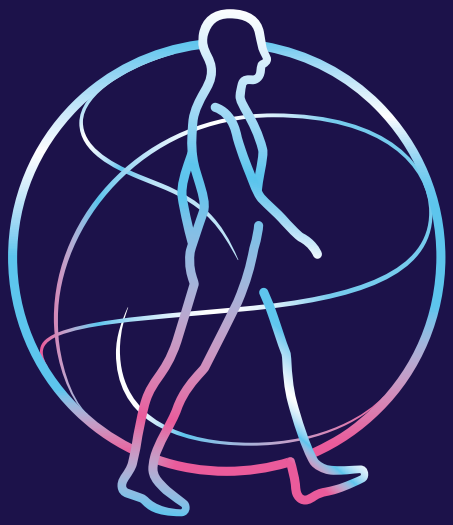
Medtronic

Clinical paper review
for Health care professionals

"Outcomes of Onyx Embolization of Type II Endoleaks After Endovascular Repair of Abdominal Aortic Aneurysms".

Mozes GD et al., 2020



Highlights:

1. Single-center, retrospective review
2. 85 consecutive patients
3. Onyx™ LES embolization
4. Mean follow-up: 2.5 ± 2.1 years
5. Abdominal aortic aneurysm diameter stabilization or reduction in 66% of patients

Background

- Endovascular aortic aneurysm repair (EVAR) is the preferred treatment for abdominal aortic aneurysm (AAA) patients with suitable anatomy.
- Endoleaks - defined as persistent blood flow into the aneurysmal sac - represent an important issue for long term durability of aneurysms repair.
- Type II endoleaks are the most frequently observed endoleak following an EVAR.
- Type II endoleaks can resolve spontaneously. However, unresolved ones can result in aneurysm sac enlargement and need secondary reinterventions.
- Ethylene vinyl alcohol copolymer (Onyx™ Liquid Embolic System [LES]) has emerged as a novel liquid embolization agent that provides a minimally invasive option to treat both inflow and outflow of type II endoleaks in a single setting. However, outcomes of Onyx™ treatment of type II endoleaks after EVAR are not well characterized.

Study objective

To retrospectively analyse the outcomes of Onyx™ embolization of type II endoleaks following EVAR.

Materials and methods

Study Design

- This study was approved by the Mayo Clinic Institutional Review Board as a single-institution retrospective analysis.
- 85 consecutive patients treated for post-EVAR type II endoleaks utilizing Onyx™ embolization at the Mayo
- Clinic between August 2009 and May 2018 were identified.
- Patients without follow-up after Onyx™ embolization were excluded.
- Change in AAA sac diameter was measured and compared between computed tomography imaging at first Onyx™ intervention and most recent follow-up imaging.
- A subset analysis of AAA sac change was performed on patients with isolated type II endoleaks, to help isolate
- Onyx™ embolization effects from [illegible].

Imaging Analysis

- Computed tomography imaging occurred in all patients and both preoperative and postoperative scans were evaluated for AAA diameter and aneurysm sac volume.
- The maximum AAA cross-sectional diameter from the adventitia was measured.
- For assessment of thrombus volume, the outer wall and flow lumen were first delineated by TeraRecon analysis and the resultant space measured as thrombus volume.

Follow-Up

- Follow-up at 1, 6, and 12 months, and then annually for 5 years.
- Additional clinical data were collected for 288 patients via phone survey at mean 39 ±18-month post-surgery.

Results

- Complete embolization of the nidus and feeding artery was achieved in 32 patients (38%); in the remaining patients, nidus embolization only could be achieved.
- There was no significant difference in AAA sac diameter reduction >5 mm (P =0.97) between patients who had complete embolization (21 patients, 66%) and those who had incomplete embolization (35 patients, 66%).
- 29 patients (34%) had an increase in AAA sac diameter > 5 mm, while only 16 patients (19%) reduced > 5 mm. 40 patients (47%) had sac stabilization (increase or decrease of ≤5 mm). Among patients with an isolated type II endoleaks, 8 had a reduction > 5 mm and 25 a stabilization in sac diameter.
- Volume of aneurysm thrombus increased >5% in 43 patients (51%). Thrombus stabilization occurred in 42 patients (49%) of which 28 patients (33%) had a reduction > 5%.
- Freedom from aneurysm rupture at 2 years was 97.7% (95% CI 84.9-99.7%) for the entire cohort.

Type II endoleaks embolization with Onix results in **aortic aneurysm sac diameter stabilization or reduction** in **66%** of patients, and up to 72% in isolated type II endoleaks.

Procedure Outcomes	
Mean time from index EVAR to initial Onyx™ embolization	3.30 ± 2.63 years
Mean aneurysm sac growth	6.29 ± 6.73 mm
Mean volume of Onyx™	4.91 ± 4.70 mL (0.5-21.0 mL)
Patients with transarterial approach of embolization (n)	37
Patients with lumbar approach of embolization (n)	45
Patients with an intervention prior to Onyx™ embolization (n)	24
Total number of Onyx™ embolizations	112
Mean number of Onyx™ embolization / patient	1.32 ± 0.64
Overall patients with post-Onyx™ interventions	27%

Conclusions

Type II endoleaks embolization with Onyx™ is effective in reducing or stabilizing AAA sac diameter in 66% of analysed patients, and up to 72% in isolated type II endoleaks.

Reference

Mozes GD, et al. "Outcomes of Onyx® Embolization of Type II Endoleaks After Endovascular Repair of Abdominal Aortic Aneurysms". Ann Vasc Surg 2020; 67: 223-231

Go to article

Medtronic

Europe
Medtronic International Trading Sàrl.
Route du Molliau 31
Case postale
CH-1131 Tolochenaz
www.medtronic.eu
Tel: +41 (0)21 802 70 00
Fax: +41 (0)21 802 79 00

medtronic.eu