

# Update on embolisation treatment for type 1 endoleaks after EVAR: indications and technical tips to make it work successfully: contraindications

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## Disclosures

- Shape Memory Medical - Principal investigator and speaker
- Medtronic - Consultant and speaker
- Philips - Speaker
- Shockwave - Consultant and speaker
- Abbott - Consultant and speaker
- Bayer - Consultant

## Background

Secondary **not primary** type 1a endoleaks

Secondary type 1a endoleaks occur in 2.2 - 15% pts

Rupture risk in up to 52%

Embolisation potential treatment since 1999

Transarterial route only

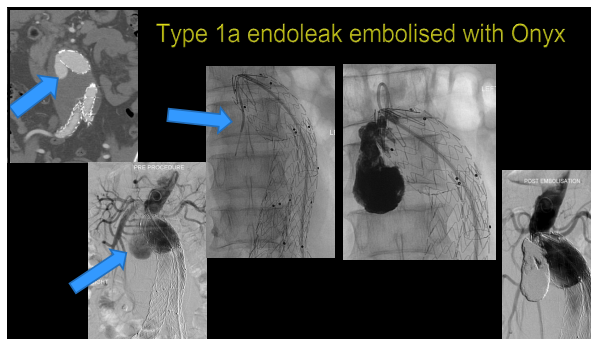
## Embolic Agents for Embolisation of Type 1 Endoleaks

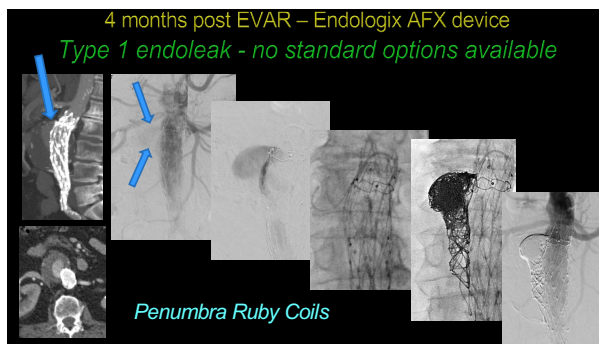


## INDICATION FOR EMBOLISATION

ONLY 1!

TYPE 1 ENDOLEAK NOT TREATABLE BY ANY STANDARD METHOD THAT IS ANATOMICALLY SUITABLE FOR EMBOLISATION





<https://doi.org/10.1007/s00270-022-03342-5> Jan 2023

**Long-Term Outcomes Following Transarterial Embolisation of Proximal Type I Endoleaks Post-EVAR**

Shyamal Patel<sup>1</sup> · Vyanios Pavlidis<sup>1</sup> · Sevet Ameli-Remani<sup>1</sup> · Joo-Young Chun<sup>1</sup> · Lutz Mullin<sup>2</sup> · Robert Morgan<sup>1</sup>

Oct 2010 – Feb 2018  
34 procedures, 27 patients

Follow-up: **mean 754 days (21-3548)** in **33 cases** - 1 no FU

Freedom from Recurrence	Freedom from Recurrence	Freedom from sac size increase	Freedom from sac size increase
13pts (40% in 1pt)	50%	15pts	58%

First author, year of publication	Total number of endoleaks (number of ELs)	Average follow-up period (range) in months	Embolic type used (coil [C], gelatin sponge [G], liquid [L], vascular plug [P], thrombin [T])	Technical success rate (%)	Recurrence rate (%)	Freedom from sac size enlargement (%)	Number of sac ruptures in follow-up time
Gulzarani, 1997 [10]	5 (3)	7 (4-9)	C, C + G	100	0	100	0
Amour, 1999 [11]	5 (1)	8 (3-17)	C	100	0	100	0
Faloutsos, 2003 [12]	8 (7)	24.5 (1-60)	C	100	0	100	0
Makridakis, 2003 [13]	17 (13)	5.9 (0-19)	L/NBCA, C, C + T	92.3	25	100	1
Choi, 2011 [14]	7 (6)	18 (0-53)	L/NBCA, L, NBCA) + C	85.7	42.8	83.3	0
Henzke, 2011 [15]	6 (5)	(3-18)	LoOnyx	100	NA	NA	1
Chun, 2013 [8]	6 (4)	4.2 (1-10)	LoOnyx	100	0	100	0
Eberhardt, 2014 [16]	8 (7)	13.2 (8-24)	LoOnyx), LoOnyx) + C	100	12.5	100	NA
Ameli-Remani, 2015 [17]	7 (7)	8 (3-15)	LoOnyx), LoOnyx) + C	100	0	100	0
Ameli-Remani, 2017 [7]	27 (25)	10.2 (0-44.6)	LoOnyx), LoOnyx) + C, C	100	28	85	3
Graf, 2017 [18]	8 (6)	0-10	LoOnyx), LoOnyx) + C	83.3	0	NA	1
Marelli, 2017 [19]	9 (9)	16 (3-35)	LoOnyx), LoOnyx) + C	67	11.1	100	0
Jerzeli, 2018 [20]	5 (5)	16.5 (12-30)	LoOnyx + NBCA) + C, L/NBCA + Onyx), LoOnyx) + C	100	0	100	0
Machiorri, 2018 [21]	22 (22)	15.4 (0-65)	LoOnyx), C, P	100	38	76	1
<b>Our study, 2022</b>	<b>34 (34)</b>	<b>25 (0-118)</b>	<b>LoOnyx), LoOnyx) + C, C</b>	<b>97</b>	<b>58</b>	<b>52</b>	<b>6</b>

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<https://doi.org/10.1007/s00270-022-03629-1>

**CIRSE STANDARDS OF PRACTICE GUIDELINES**

**CIRSE Standards of Practice on Management of Endoleaks Following Endovascular Aneurysm Repair**

Joo-Young Chun<sup>1,2</sup> · Michiel de Haan<sup>3</sup> · Geert Maleux<sup>4</sup> · Asaad Osman<sup>1</sup> · Alessandro Cannavale<sup>5</sup> · Robert Morgan<sup>1,2</sup>

2024

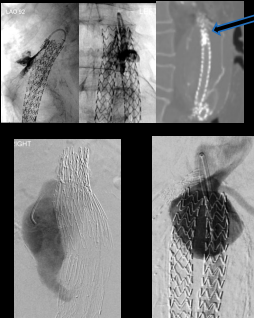
*"In patients where standard techniques have failed, or the patient is unfit for more complex therapies, transcatheter embolisation is an alternative treatment option"*

Tips and Tricks/Lessons Learned

Avoid using *excessive embolic* with risk of misplacement into aortic lumen

Avoid large endoleak cavities

AVOID LARGE ENDOLEAK ENTRANCES



Conclusions – Type 1a endoleak embolisation

Medium difficulty procedure → Use *detachable coils +/- liquids*

Limited long term large series data →  
*58% have a durable result free from sac size increase*

Consider when *standard methods have failed*  
*or not available due to patient status*

Appropriate *patient selection* is vital to *optimise clinical success*

THANK YOU