

GLUBRAN[®]2

ENDOVASCULAR

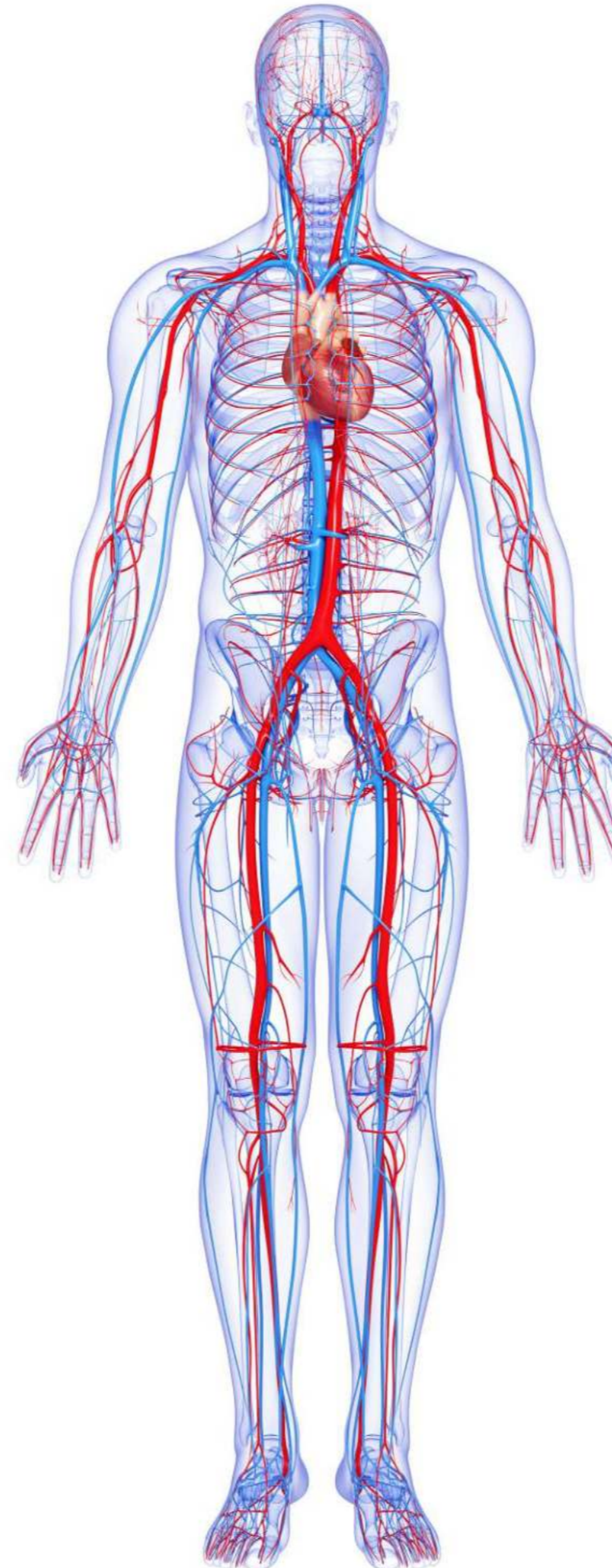
SOLVES.

**Building
the perfect
Embolization**



**SOLUTION
COMES FROM
EVOLUTION.**

WHY GLUBRAN[®] 2



Great penetration capacity also suitable for distal and very peripheral targets

Effective and quick ^{1,20,38,48,57}

Easy to prepare ^{8,20,23,31,48}

Suitable for emergencies ^{38,57,58}

High haemostatic power ^{3,7,8,48,57,76}

Applicable with standard 4F catheters ^{27,40}

In addition to mechanically embolizing it also acts as a sclerotizing agent ^{27,13,17,27}

It does not cause pain ^{20,27,85}

It does not contain toxic solvents ⁸⁶

Can be used in combination with other embolizing agents (Spirals and Microspheres) ^{38,48,75,79}

Reduced costs: "This treatment is safe, effective and a "low cost" treatment with a high success rate" ^{1,20}

Effective even in patients on anticoagulants or affected by inherited coagulation disorders ^{28,31,48}

It generates a permanent occlusion ^{31,40,85}

CE authorized for endovascular use ^{1,27}

SIX PRODUCTS IN A DROP.



ADHESIVE

High tensile strength. Acceptable minimum load is ≥ 435 N [approx. 18 Kgf/cm²].²⁻³



SEALANT

Applied by the related nebulizing devices it forms a thin film with sealing and waterproof properties due to its synthetic nature and strong adhesive power.³⁻⁶



HAEMOSTATIC

Haemostasis by mechanical action, thanks to the formation of thrombus by chemical reaction.¹⁰
Effective in wet environment.¹⁰



BACTERIOSTATIC

Blocks bacterial growth for an average of 7 days.¹⁰⁻¹²



SCLEROSANT

Injected into the lumen of a vessel/varices, polymerize generating a plastic cap causing thrombosis and subsequent fibrosis and sclerosis.¹³⁻¹⁷



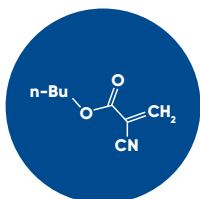
LIQUID EMBOLIZING AGENT²⁰⁻⁸¹

Injected into a blood vessel polymerizes building a cast adheres to the walls of the vessel obstructing it such as an embolus. It causes a complete and definitive occlusion without any recanalization, equivalent to surgical ligation.

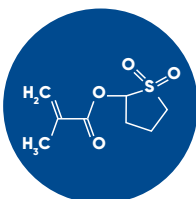
Tailored dilutions with Lipiodol allow a great modulability of Glubran[®]2, adaptable to a large variety of cases:

TREATMENTS	GLUBRAN [®] 2/LIPIODOL
• Arterial and venous bleeding	1:3-1:6 ^{48,57,58, 84}
• AVM	1:3 ⁸⁴
• Fistulas	1:1-1:3 ^{24,30,36,46,62,73,79}
• Varicocele	1:1 ⁸⁴
• Cysts and tumours	1:1-1:6 ^{29,31,67}
• Portal Vein	1:1-1:8 ⁸⁴
• Endoleaks tipo II	1:3 ^{41,49,56}

- > Ready to use
- > Does NOT polymerise in the presence of air
- > Storage at +2 to +8°C
- > Can remain at room T (22,5 +/- 2,5°C) per 48h²



NBCA



MS

The co-monomer NBCA + MS is an add value to give:

- Polymerisation Temperature: 45°C lower than 80-90 °C typical of pure monomeric cyanoacrylates like N-Butyl-CyanoAcrylate and Hethyl-Cyanoacrylate¹⁰⁻¹³⁻⁶¹⁻⁸²
- NO tissue necrosis¹⁰⁻¹²⁻⁶¹⁻⁶³⁻⁶⁴
- Greater elasticity of the cast at the end of the polymerization⁴⁻⁶

Appearance

TRANSPARENT

Odour

TYPICAL OF CYANOACRYLATES

Density

SIMILAR TO WATER

INTERVENTIONAL RADIOLOGY

PRE → POST EMBOLIZATION

BODY ²⁰⁻⁵⁸

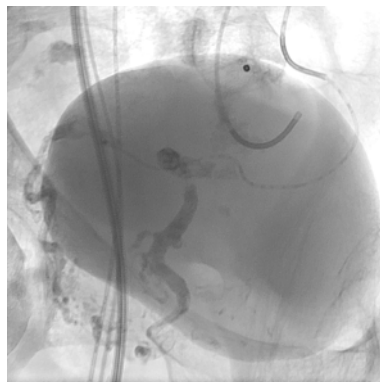
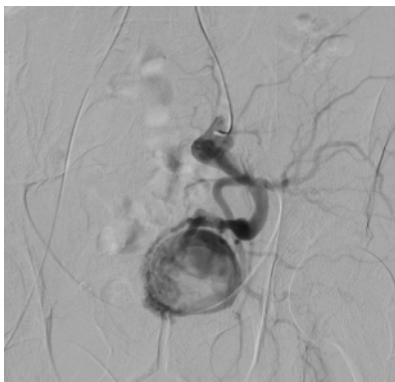
ARTERIAL EMBOLIZATION FOR BONE TUMOURS ³¹



Pre-embolization

Post-embolization

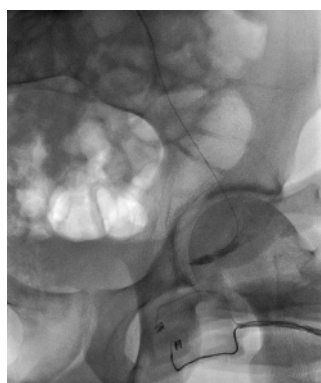
PELVIC AVM ⁸³



Pre-embolization

Post-embolization

VARICOCELE ⁸³

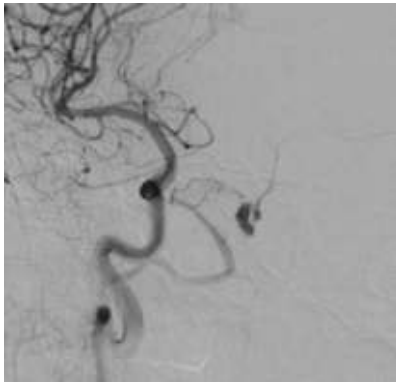


Pre-embolization

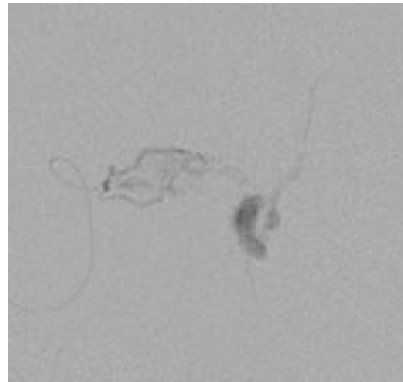
Post-embolization

HEAD & NECK ⁵⁹⁻⁸¹

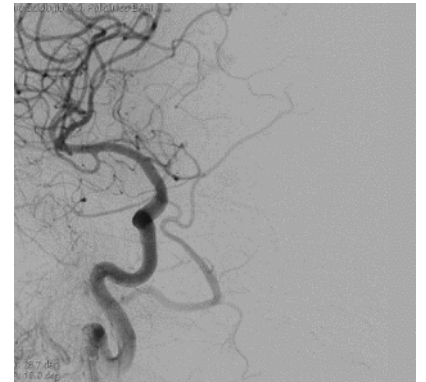
DURAL FISTULA ⁶²



Pre-embolization

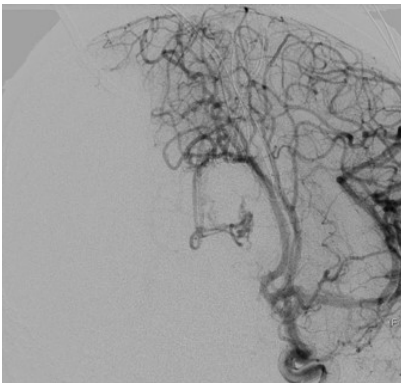


Microcatheterization

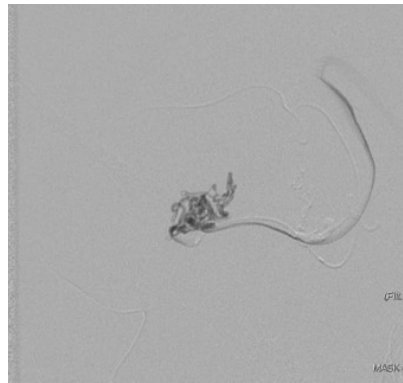


Post-embolization

INTRAVENTRICULAR BLEEDING ⁶²



Pre-embolization

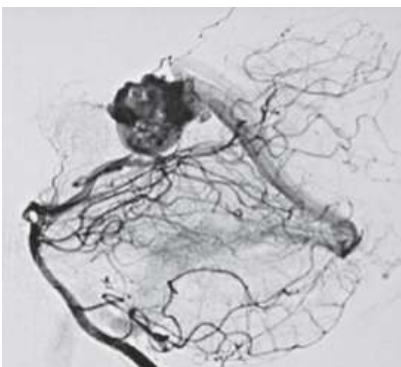


Microcatheterization



Post-embolization

AVM HEMORRHAGE IN A YOUNG PATIENT ⁶²



AVM bleeding



After Glubran[®]2 injection the AVM was completely obliterated.



Post-embolization

GUIDELINES FOR USING GLUBRAN[®] 2



1. Careful preliminary angiographic examination

Identification of the afferent and collateral vessels and any eventual AV fistulas, with oblique and cranio-caudal projections



2. Selective and superselective catheterisation of the area to be embolised



3. Careful hemodynamic evaluation



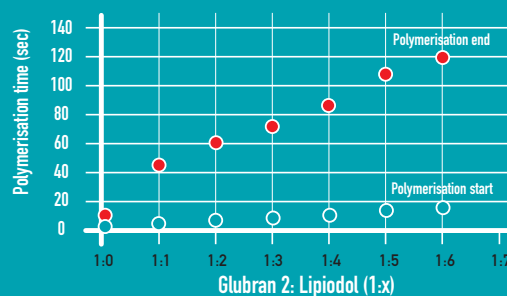
4. Dilute with Lipiodol[®]:

- a) To delay the Glubran[®] 2 to polymerisation start time
- b) To make it radiopaque



5. Mix the two compounds uniformly

Immediately before injection (with a 3-way resistant stopcock or in a steel bowl)



6. Wash the catheter with glucose or dextrose solution



7. Inject slowly

- Microbolus of 0.1-0.3 ml of mixture > push with glucose/dextrose ("sandwich" technique)
- A single injection continuously



8. Remove the catheter

(quickly and immediately after the injection, if it was not performed the "sandwich technique" with glucose)



9. Eventual check with contrast medium at least two minutes later

WARNING: DO NOT USE GLUBRAN[®] 2 WITH POLYCARBONATE OR SILICONE MATERIALS

Advised products & materials

- Glubran[®] 2/Lipiodol[®] Ultra-Fluid
- Glucose or dextrose 5%-33%
- Polyethylene (PE) or polypropylene (PP) syringes with luer lock
- 3-way-stopcocks
- Standard 4F catheter
- Coaxial microcatheter

Glubran[®] 2/Lipiodol[®] dilution ratios⁸⁴

	MICROCATHETER POSITION	CATHETER TIP	INJECTION OF THE MIXTURE	FLOW SPEED	OCCCLUSION	EXAMPLES OF APPLICATIONS
GLUBRAN [®] 2/LIPIODOL [®] 84 Dilution ratio 1:1 to 1:3 ¹⁻⁹	Close to lesion	Wedged	Continuous	High	Proximal	Varicocele, Hypervascularized tumors, Gastro-intestinal bleedings, Peripheral bleedings, Pseudoaneurysms, High-flow AVM
GLUBRAN [®] 2/LIPIODOL [®] 84 Dilution ratio 1:4 to 1:9 ¹⁰⁻¹⁴	Far from lesion	Free	Drop by drop	Low	Distal	Organ-end artery, Portal vein embolization, Low-flow AVM, Tumor devascularization, Venous malformations, Lymphatic leakage

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- Modified by the leaflet "Lipiodol and cyanoacrylate-based glue (Glubran2/NBCA) mixing process". July 2019 Ed. Guerbet