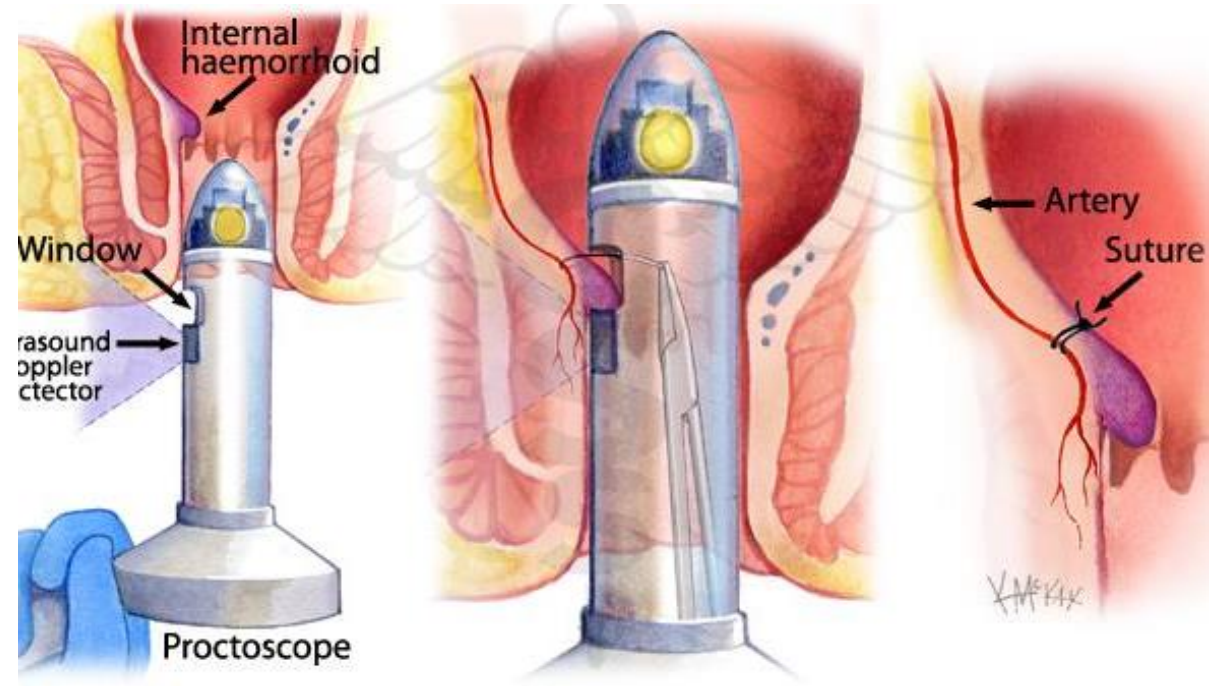
Doppler-Guided Hemorrhoidal Artery Ligation (DGHAL)

- Ligation of SRA terminal branches
 - Flow of hemorrhoidal plexus is reduced



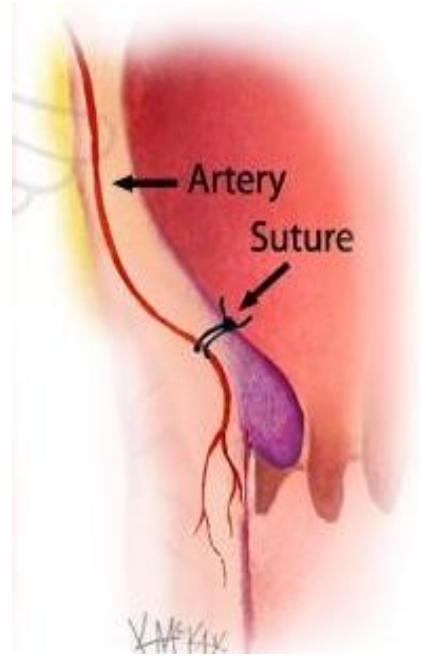
Shrinkage of the hemorrhoidal cushions

Pooled clinical success 82.5%



Hemorrhoids: Emborrhoid Concept

- Prevalent disease
- Women more likely to report hemorrhoids vs men (24% vs 16%)
- To date: we do not know the best treatment



SHORT ORIGINAL ARTICLE / *Cardiovascular imaging*

Embolization of the hemorrhoidal arteries (the emborrhoid technique): A new concept and challenge for interventional radiology

V. Vidal^{a,*}, G. Louis^a, J.M. Bartoli^a, I. Sielezneff^b

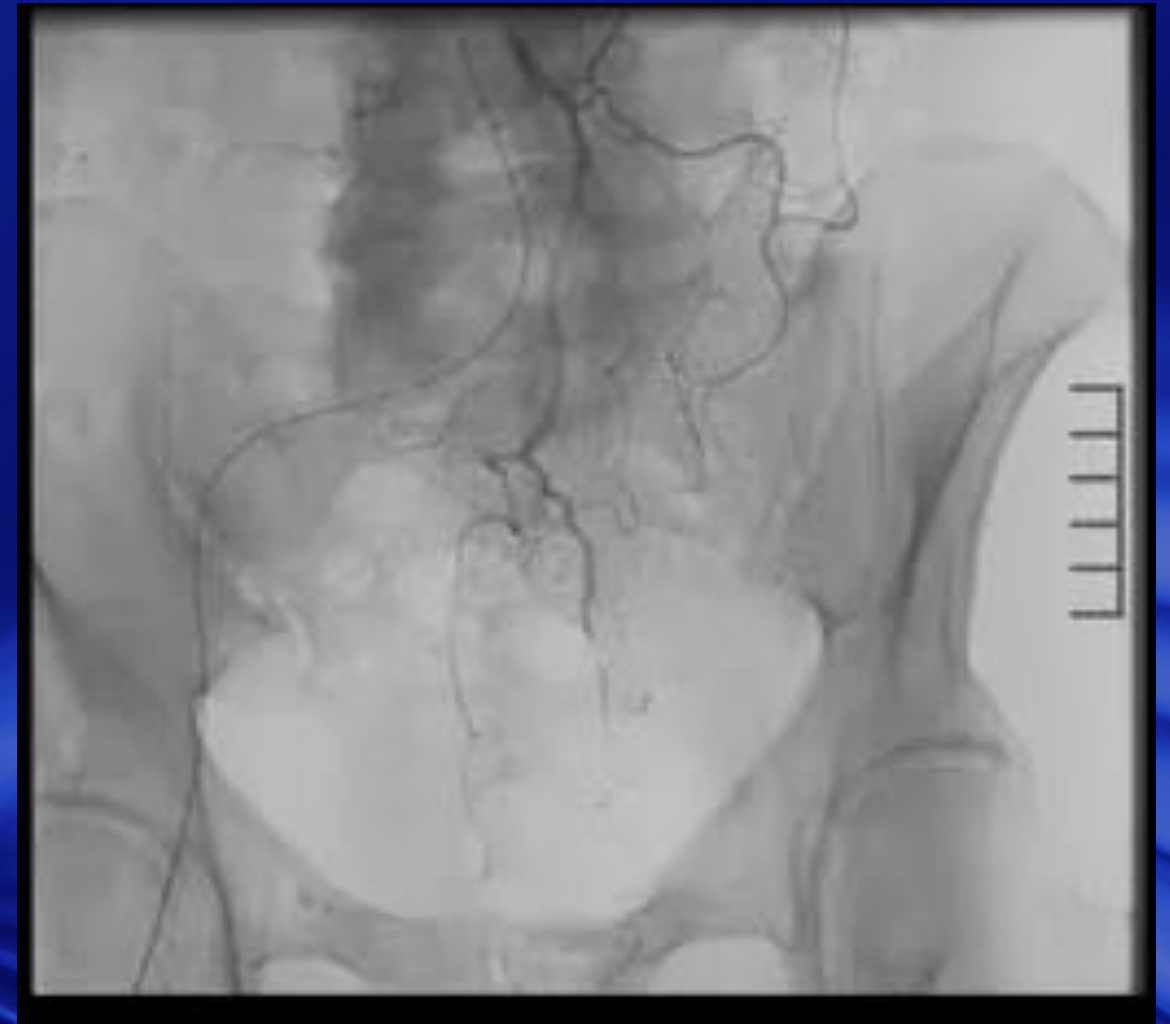
Cardiovasc Intervent Radiol (2015) 38:72–78
DOI 10.1007/s00270-014-1017-8

CLINICAL INVESTIGATION

ARTERIAL INTERVENTIONS

Emborrhoid: A New Concept for the Treatment of Hemorrhoids with Arterial Embolization: The First 14 Cases

V. Vidal · M. Sapoval · Y. Sielezneff ·
V. De Parades · F. Tradi · G. Louis ·
J. M. Bartoli · O. Pellerin



The background is a solid blue color with a dynamic, abstract pattern of flowing, wavy lines that create a sense of movement and depth. The lines are more pronounced in the lower half of the image, where they form a series of parallel, curved ridges and valleys, resembling a stylized landscape or a close-up of a textured surface. In the upper half, the lines are more subtle and spread out, creating a smoother gradient. The overall effect is a modern, high-tech aesthetic.

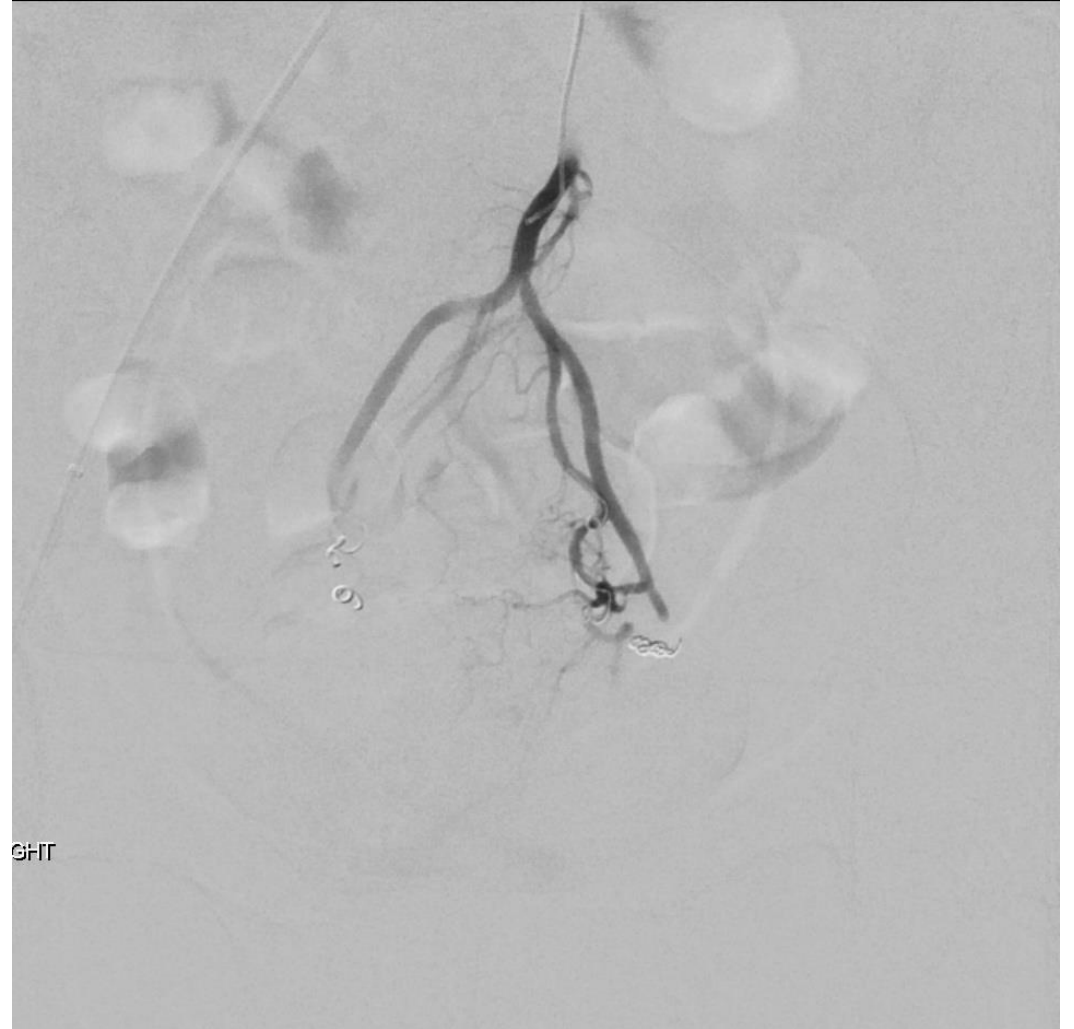
How to Do It

Indication Emergent





Elective



Indications

Symptoms

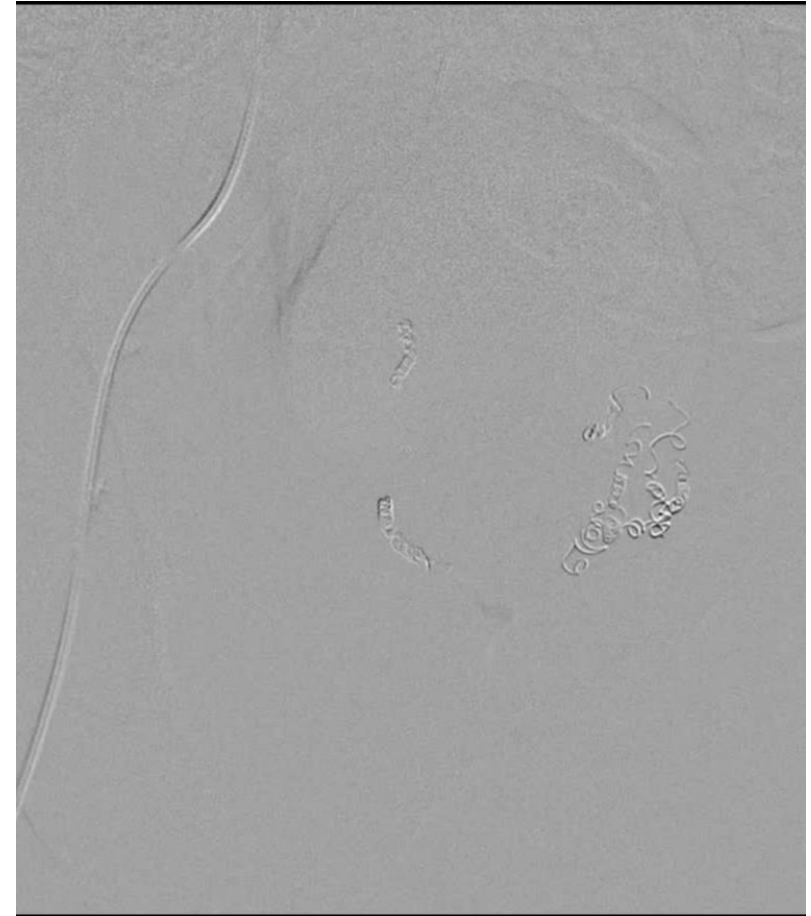
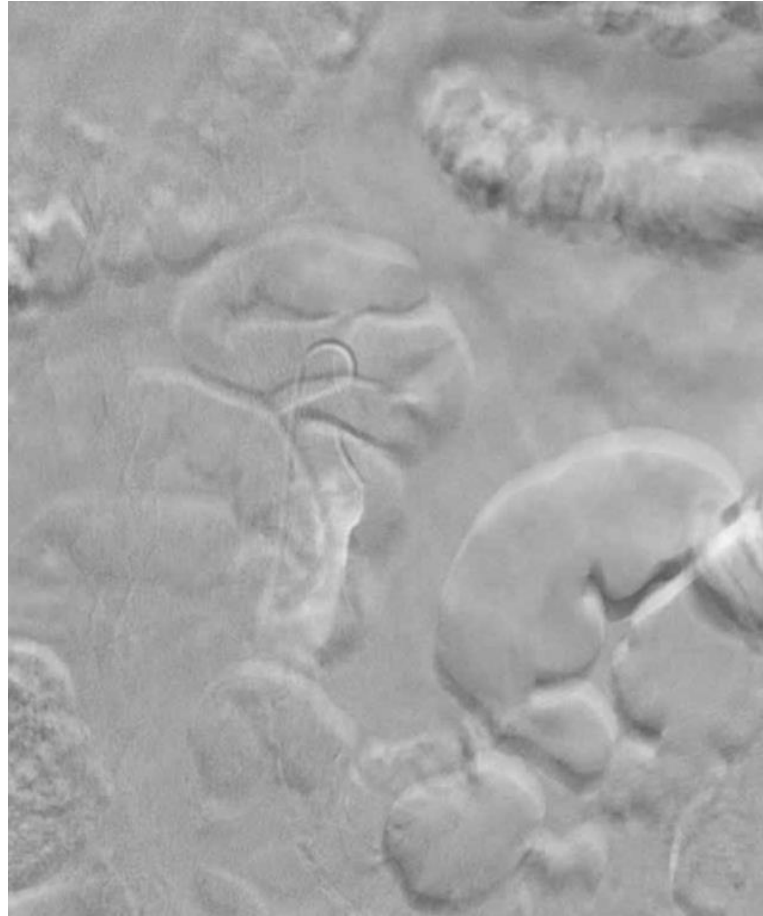
- Pain: 32%
- Bleeding: 68%
- Anemia: 16%

Grades

- I: No protrusion
- II: Protrusion with spontaneous reduction—68%
- III: Protrusion requiring manual reduction—32%
- IV: Protrusion that cannot be reduced

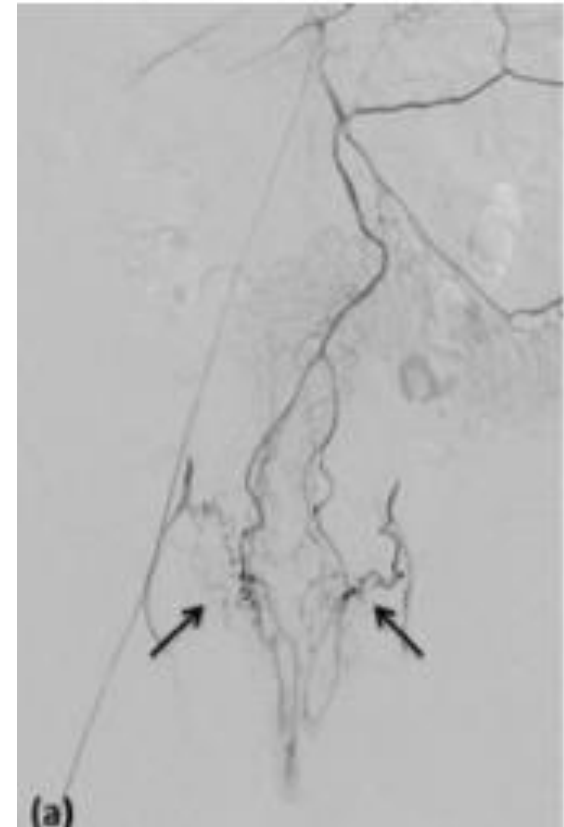
Technique

- IMA catheterization
- Selective microcatheter SRA
- Distal catheterization
- Embolization
- +/- middle rectal artery contribution



Anastomosis of Middle Rectal Artery and SRA

- 25-40% of patients
- Associated with failed clinical improvement
- When anastomoses are located lower, the hemorrhoidal plexus is not correctly devascularized with metallic coils

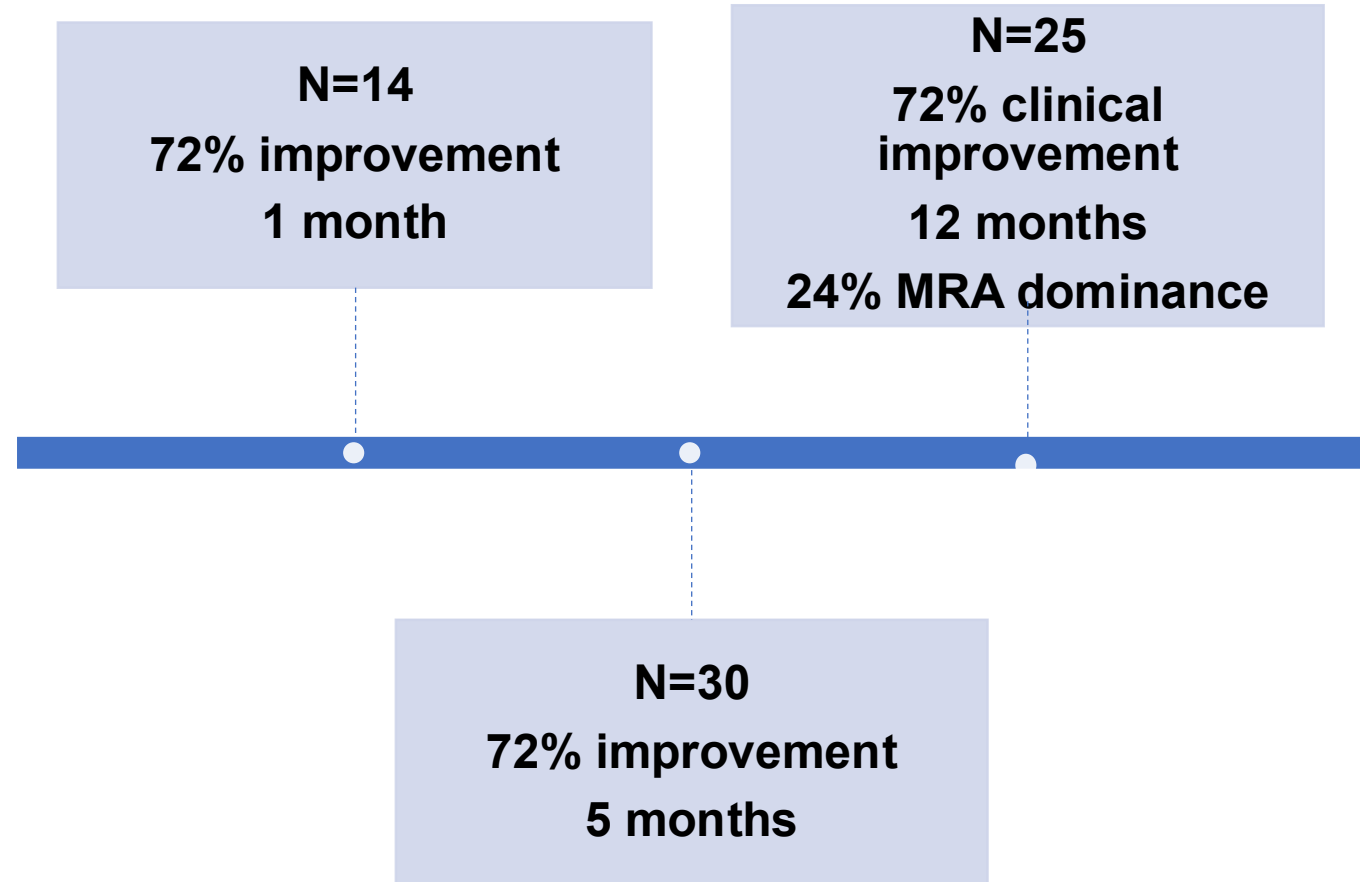


Distal Embolization and Choice of Embolics



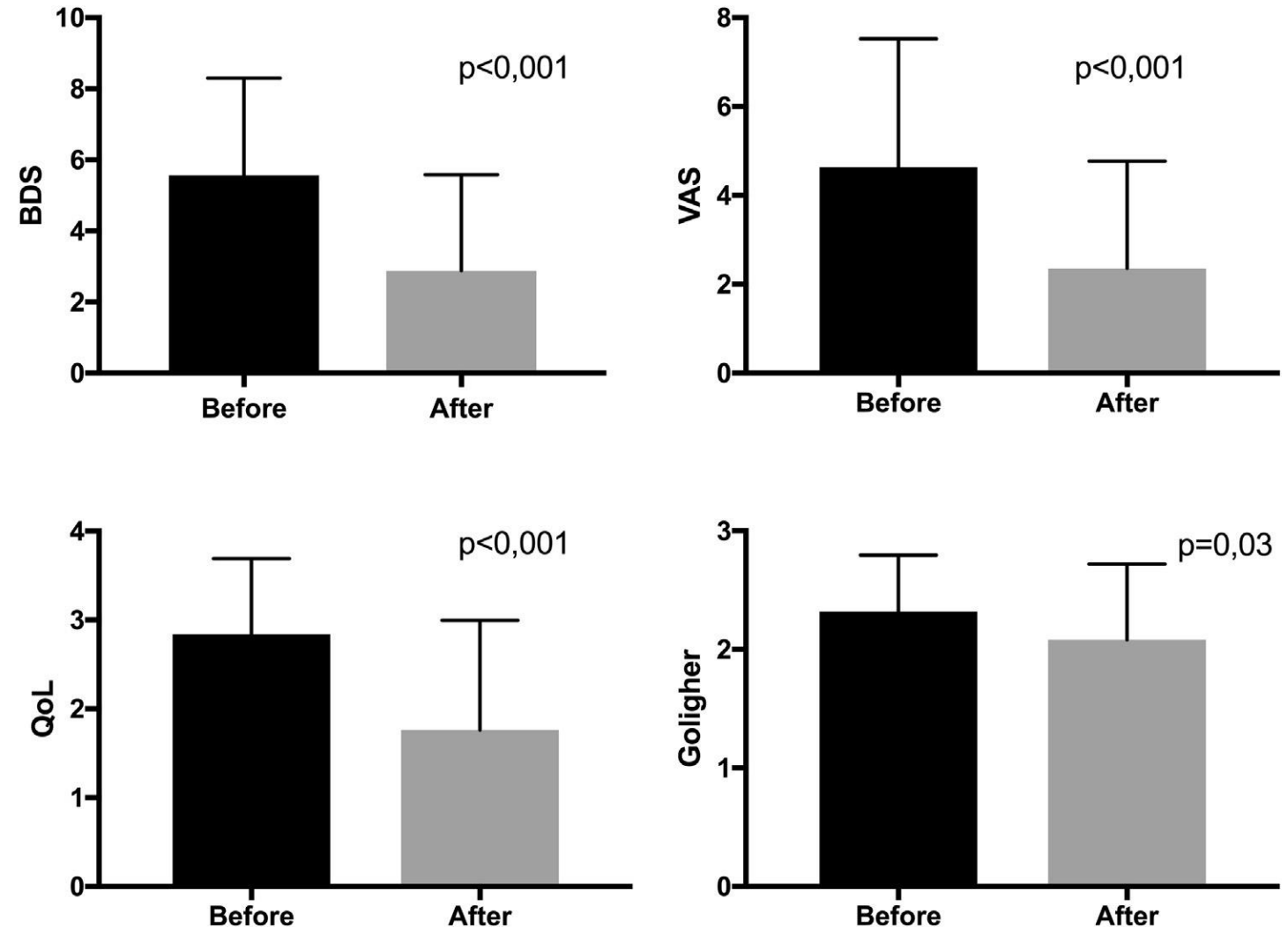
- ☐ Coils alone
- ☐ Coils + particles
- ☐ Particles alone

Evidence for Coils Alone



Post-SRA Embolization

Figure 3. Graphs show changes in bleeding score (BDS), VAS score, quality-of-life (QoL) score, and Goligher prolapse score at 12 months after superior rectal artery embolization. Data are reported as mean; vertical bars indicate SD.



Evidence for Coils + Distal Embolization

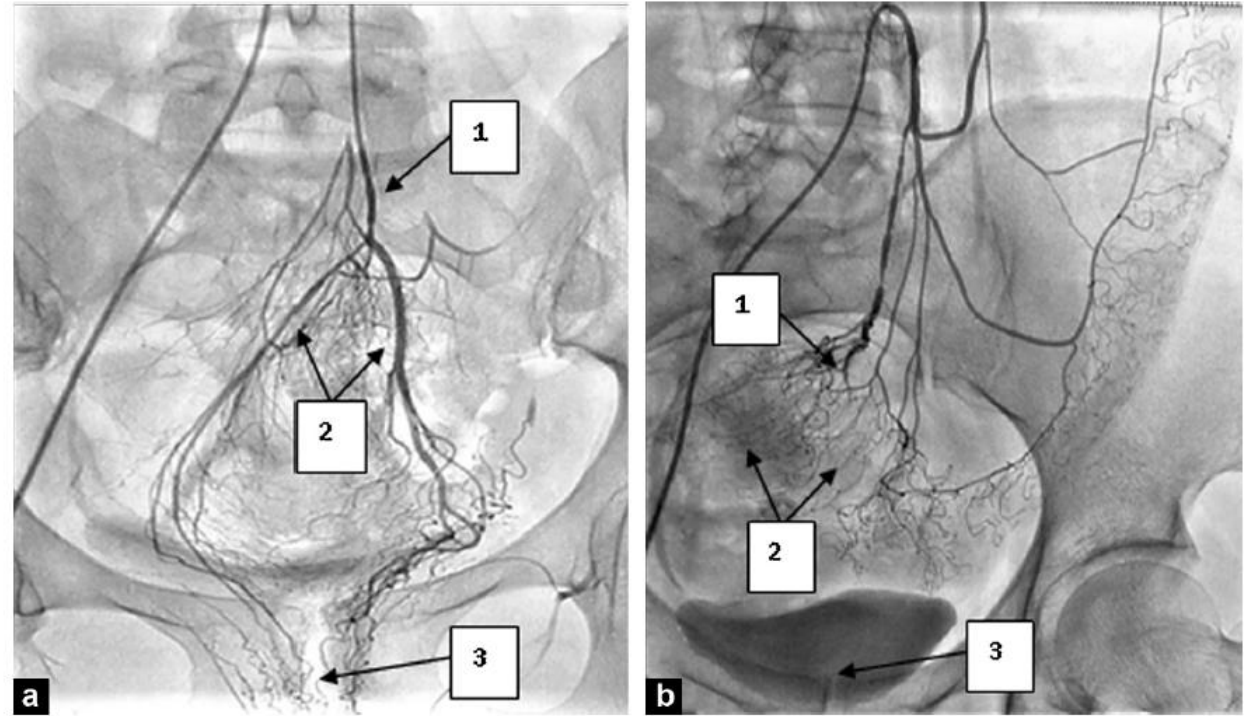
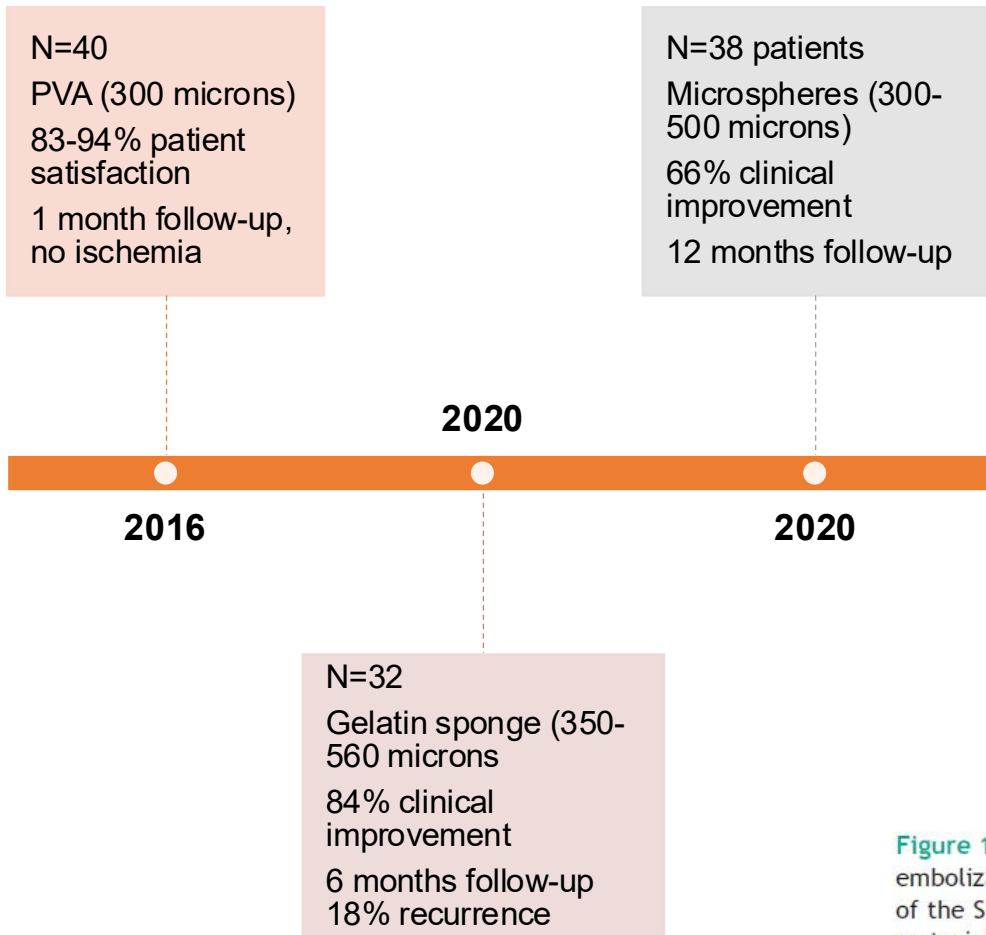
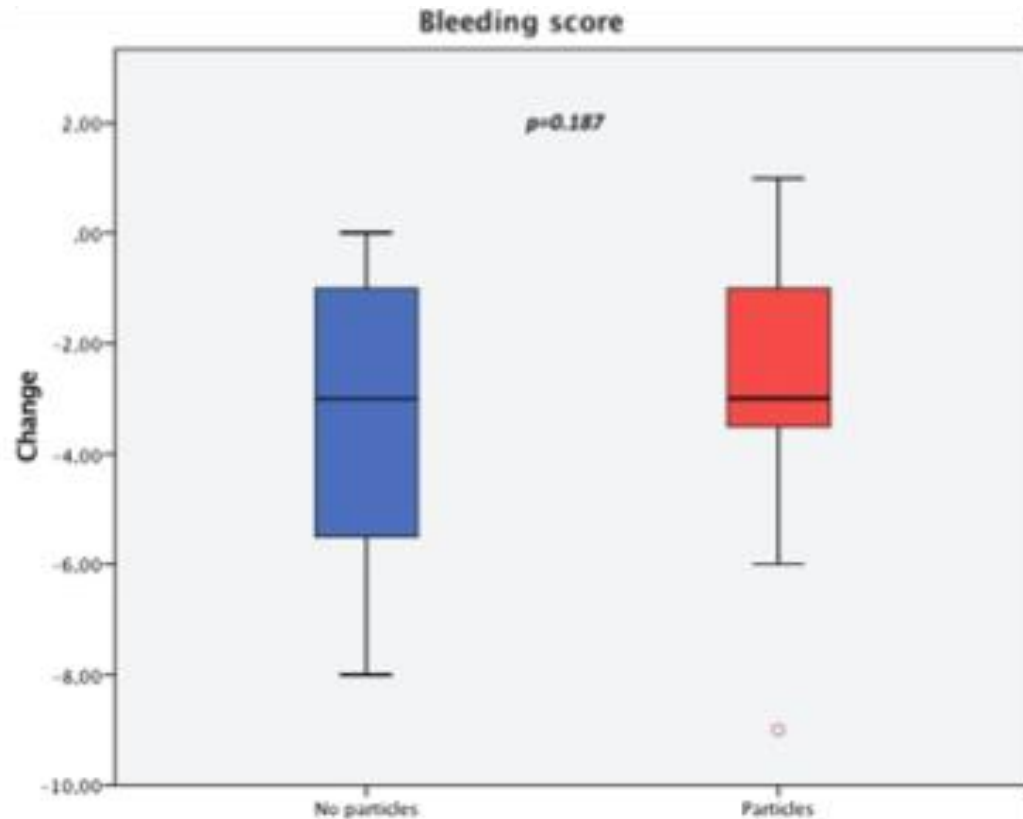


Figure 1. 52-year-old man with internal hemorrhoids that were treated using embolization of superior rectal artery; a: angiogram before embolization: 1. Terminal part of the inferior mesenteric artery; 2. Bifurcation of the superior rectal artery (SRA); 3. Terminal branches of the SRA that feed the internal hemorrhoids; b: angiogram after embolization: 1. Occlusion of the SRA; 2. Absence of iodinated contrast material in the branches of SRA; 3. Absence of contrast in the terminal branches of SRA.

PVA = polyvinyl alcohol.

Zakharchenko A, et al. *Diagn Interv Imaging*. 2016;97(11):1079-1084. Han X, et al. *Tech Coloproctol*. 2021 Jan;25(1):75-80. Moussa N, et al. *Cardiovasc Intervent Radiol*. 2020 Jul;43(7):1062-1069.

Coils Alone vs. Added Particles?



Technical success: 100%
Overall clinical success: 66% (25/38)

Table 3 Change in clinical scores

	Coils only				Coils + particles			
	Before	After	Change	P	Before	After	Change	P
Paris bleeding severity score	7 [6–8]	4.0 [1.75–7]	– 3 [– 6; – 1]	< 0.001	7 [6–8]	4 [3 – 7]	– 3 [– 4; – 1]	< 0.001
Goligher's prolapse score	2 [1.75–3]	2 [2–3]	0 [0–0]	0.331	3 [1–3]	2 [1–3]	0 [0–0]	0.163
QOL	3.5 [3–4]	2 [1–2]	– 2[– 2; – 1]	< 0.001	3 [3–4]	3 [3–4]	– 1[– 2–0]	< 0.001

Median (IQR)

Meta-analysis: 14 Studies

Catheter-Directed Hemorrhoidal Dearterialization Technique for the Management of Hemorrhoids: A Meta-Analysis of the Clinical Evidence

Gregory C. Makris, MD, PhD, FRCR, Narayan Thulasidasan, MBBS, FRCR,
George Malietzis, MBBS, MSc, PhD,
Christos Kontovounisios, MBBS, FRCS, Affan Saibudeen, MBBS,
Raman Uberoi, MBBS, MRCP, FRCR,
Athanasios Diamantopoulos, MBBS, PhD, EBIR, Marc Sapoval, MD, PhD,
and Vincent Vidal, MD, PhD

- Technical success: 97.8%
- Clinical success: 78.9%
- Subgroup analysis: higher rebleeding rate in coils-only group (21.5%) compared with the coils and particles group (10.05%) ($P < .0001$)
- No bowel ischemia/necrosis or anorectal complications were reported

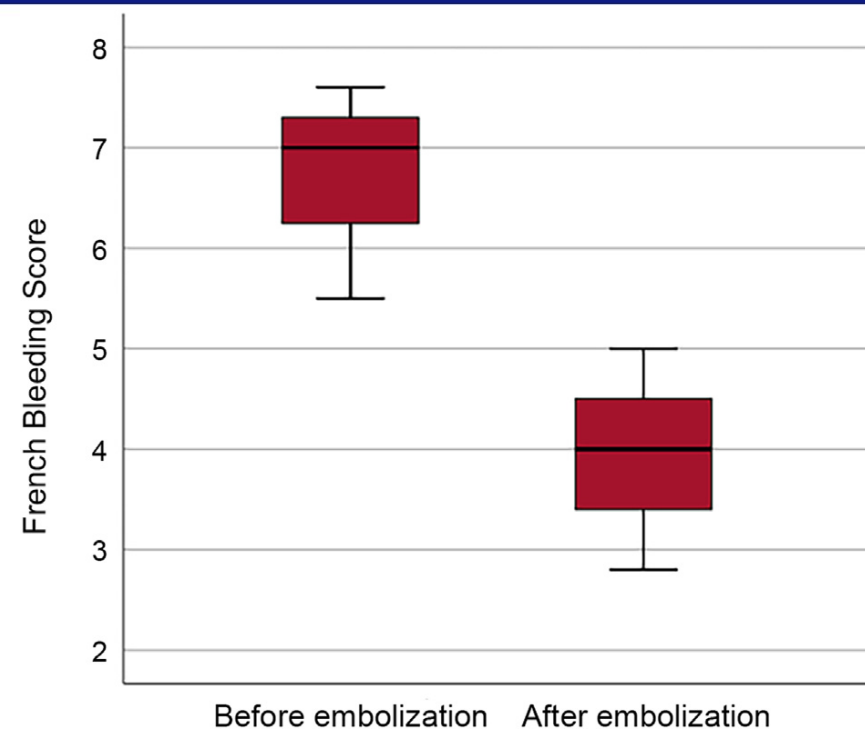
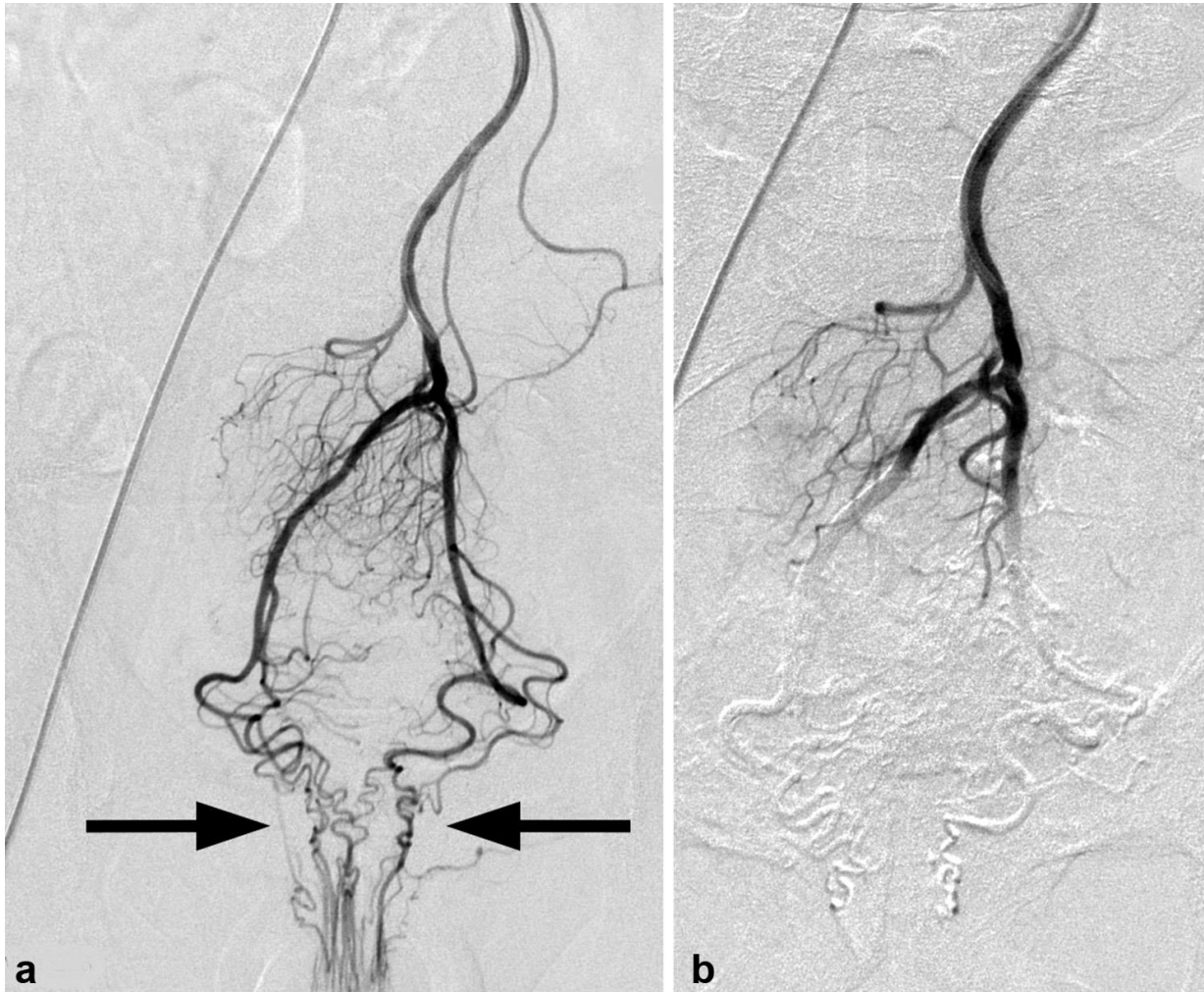


Figure 3. French bleeding score before and after rectal artery embolization.

Particles Alone: 93% Clinical Success



RESEARCH HIGHLIGHTS

- A randomized prospective trial comparing different sizes of embolic microspheres without the use of coils was performed on superior rectal artery embolization (SRAE) for symptomatic hemorrhoids.
- SRAE achieved 93% clinical success in decreasing bleeding, relieving pain, and improving quality of life in 1 year follow up, with no early recurrences.
- Smallest microspheres (500-700 μm) resulted in earliest decrease in bleeding and pain, but largest microspheres (900-1200 μm) showed the greatest improvements at 1 year.
- Post-embolization pain, self-limited superficial rectal and rectosigmoid ulcerations, and late small fibrotic scars were more frequently encountered after treatment by smallest microspheres, suggesting greater ischemia.

Take-Home Points



Why Offer to Your Patients?

- Prevalent dz women >> men
- SRA embolization: 66-93% clinical improvement
- Minimally invasive
- Possibly fewer complications as compared to DGHAL

When to offer to your patients?

- Not surgical candidates
- Refractory surgical treatment
- QoL issues with recurrent bleeding
- Patient preference

What Is Needed?

A randomized comparative evaluation with DGHAL would help to define the role of the emborrhoid technique as a minimally invasive therapeutic alternative.

In the meantime

- Registry of cases to evaluate efficacy and different outcomes
- Start collaborating with other specialists

Emborrhoid: Analyzing Research and Data

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Aix-Marseille University
Director, Interventional Radiology,
Department of Medical Imaging,
University Hospital Timone
Marseille, France

Emboorrhoid

- Tailored approach
- Problems
 - Patient selection/evaluation
 - Patient treatment
 - Patient follow-up/evaluation
- Definition of clinical success?

Clinical Success

- Gold standard reference



Haemorrhoidal artery ligation versus rubber band ligation for the management of symptomatic second-degree and third-degree haemorrhoids (HubBL): a multicentre, open-label, randomised controlled trial

Discussion

Recurrence 12 months after HAL was significantly lower than after RBL. Haemorrhoidal disease is a **benign** condition with treatment primarily aimed at addressing symptoms. In the absence of a **validated symptom scoring system**, we felt the most important determinant of treatment success was **patient-reported outcome of improvement** and the need to avoid additional procedures.

Clinical Success

- 12 months post-intervention
 - At the moment, do you feel your symptoms from your hemorrhoids are
 1. Cured or improved compared with before treatment or
 2. Unchanged or worse compared before treatment

Clinical Success

- Secondary endpoint
 - Symptom severity
 - Hemorrhoid severity score (HSS)

HSS

The following questions deal with haemorrhoids. Your answers should reflect the latest 2-week period

- | | | | | | |
|---|--|-----------------------------------|--|---|---|
| 1 | How often do you have pain from the haemorrhoids? | ☐
Never | ☐
Less than
once a week | ☐
1–6 times
weekly | ☐
Every day
(always) |
| 2 | How often do you have itching or discomfort of the anus? | ☐
Never | ☐
Less than
once a week | ☐
1–6 times
weekly | ☐
Every day
(always) |
| 3 | How often do you have bleeding when passing a motion? | ☐
Never | ☐
Less than
once a week | ☐
1–6 times
weekly | ☐
Every day
(always) |
| 4 | How often do you soil your underclothes (soiling from the anus)? | ☐
Never | ☐
Less than
once a week | ☐
1–6 times
weekly | ☐
Every day
(always) |
| 5 | How often do you reduce a prolapsing haemorrhoid with your hand when passing a motion? | ☐
Never | ☐
Less than
once a week | ☐
1–6 times
weekly | ☐
Every day
(always) |

Patient 1

- 35 yo/stage II
- No pain, no discomfort, but **anemia**

5

The following questions deal with haemorrhoids. Your answers should reflect the latest 2-week period

1	How often do you have pain from the haemorrhoids?	☒ Never	☐ Less than once a week	☐ 1-6 times weekly	☐ Every day (always)
2	How often do you have itching or discomfort of the anus?	☒ Never	☐ Less than once a week	☐ 1-6 times weekly	☐ Every day (always)
3	How often do you have bleeding when passing a motion?	☐ Never	☐ Less than once a week	☐ 1-6 times weekly	☒ Every day (always)
4	How often do you soil your underclothes (soiling from the anus)?	☐ Never	☐ Less than once a week	☒ 1-6 times weekly	☐ Every day (always)
5	How often do you reduce a prolapsing haemorrhoid with your hand when passing a motion?	☒ Never	☐ Less than once a week	☐ 1-6 times weekly	☐ Every day (always)

Patient 2

- 65 yo/stage III
- Discomfort, prolapse, some bleeding (2 y)

5

The following questions deal with haemorrhoids. Your answers should reflect the latest 2-week period

1	How often do you have pain from the haemorrhoids?	☐ Never	☒ Less than once a week	☐ 1-6 times weekly	☐ Every day (always)
2	How often do you have itching or discomfort of the anus?	☐ Never	☒ Less than once a week	☐ 1-6 times weekly	☐ Every day (always)
3	How often do you have bleeding when passing a motion?	☐ Never	☒ Less than once a week	☐ 1-6 times weekly	☐ Every day (always)
4	How often do you soil your underclothes (soiling from the anus)?	☐ Never	☒ Less than once a week	☐ 1-6 times weekly	☐ Every day (always)
5	How often do you reduce a prolapsing haemorrhoid with your hand when passing a motion?	☐ Never	☒ Less than once a week	☐ 1-6 times weekly	☐ Every day (always)

Case Studies

- Patient 1: 35 yo/stage II; no pain, no discomfort, but **anemia**
- Patient 2: 65 yo/stage III; discomfort, prolapse, some bleeding (2 y)



Outcomes

CLINICAL INVESTIGATION

EMBOLISATION (ARTERIAL)

Mid-Term Results of Superior Rectal Artery and Coils for Hemorrhoidal Embolization with Particles Bleeding

N. Moussa^{1,2} • B. Bonnet^{1,2} • H. Pereira^{5,6} • L. Pechmajou^{1,2} • O. Pellerin^{1,2,3} • A. Abed^{1,2} • C. del Giudice^{1,2} • C. Dean^{1,2} • D. Bouda⁴ • V. de Parades⁷ • N. Fathallah⁷ • M. Sapoval^{1,2,3}

- De Parades V
- Moussa N
- Sapoval M

Table 4 Paris bleeding severity score (maximum worst since treatment 9)

Frequency	Never	0
	< 1 per day or per saddle	1
	≥ 1 per day or per saddle	2
Bleeding	Never	0
	At wiping ± in underwear	1
	In the toilet	2
Anemia	Never	0
	Iron deficiency without anemia	1
	Without transfusion	2
	With transfusion	3
Severity	Little or no discomfort	0
	Moderate discomfort	1
	Frank or permanent discomfort	2

Clinical Success

- Secondary endpoint
 - Symptom severity
 - HSS
 - Incontinence inventories (Vaizey score)
 - Pain (VAS)
 - Surgical complications
 - Need for further treatment
 - Persistent symptoms at 6 weeks
 - Health-state utility (EQ-5D)

Clinical Success

- Clinical experience indicates that the physical appearance of the anal cushions post-treatment correlates poorly with patients' symptoms
- HSS: no difference between the two interventions at any time point; many patients are not concerned with a certain level of persistent symptoms related to hemorrhoids

Emboorrhoid Results

- Does it work?
 - On which symptoms?
 - Bleeding
 - Pain
 - Prolapses
 - Level of evidence

Emboorhoid Results

- Vidal V, et al. *Cardiovasc Intervent Radiol*. 2015;38(1):72-78
- Zakharchenko A, et al. *Diagn Interv Imaging*. 2016;97(11):1079-1084
- Moussa N, et al. *Colorectal Dis*. 2017;19(2):194-199
- Farouk T, et al. *J Vasc Interv Radiol*. 2018;29(6):884-892
- Sun X, et al. *Clin Radiol*. 2018;73(11):985.e1-985.e6
- Giurazza F, et al. *Radiol Med*. 2020;126(10):1008-1011
- Moussa N, et al. *Cardiovasc Intervent Radiol*. 2020;43(7):1062-1069
- Abd El Tawab KA, et al. *Arab J Intervent Radiol*. 2020;4:27-31
- Han X, et al. *Tech Coloproctol*. 2021;25(1):75-80
- Moggia E, et al. *Rev Recent Clin Trials*. 2021;16(1):81-86

Emboorrhoid Results

Study	Type	Number points	Follow-up
Vidal V, et al. (2015)	Retro	14	2-13 m (192 d)
Zakharchenko A, et al. (2016)	Retro	40	1 m
Moussa N, et al. (2017)	Retro	16 (30)	3-9 m (150 d)
Farouk T, et al. (2018)	Prosp	25	12 m
Sun X, et al. (2018)	Retro	23	6 m
Giurazza F, et al. (2020)	Retro	5	3 m
Moussa N, et al. (2020)	Retro	45	12 m
Abd El Tawab KA, et al. (2020)	Retro	33	12 m
Han X, et al. (2021)	Retro	32	12 m
Moggia E, et al. (2021)	Retro	16	12 m
	Total	249	

Emboorrhoid Results

Study	Stage	Techn succ	Clin succ	Agent	ARM
Vidal, et al. (2015)	II-III	100%	70%	Coils	No
Zakharchenko, et al. (2016)	II	100%	83-94%	C+PVA	No
Moussa N, et al. (2017)	II	93%	72%	Coils	No
Farouk T, et al. (2018)	II-III	96%	72%	Coils	No
Sun X, et al. (2018)	II-III	100%	91%	Coils	Yes
Giurazza F, et al. (2020)	III	100%	80%	Coils	Yes
Moussa N, et al. (2020)	II-III	100%	68%	C+spher	Yes
Abd El Tawab KA, et al. (2020)	II-III	100%	96%	Spher	Yes
Han X, et al. (2021)	II-III	100%	84%	C+spher	No
Moggia E, et al. (2021)	II-III	93%	87.5%	Coils	No
Average		> 93%	> 70%	??????????	

C = coils; spher = microspheres.

Others

Study	
Vidal, et al. (2015)	• No major complications • HSS • Cushions' size • Pain (VAS) • Hemorrhoidal Doppler • Sphincter contractility • Poorly comparable
Zakharchenko, et al. (2016)	
Moussa N, et al. (2017)	
Farouk T, et al. (2018)	
Sun X, et al. (2018)	
Giurazza F, et al. (2020)	
Moussa N, et al. (2020)	
Abd El Tawab KA, et al. (2020)	
Han X, et al. (2021)	
Moggia E, et al. (2021)	

Others

- Farouk T, et al. (2018)
 - Prospective
 - 1-year follow-up
 - Bleeding score
 - EVA
 - QoL

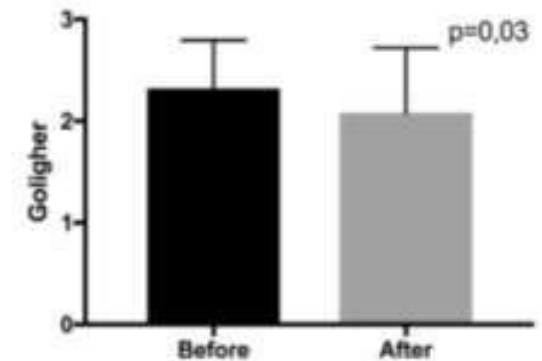
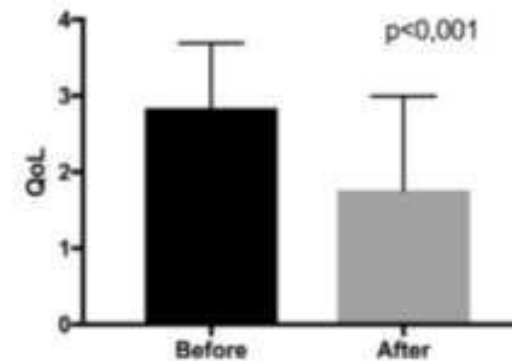
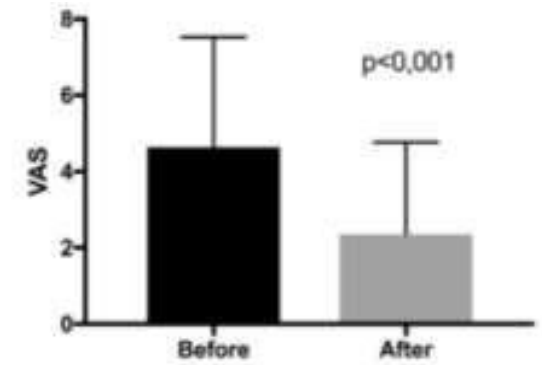
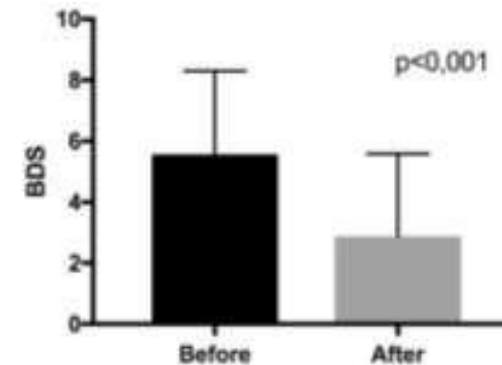
EVA = Visual Analog Scale for Pain.

Farouk T, et al. *J Vasc Interv Radiol*. 2018;29(6):884-892.

1-Year Follow-Up

Clinical success: 72% (18/25)

	Before	12 months FU	95% Confidence Interval	P value
Bleed S (ScS)	5.5 (±2.7)	2.8 (±2.7)	-2.7 (-3.7 ; -1.6)	0.00001
EVA	4.6 (±2.8)	2.3 (±2.4)	-2.3 (-3.2 ; -1,2)	0.00007
QoL	2.8 (±0.85)	1.7 (±1,23)	-1.1 (-1.5 ; -0,6)	0.00006
Prolapse	2.3 (±0.48)	2.0 (±0.64)	- 0.3 (0.4 ; -0,02)	0.03



2-Year Follow-Up

- **Clinical success:** 68% (17/25)
- Bleeding score: 5.5 → 2.3

	Before	12 months FU	24 months FU	P value
Bleed S (ScS)	5.5 (±2.7)	2.8 (±2.7)	2.3	0.00001
EVA	4.6 (±2.8)	2.3 (±2.4)	2.3	0.00007
QdV	2.8 (±0.85)	1.7 (±1.23)	1.7	0.00006
Prolapsus	2.3 (±0.48)	2.0 (±0.64)	2.0	0.03

Superior Rectal Artery Embolization with Tris-Acryl Gelatin Microspheres: A Randomized Comparison of Particle Size

Murat Bülent Küçükay, MD, and Fahrettin Küçükay, MD

ABSTRACT

Purpose: To evaluate the safety and efficacy of superior rectal artery embolization (SRAE) with different-sized tris-acryl gelatin microspheres in symptomatic hemorrhoidal disease (HD).

Materials and Methods: Forty-two patients (male, 30; female, 12; median age, 45 years) with symptomatic HD (2 grade I, 8 grade II, 17 grade III, and 15 grade IV) were divided into 3 experimental arms (500–700 μm , 700–900 μm , and 900–1,200 μm groups; each had 14 patients) in a prospective randomized style to perform SRAE. Follow-up was performed by rectoscopy, clinical examination, and questionnaires. The primary outcome measure was the clinical success rate at 12 months. Secondary outcome measures were technical success rate, recurrence rate, procedure-related mortality, procedure-related complications, and any outcome changes between particle sizes.

Results: No procedure-related deaths or major morbidities were observed. There was a 54% minor complication rate ($n = 23/42$) in the treated zone: 45% sustained small superficial ulcerations ($n = 19/42$), 7% small rectosigmoid junction ulcerations ($n = 3/42$), and 2% small fibrotic scar tissue ($n = 1/42$). The clinical success rate was 93%. Of the groups, the best French bleeding score decrease was obtained in the 900–1,200 μm group. There were improvements in the quality of life score and visual analogue scale score after the SRAE procedure, although not in the Goligher score. No recurrent disease was observed.

Conclusions: SRAE with tris-acryl gelatin microspheres for symptomatic HD is a safe and efficient treatment, with results favoring the use of larger microspheres.

Interventional Radiology Should be Competitive—If Haemorrhoids are Arteriovenous Connections, It is Now the Time for Liquids? Commentary on “Superior Rectal Artery Embolisation for Haemorrhoids: What do We Know so Far?”

Alberto Alonso-Burgos¹ 

Outpatient Transradial Emborrhoid Technique: A Pilot Study

Roberto Iezzi^{1,2}  • Paola Campenni³ • Alessandro Posa¹ • Angelo Parello³ • Elena Rodolfino¹ • Angelo Alessandro Marra³ • Carlo Ratto^{2,3} • Riccardo Manfredi^{1,2}

Superior Rectal Artery Embolization for Symptomatic Grades 2 and 3 Hemorrhoidal Disease: 6-Month Follow-up among 43 Patients

Tommaso Stecca, MD, Fabrizio Farneti, MD, Giovanni Balestriero, MD, Mario Barban, MD, Ezio Caratozzolo, MD, Silvia Zilio, MD, and Marco Massani, MD

ABSTRACT

Purpose: To assess the technical and clinical success rates of superior rectal artery embolization in the treatment of symptomatic Grades 2 and 3 hemorrhoidal disease.

Materials and Methods: Since March 2019, 43 patients (24 men and 19 women; mean age, 52 years [18–77 years]) with symptomatic hemorrhoidal disease have been treated and completed the 6-month follow-up with anamnestic questionnaire and disease scores, including French bleeding, Goligher prolapse, visual analog scale for pain, and quality of life. Clinical success was assessed at 7 days, 1 month, and 6 months of follow-up by updating the clinical scores. Statistical analysis was performed using SPSS 25.0.

Results: In all, 25 patients had Grade 2 prolapse and 18 patients had Grade 3 prolapse, with 96% and 77%, respectively, having bleeding as a symptom. All patients were discharged within 24 hours. The reduction in the French bleeding score (global and single entity) in Grade 3 prolapse was statistically significant ($P = .001$). Improvement in the quality of life was significant in both groups ($P < .05$). No serious complications were registered.

Conclusions: Hemorrhoidal embolization was a safe and effective technique in the treatment of symptomatic hemorrhoidal disease with minimal hospitalization, pain, and disruption of daily activities. It can be offered to patients unwilling to undergo a surgical procedure but can also be indicated in the emergency setting for patients on anticoagulant therapy or those unfit for surgery.

Superior Rectal Artery Embolisation for Haemorrhoids: What Do We Know So Far?

Mert Sirakaya¹  · Aleem O'Balogun² · Rahil H. Kassamali³

REVIEW ARTICLE

Catheter-Directed Hemorrhoidal Dearterialization Technique for the Management of Hemorrhoids: A Meta-Analysis of the Clinical Evidence

Gregory C. Makris, MD, PhD, FRCR, Narayan Thulasidasan, MBBS, FRCR,
George Malietzis, MBBS, MSc, PhD,
Christos Kontovounisios, MBBS, FRCS, Affan Saibudeen, MBBS,
Raman Uberoi, MBBS, MRCP, FRCR,
Athanasios Diamantopoulos, MBBS, PhD, EBIR, Marc Sapoval, MD, PhD,
and Vincent Vidal, MD, PhD

Embolization of Hemorrhoidal Arteries: A Novel Endovascular Therapy Option for the Treatment of Hemorrhoidal Disease

Hämorrhoidenembolisation: Eine neue minimalinvasive endovaskuläre Therapieoption bei Hämorrhoidalleiden

Authors

Ludger Feyen¹ , Patrick Freyhardt^{2, 1}, Peter Schott¹, Christoph Wullstein³, Alexandra Dimitriou-Zarra³, Marcus Katoh¹

Review

Hemorrhoid embolization: A review of current evidences

Reza Talaie^{a,*, 1}, Pooya Torkian^{a, 1}, Arash Dooghaie Moghadam^b, Farouk Tradi^c, Vincent Vidal^c, Marc Sapoval^{d, e}, Jafar Golzarian^a

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^c Interventional Radiology Section, Department of Medical Imaging, University Hospital Timone, AP-HM, 13005 Marseille, France

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Sigmoidal Stenosis Treated by Dilatation

DDS-SIRC COOPERATIVE CONFERENCES

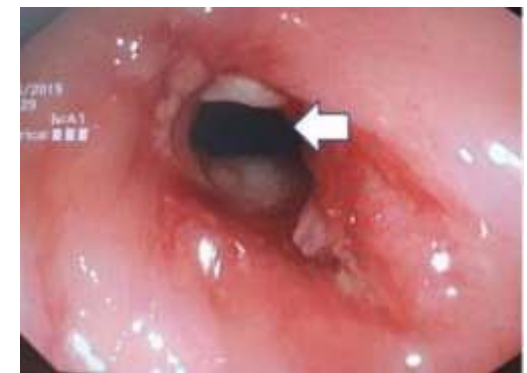
Annoyed with Haemorrhoids? Risks of the Emborrhoid Technique

Chiara Eberspacher¹ · Fabrizio Ficuccilli² · Laura Tessieri² · Vito D'Andrea¹ · Augusto Lauro¹ · Lisa Fralleone¹ · Domenico Mascagni¹

Abstract

Haemorrhoids, a common ailment afflicting mostly Western patients, can produce bothersome symptoms, in particular pain, pruritus, and bleeding. There is a wide choice of surgical treatment options available for haemorrhoids in patients that cannot be treated with medical therapy, such as those that are prolapsed. Many patients refuse surgery due to the fear of potential complications; to overcome this obstacle, novel alternative techniques have been developed in recent years that are focussed on ligation or occlusion of haemorrhoidal arterial blood flow. We describe a patient who developed recto-sigmoidal ischaemia after embolization of the haemorrhoidal arteries, known as the “emborrhoid” technique, with persistence of rectal bleeding and progressive rectal stenosis.

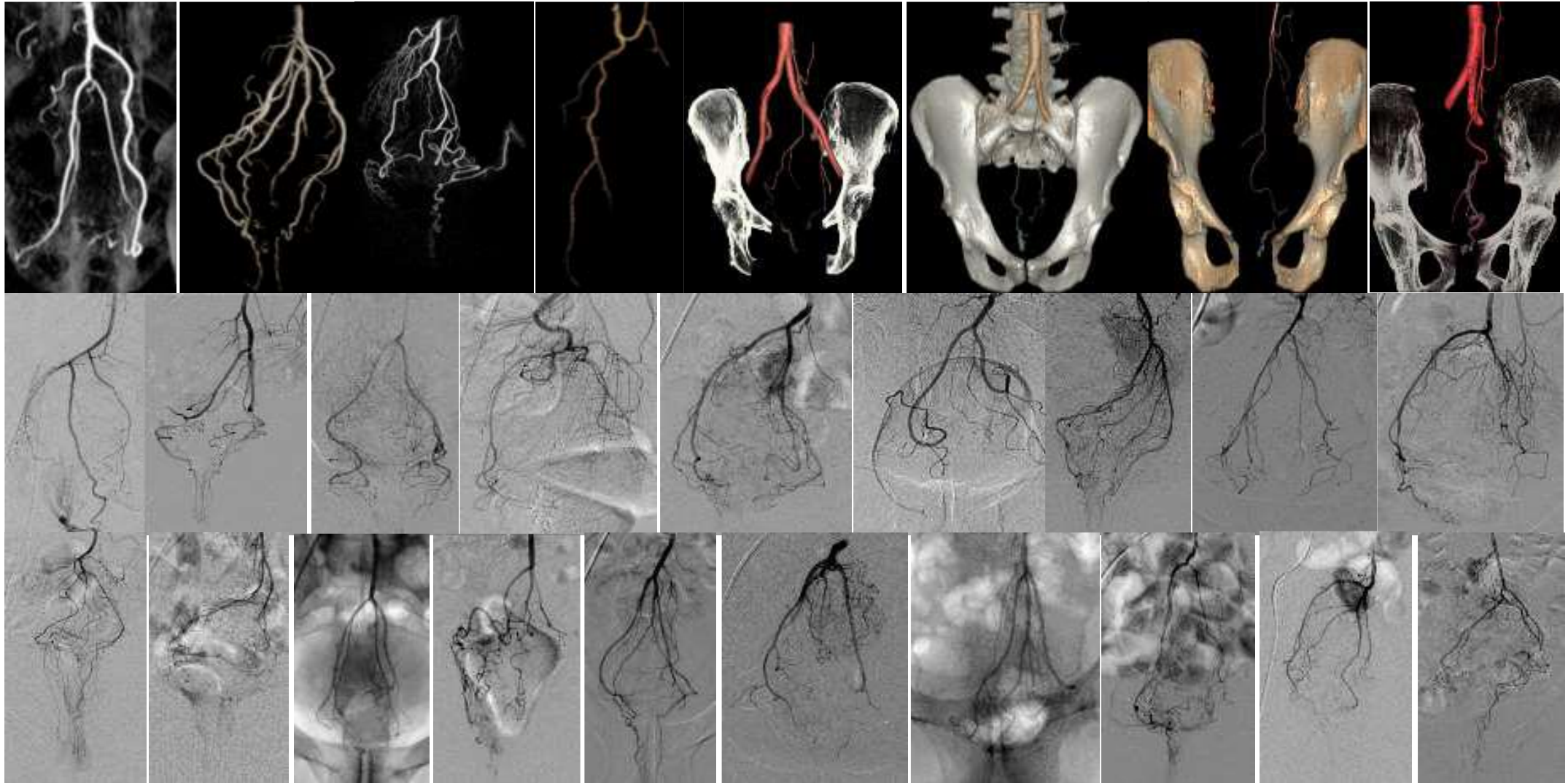
- Which target? Tip of the catheter?
- Which size of particles?
- Which endpoint?

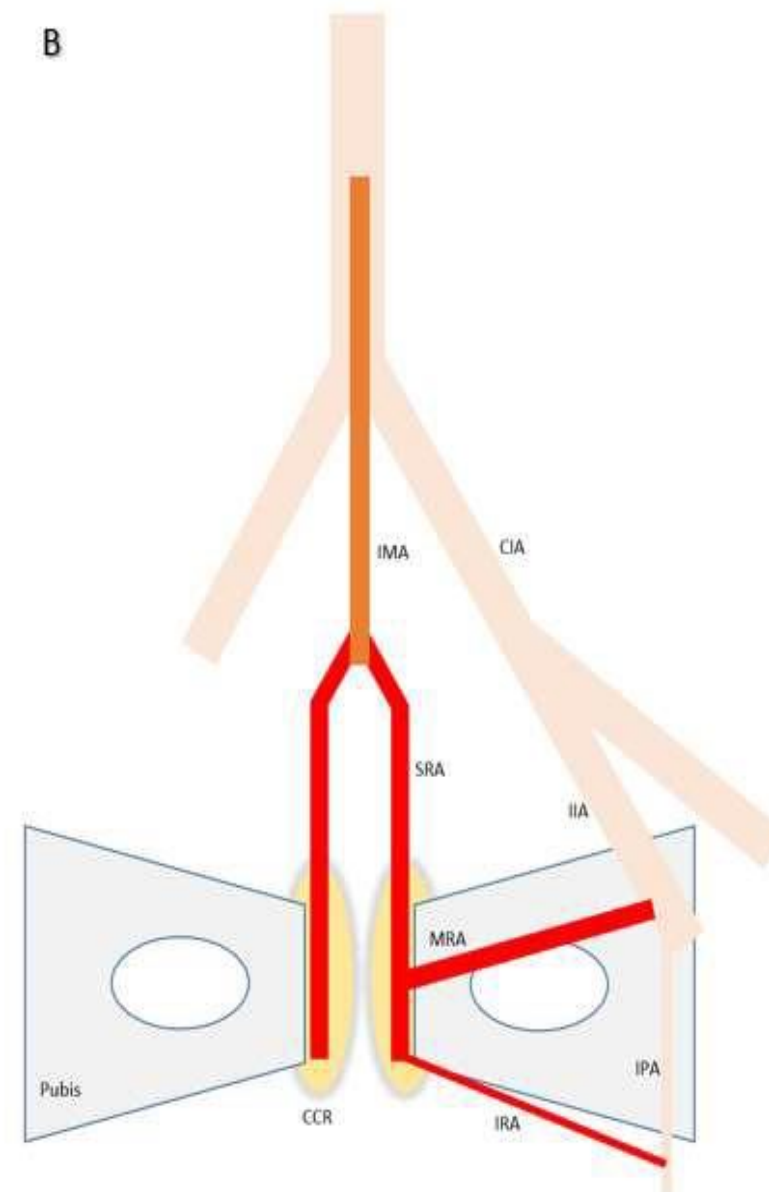
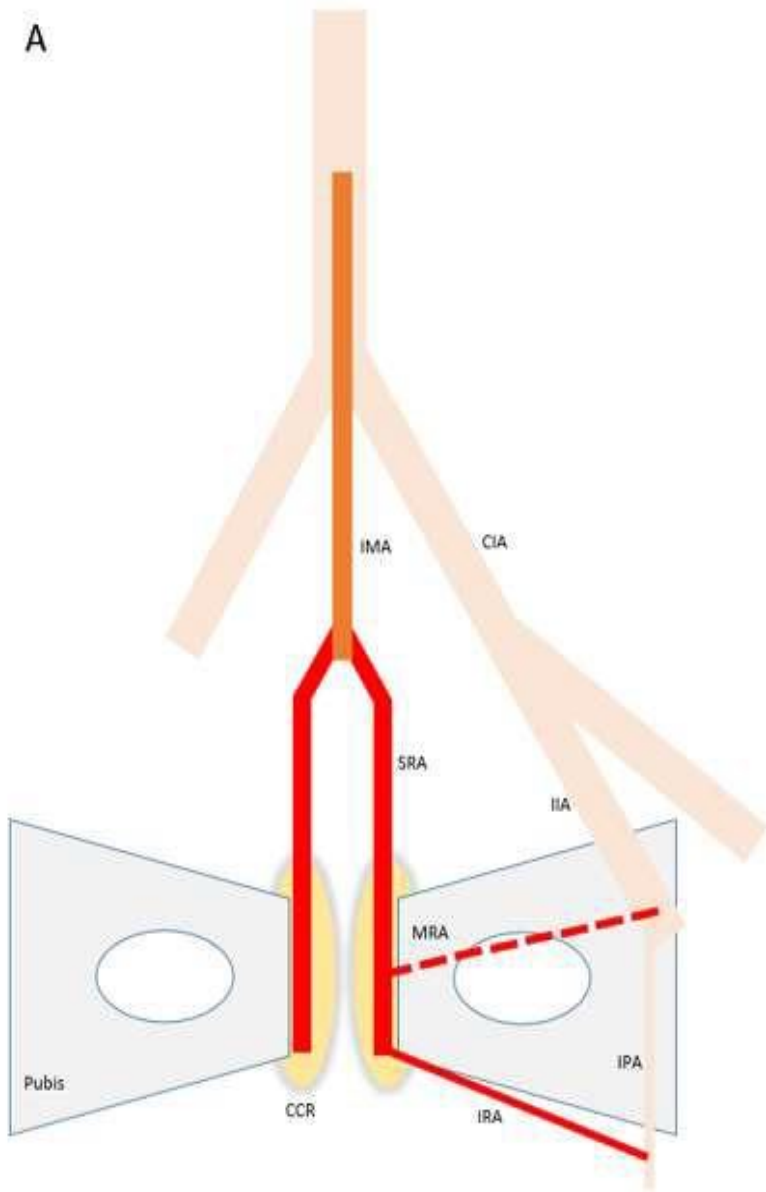


Non-responder/Insufficient Responder/Relapser

- Why emborrhoid failed:
 - Bad indication?
 - Bad technique?

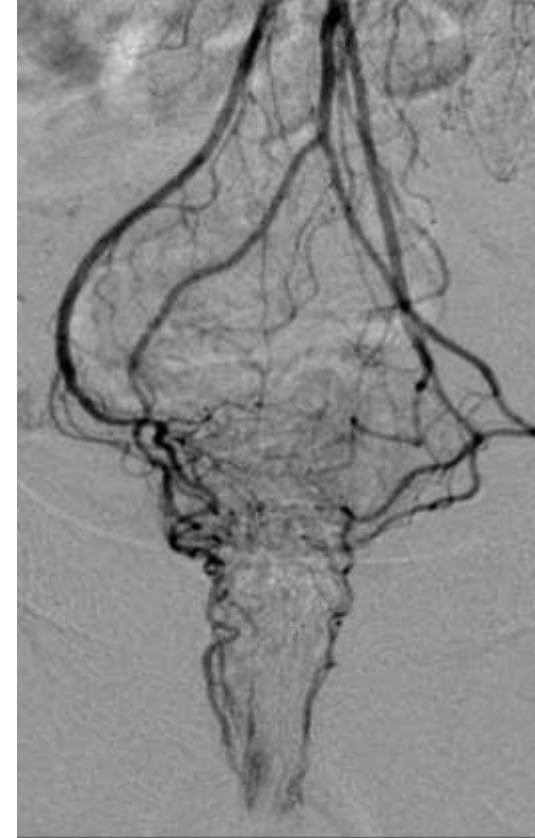
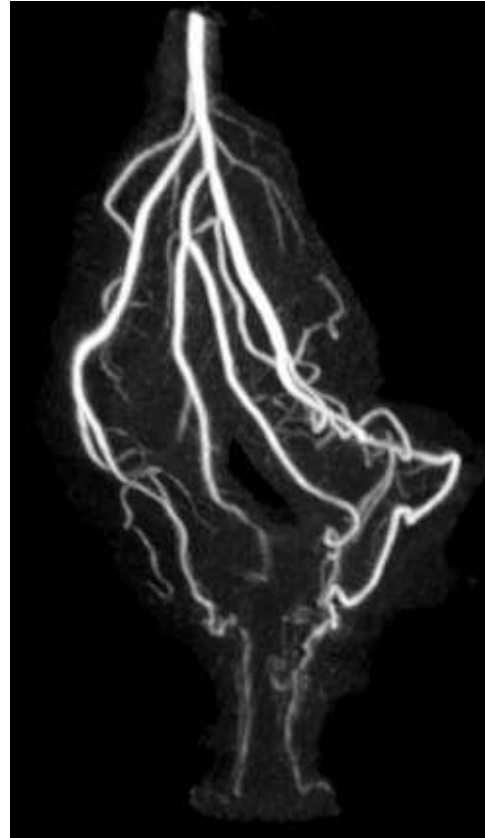
Anatomy





CIA = common iliac artery; IIA = internal iliac artery; MRA = middle rectal artery; IPA = inferior phrenic artery; CCR = corpus cavernosum recti; IRA = inferior rectal artery.

New Anatomical Classification



Type I

No depicted middle rectal artery

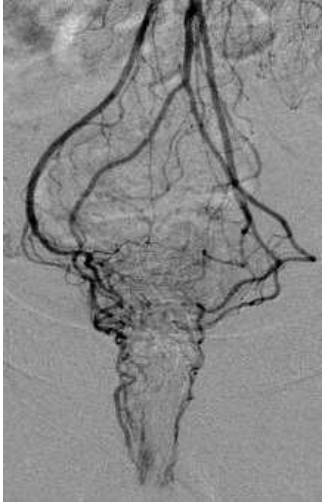
New Anatomical Classification



Type II

Uni- or bilateral middle rectal artery

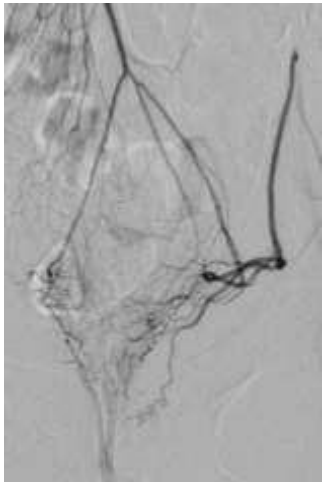
Distribution



60%

Type I

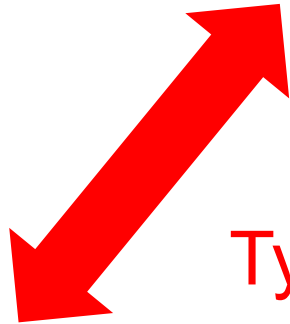
- No depicted middle rectal artery
- Clinical success: 72%



40%

Type II

- Uni- or bilateral middle rectal artery
- Clinical success: > 90%



Non-responder/Insufficient Responder/Relapser

- Why emborrhoid failed
 - Bad indication?
 - Bad technique?
- Should we redo?
 - If recurrent bleeding: Probably yes...
 - If other symptom: Other technique

Conclusion

- Does it work? **YES**
- On which symptoms?
 - Bleeding: **YES**
 - Pain: **Probably YES**
 - Prolapses: **Do not know**
- Level of evidence: **INTERMEDIATE**

Conclusion

- Hemorrhoid recurrence at one year
 - HAL: 30%
 - RBL: 49%
- Problems
 - Patient selection: bleeding
 - Patient treatment: SRA + MRA
 - Patient follow-up:
 - Patient-reported outcome of improvement
 - Validated scores
- Randomized trial...

Case Presentation

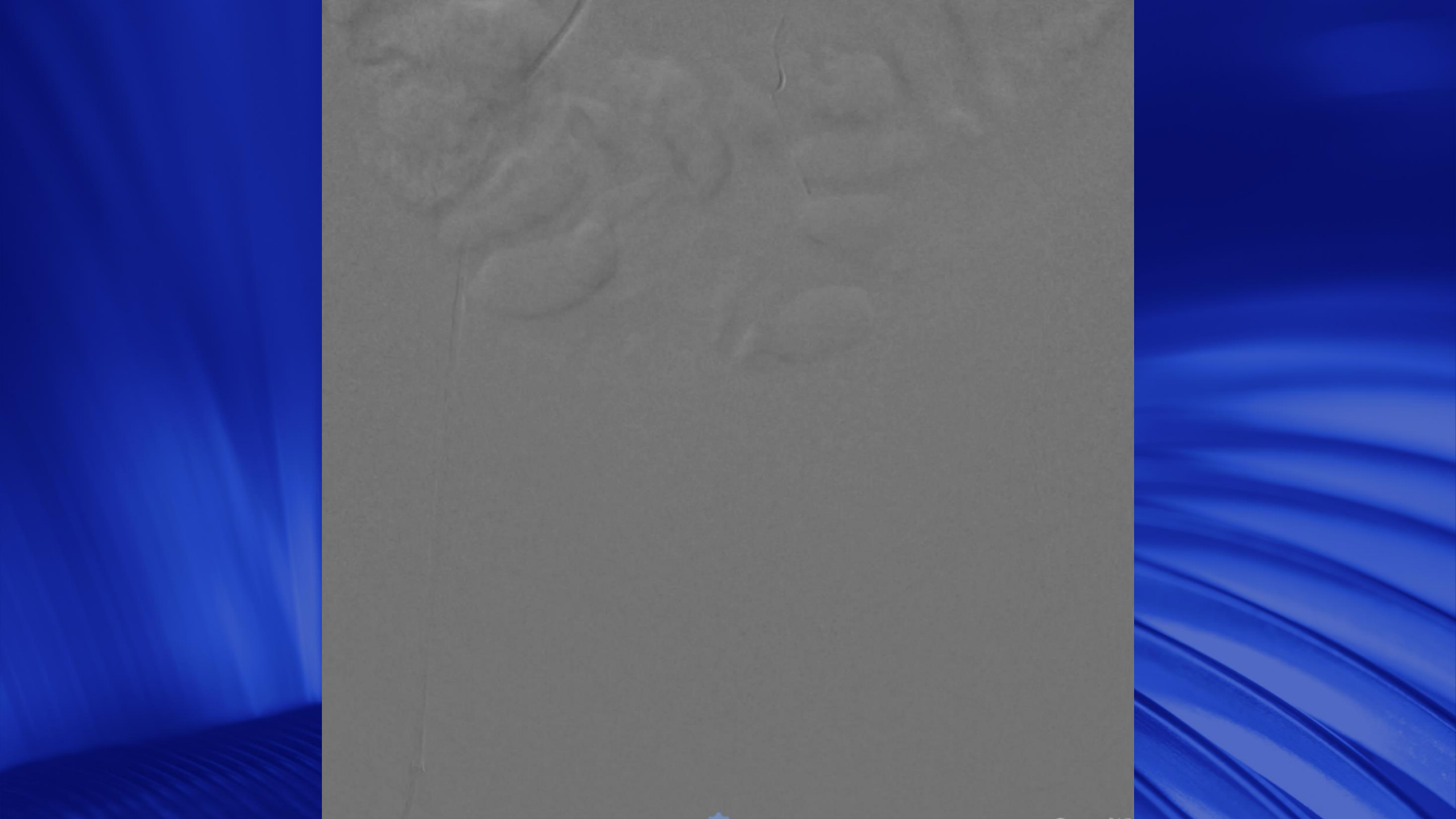
Sandeep Bagla, MD
Prostate Centers USA, LLC
President, Hemorrhoid Centers USA, LLC
Falls Church, Virginia

Case Presentation



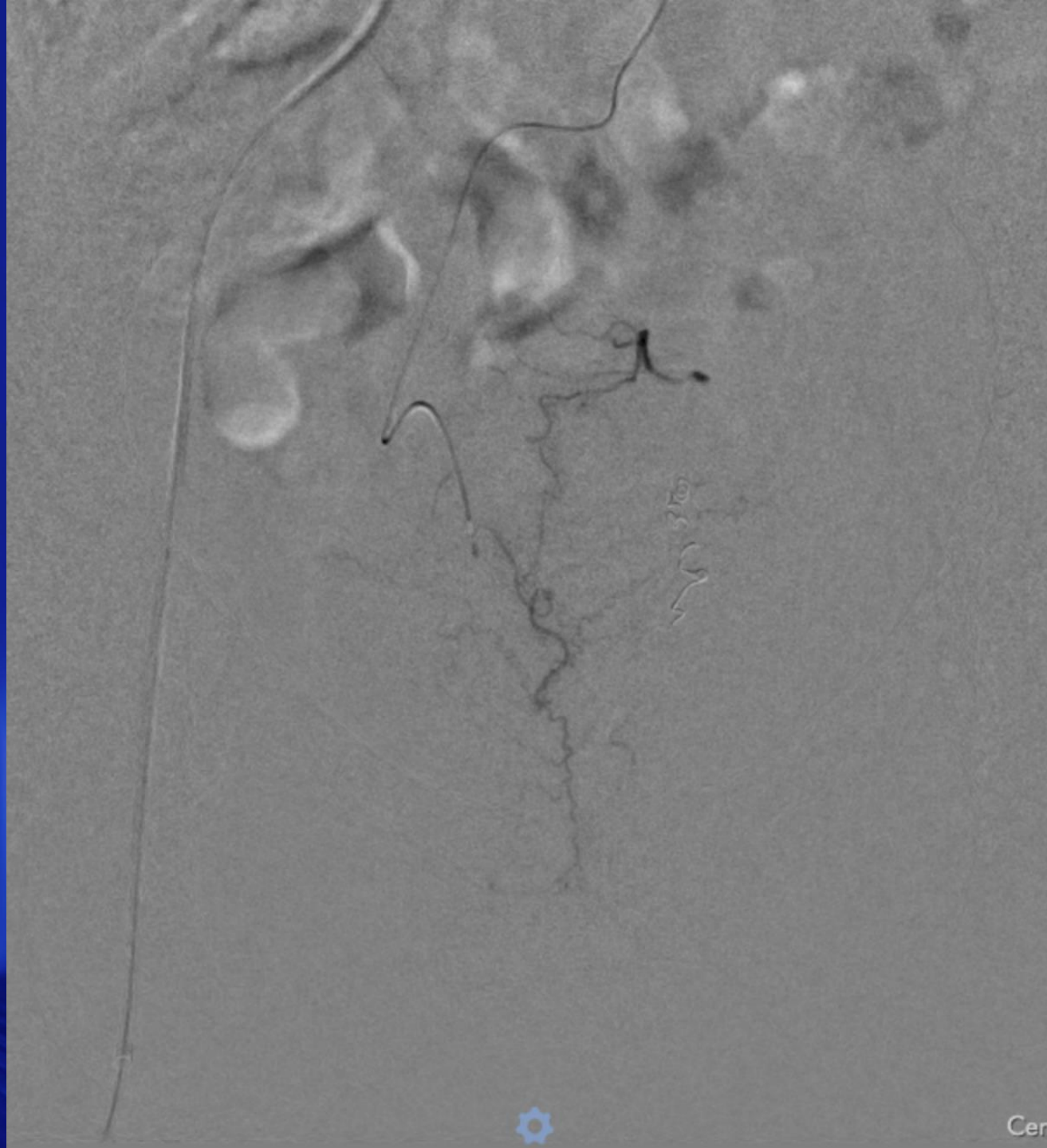
- 74-year-old female
- Symptoms 10-20 years
- Bleeding 1-6x per week
- Pain less than 1x per week
- Hemorrhoid-related pain: 5
- HSS: 8
- QoL: 2
- French bleeding score: 7
- Grade: 4



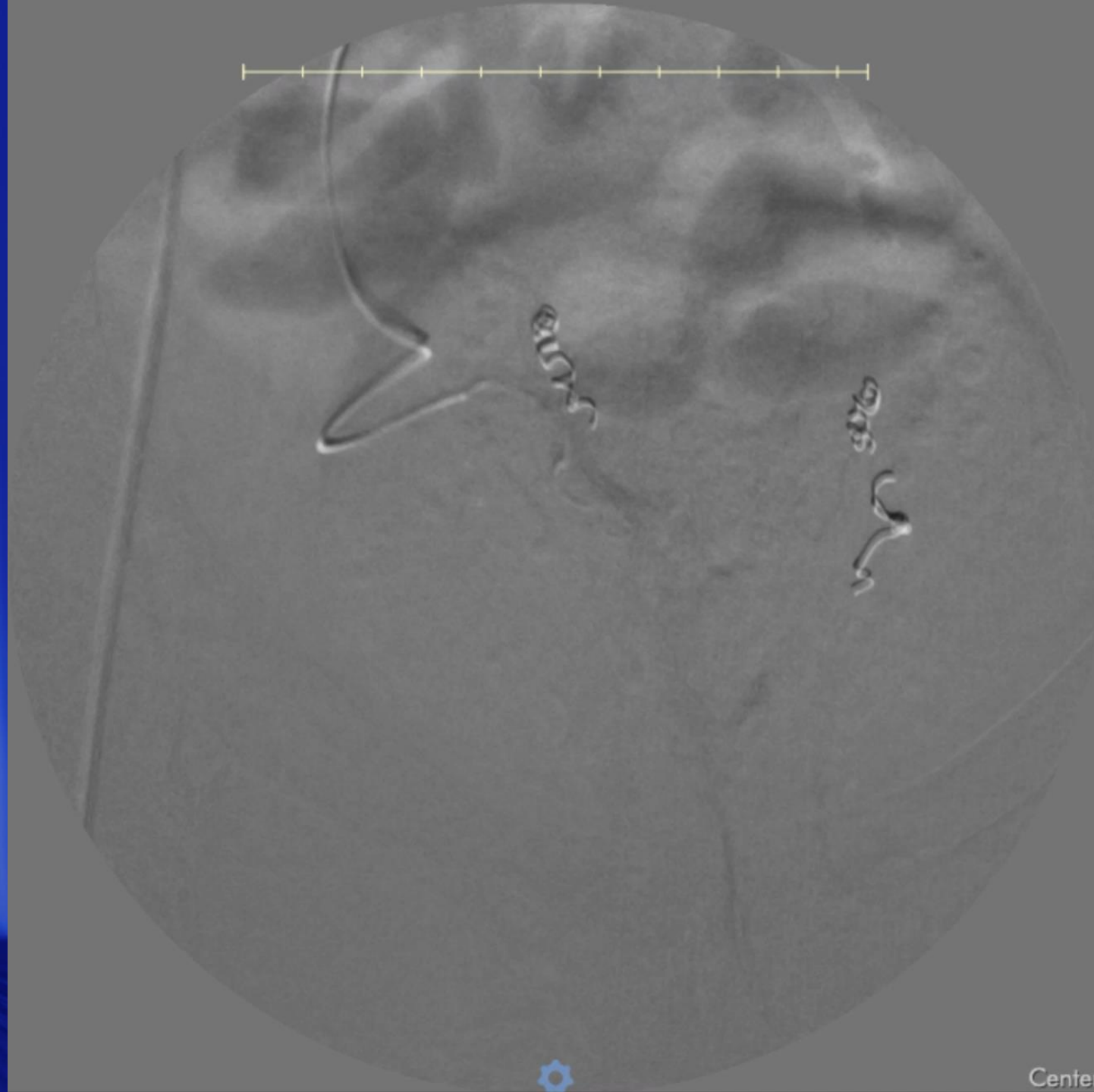


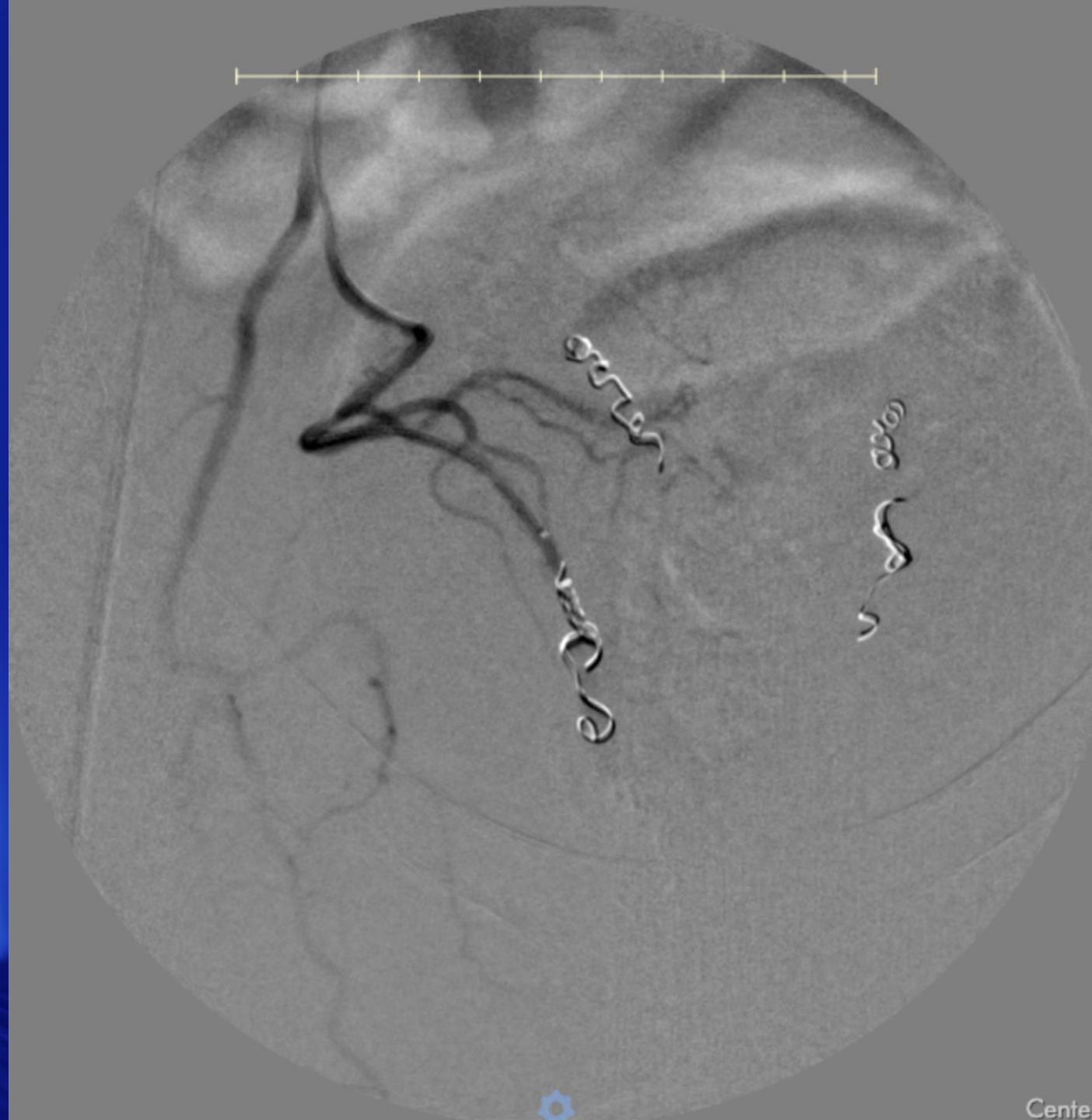












Center

Hemorrhoid Embolization— “Emborrhoid”

Anuj Malhotra, MD
Vascular and Interventional Radiologist,
New York Presbyterian Hospital
Assistant Professor of Radiology,
Weill Cornell Medical Center
New York, New York

Patient History

Patient profile

- 74, M, with PMHx significant for hemorrhoid-related lower GI bleeding for > 50 years
- When he bleeds, can have daily bleeding for months at a time, sometimes requiring transfusions

Past medical history

- Has tried multiple endoscopic therapies including Doppler-mediated ligation as well as endoscopic sclerosant therapy; none have provided any relief
- Considering surgery, but would like something less invasive

Risk factors

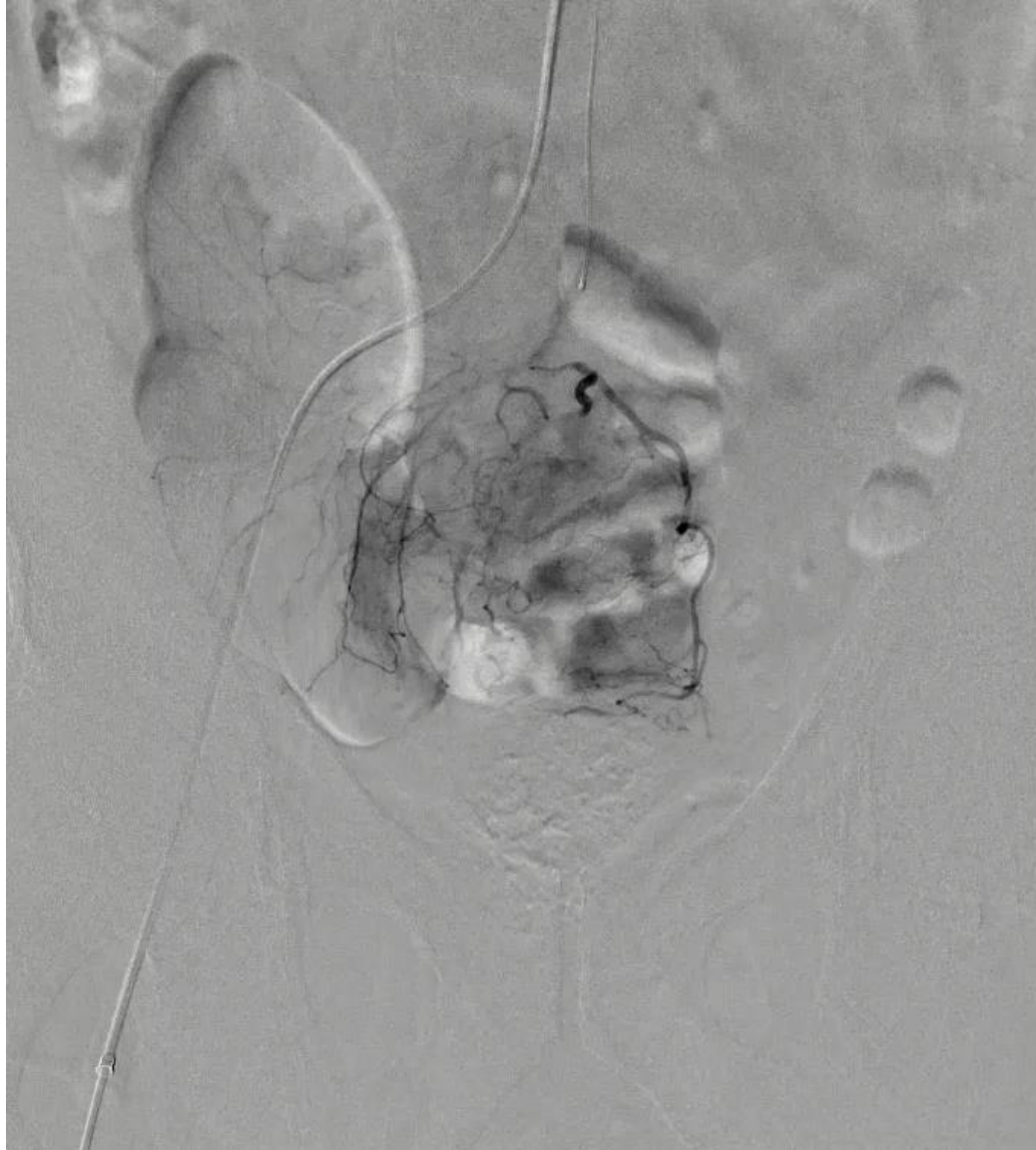
- None

Imaging: Preoperative CTA

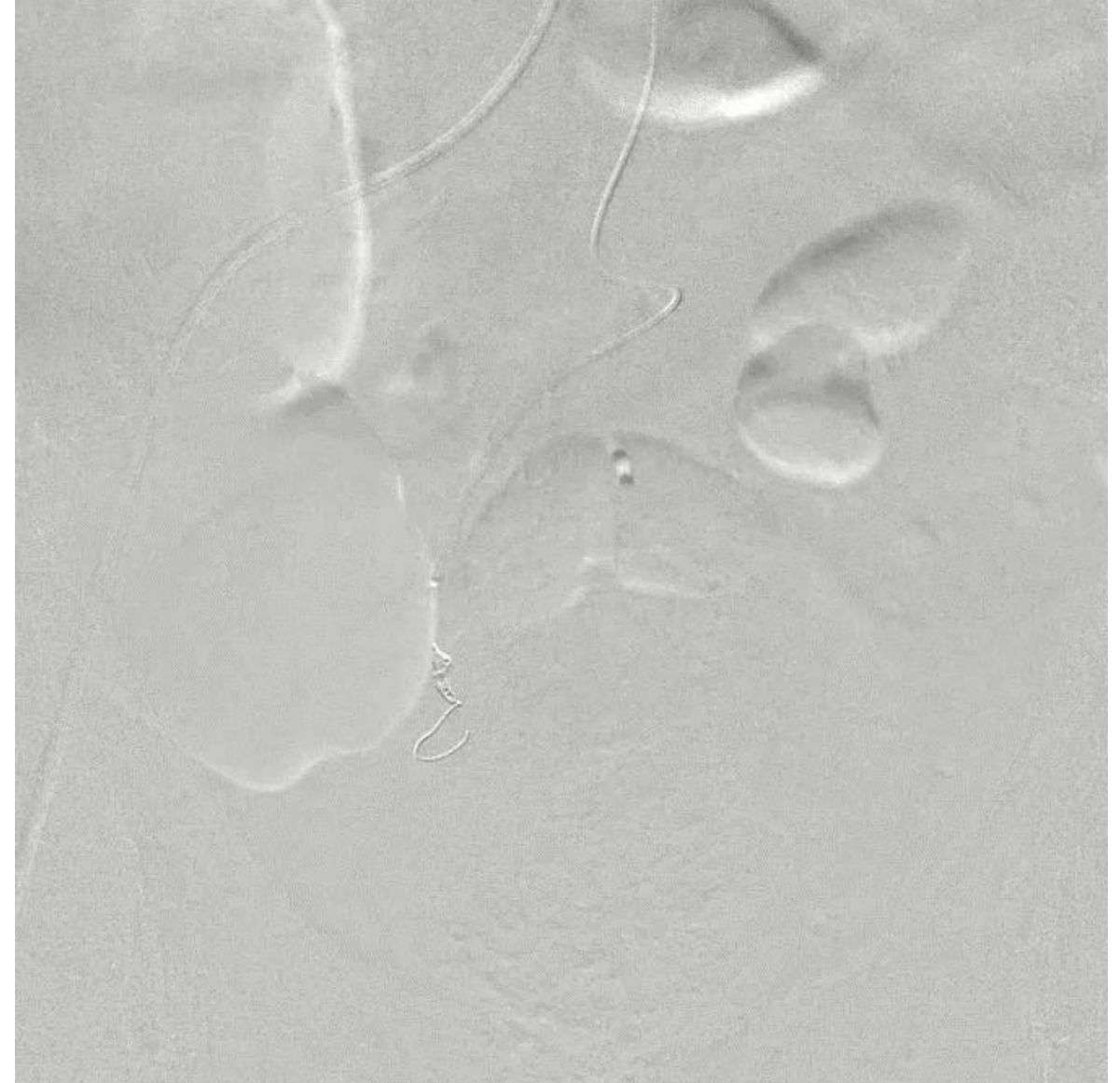


CTA = computed tomography angiography.

Treatment: Selective Superior Rectal Artery Embolization



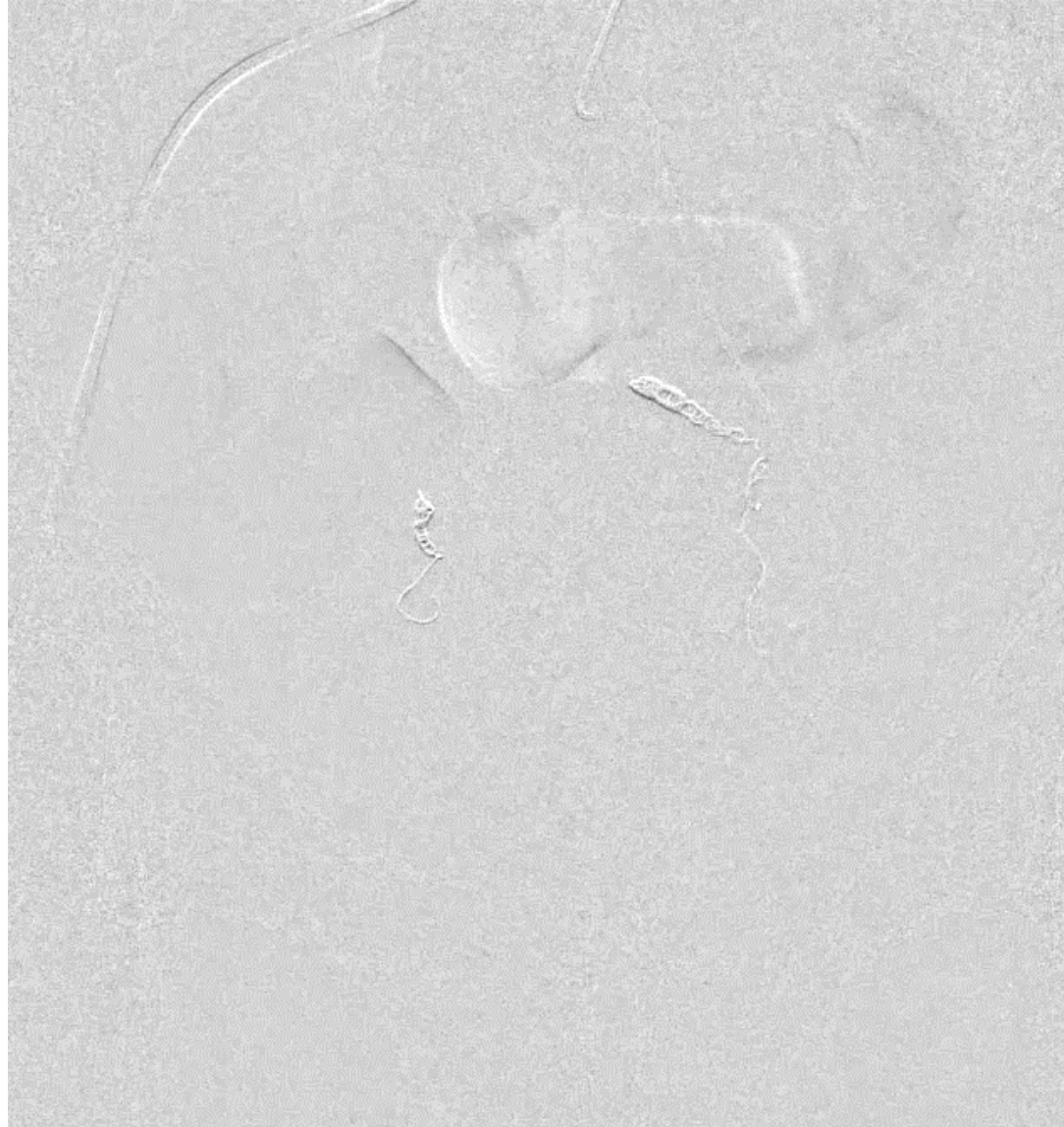
Treatment: Selective Superior Rectal Artery Embolization R1



Treatment: Selective Superior Rectal Artery Embolization P1



Treatment: Selective Superior Rectal Artery Embolization L1



Treatment: Selective Superior Rectal Artery Embolization L2



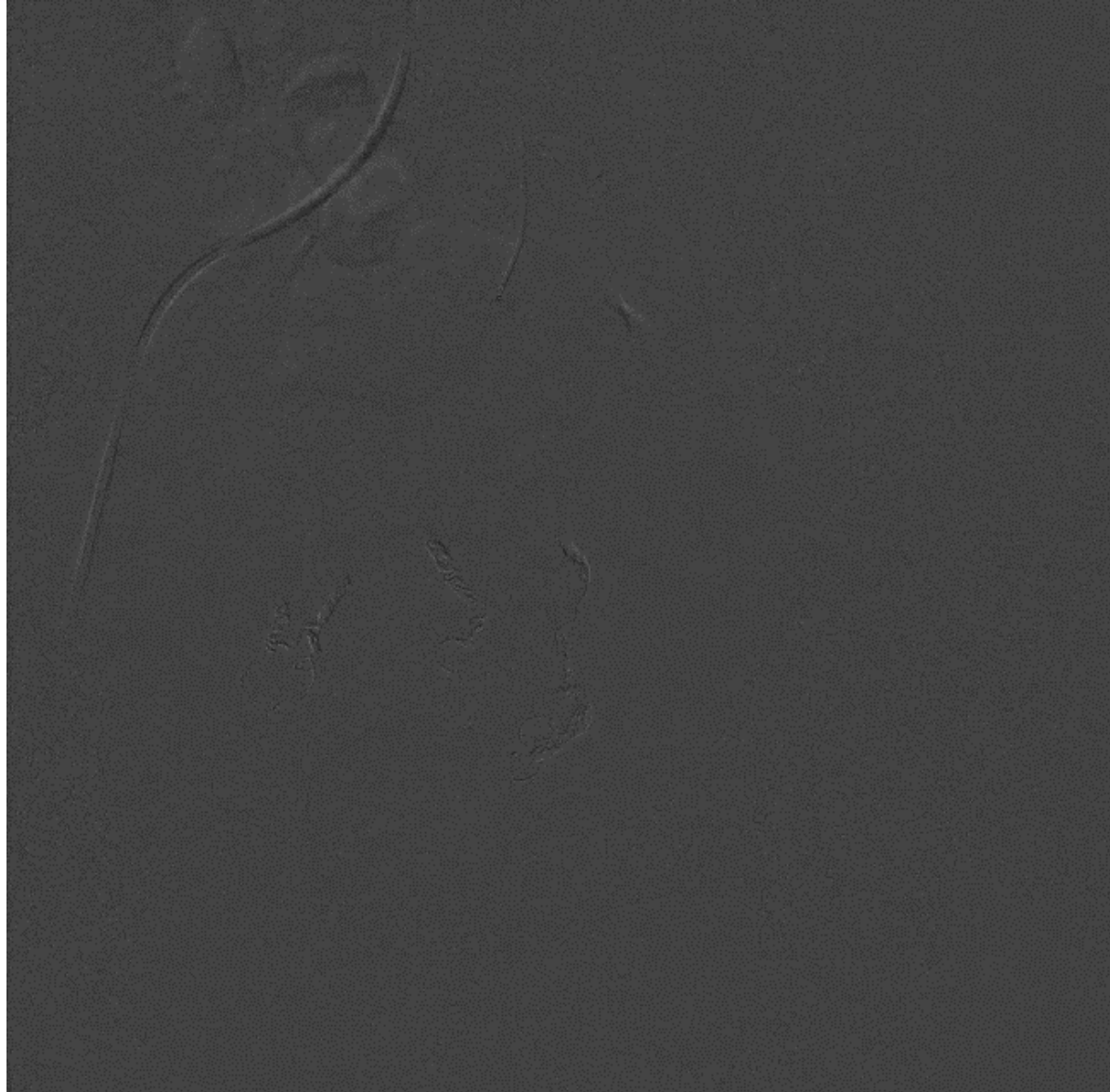
Treatment: Selective Superior Rectal Artery Embolization R2



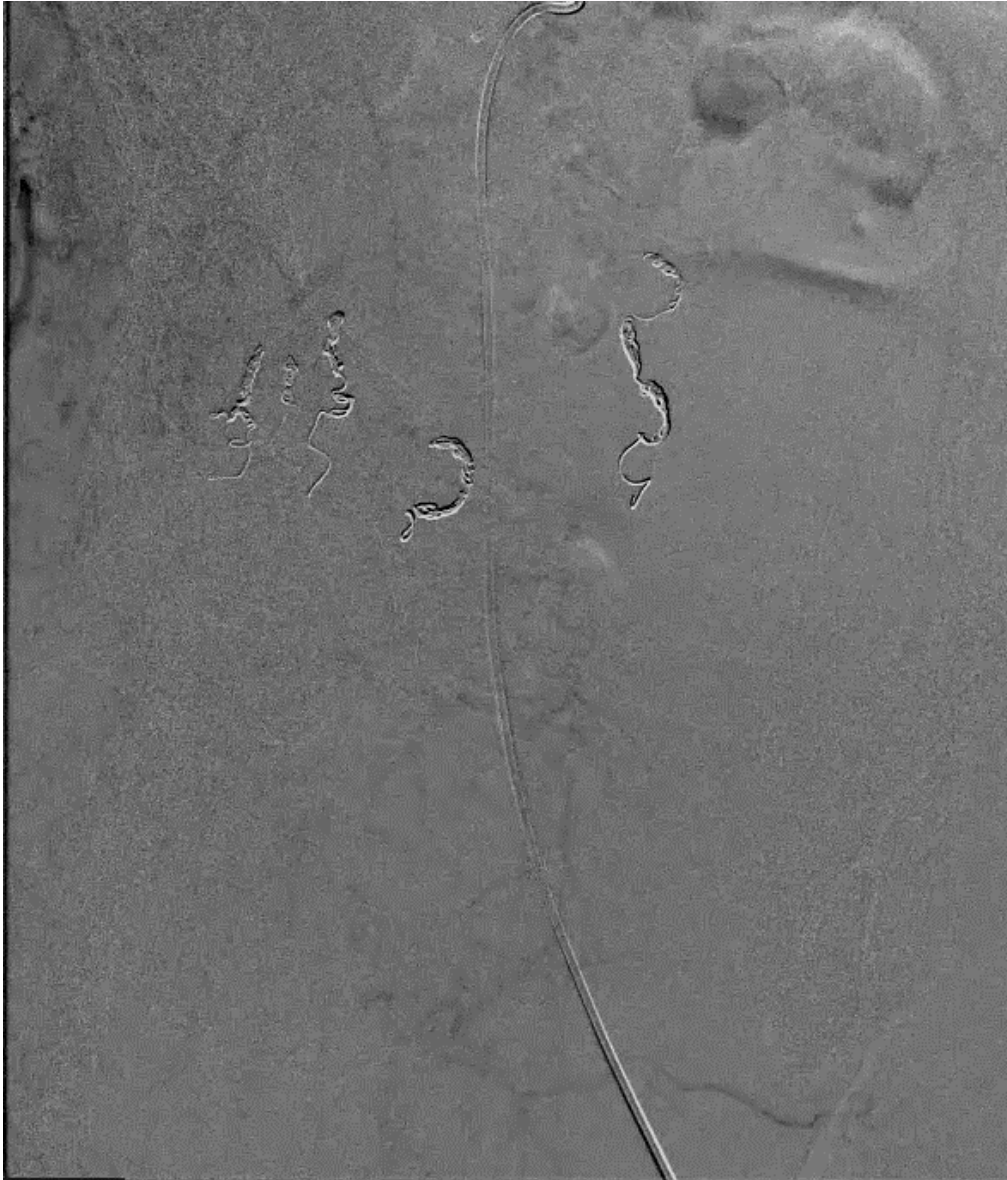
Treatment: Selective Superior Rectal Artery Embolization L3



Treatment: Selective Superior Rectal Artery Embolization



Treatment: Selective Superior Rectal Artery Embolization



Treatment: Selective Superior Rectal Artery Embolization



Post-Care Considerations

- No cases of bowel ischemia or sphincter incompetence as a result of hemorrhoidal embolization to date
- Despite this, these are still important to look for during follow-up

Follow-Up Patient Care: Approaching 3-Month Follow-Up

- Complete resolution of bleeding for the 1st month
- 1 stretch of bleeding lasting 2 weeks between 1.5-2 months
 - Hgb remained constant during this stretch
 - Much less blood in the toilet bowl subjectively
 - Much less discomfort associated with the bleeding
 - Minutes vs hours
 - No bleeding since

Conclusion and Key Learning Points

- Endovascular treatment of hemorrhoids holds a lot of promise
- Coil embolization of superior and middle rectal branches supplying hemorrhoids is the most commonly used technique