Onyx®

Onyx® is a non-adhesive liquid embolic agent.

Onyx is comprised of EVOH (ethylene vinyl alcohol) copolymer dissolved in DMSO (dimethyl sulfoxide), and suspended micronized tantalum powder to provide contrast for visualization under fluoroscopy.

The Onyx Liquid Embolic System (LES) consists of a 1.5 ml vial of Onyx, a 1.5 ml vial of DMSO, and three 1 ml Onyx delivery syringes.

A DMSO compatible delivery micro catheter that is indicated for use in the neuro vasculature (e.g. Marathon™, Rebar® or UltraFlow™ HPC catheters) is used to access the embolization site.

Onyx is available in two product formulations, Onyx 18 (6% EVOH) and Onyx 34 (8% EVOH).

Indications

Used for the pre-surgical embolization of brain arteriovenous malformations (bAVM).

It has been increasingly used to exclude portions of large AVMs from the parent circulation prior to SRS.

Preoperative Onyx embolization of head, neck, and spine tumors is capable of deep histologic tumor penetration, even when not visualized on angiography. The lack of association between measures of procedural adequacy suggests that using angiographic devascularization as a measure of procedural efficacy may be of limited utility [1].

Utilization of a dual-lumen balloon may improve Onyx penetration into isolated dural arteriovenous fistulas and seemed to significantly increase the immediate complete occlusion rate and decrease total procedural time, Onyx injection time, and number of feeders requiring embolization [2].

1)
Grandhi R, Hunnicutt CT, Harrison G, Zwagerman NT, Snyderman CH, Gardner PA, Hartman DJ, Horowitz M. Comparing Angiographic Devascularization with Histologic Penetration after Preoperative Tumor Embolization with Onyx: What Indicates an Effective Procedure? J Neurol Surg A Cent Eur Neurosurg. 2015 Jan 16. [Epub ahead of print] PubMed PMID: 25594815.
2)
Kim JW, Kim BM, Park KY, Kim DJ, Kim DI. Onyx Embolization for Isolated Type Dural Arteriovenous Fistula Using a Dual-Lumen Balloon Catheter. Neurosurgery. 2016 May;78(5):627-36. doi: 10.1227/NEU.0000000000001069. PubMed PMID: 26488328.