

**GLUBRAN<sup>®</sup>2**

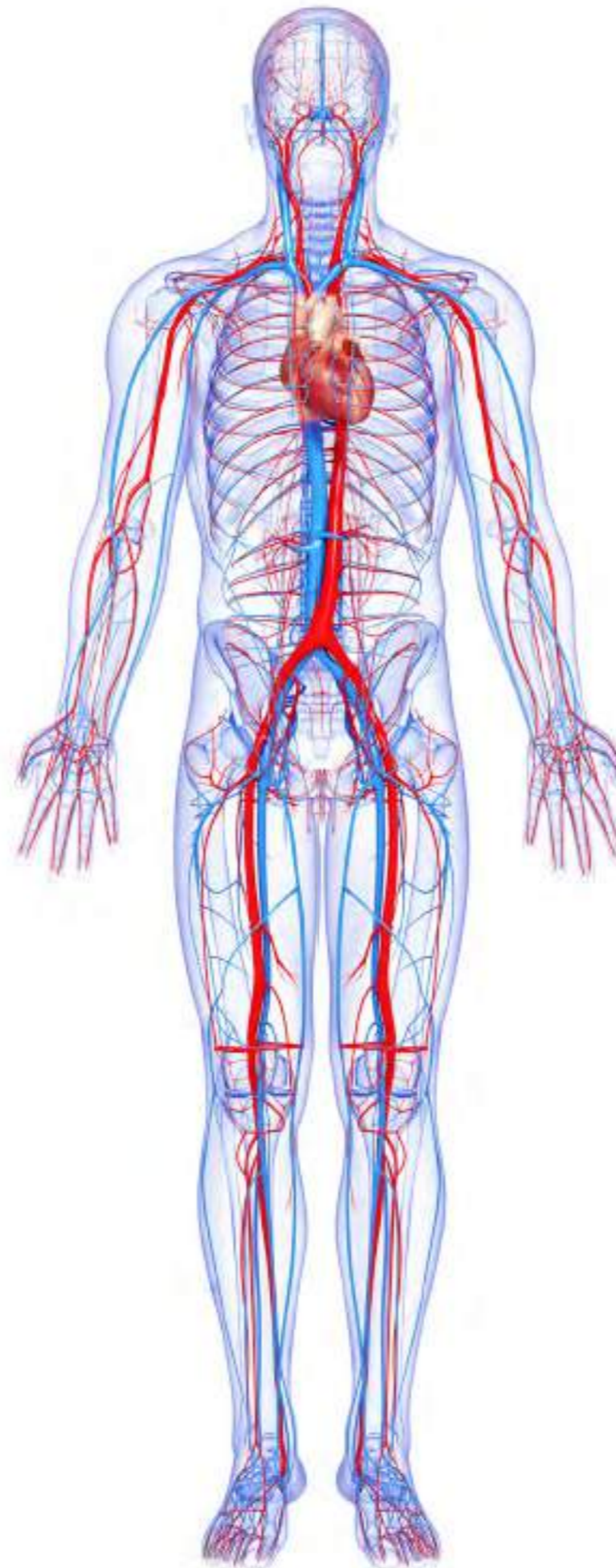
ENDOVASCULAR

# SOLVES.

**Building  
the perfect  
Embolization**



**GEM** SOLUTION  
COMES FROM  
EVOLUTION.



Great penetration capacity also suitable for distal and very peripheral targets <sup>68,71,77,79,81,82</sup>

Effective and quick <sup>1,20,38,48,57</sup>

Easy to prepare <sup>8,20,23,31,48</sup>

Suitable for emergencies <sup>38,57,58</sup>

High haemostatic power <sup>3,7,8,48,57,76</sup>

Applicable with standard 4F catheters <sup>27,40</sup>

In addition to mechanically embolizing it also acts as a sclerotizing agent <sup>27,13,17,27</sup>

It does not cause pain <sup>20,27,85</sup>

It does not contain toxic solvents <sup>86</sup>

Can be used in combination with other embolizing agents (Spirals and Microspheres) <sup>38,48,75,79</sup>

Reduced costs: "This treatment is safe, effective and a "low cost" treatment with a high success rate" <sup>1,20</sup>

Effective even in patients on anticoagulants or affected by inherited coagulation disorders <sup>28,31,48</sup>

It generates a permanent occlusion <sup>31,40,85</sup>

CE authorized for endovascular use <sup>1,27</sup>

# SIX PRODUCTS IN A DROP.



## ADHESIVE

High tensile strength. Acceptable minimum load is  $\geq 435$  N [approx. 18 Kgf/cm<sup>2</sup>].<sup>2-3</sup>



## SEALANT

Applied with dedicated nebulizing devices it forms a thin film with sealing and waterproof properties due to its synthetic nature and strong adhesive power.<sup>3-6</sup>



## HAEMOSTATIC

Effective in wet environment.<sup>10</sup>



## BACTERIOSTATIC

Blocks bacterial growth for an average of 7 days.<sup>10-12</sup>



## SCLEROSANT

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



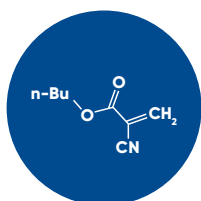
## LIQUID EMBOLIZING AGENT<sup>20-81</sup>

Injected into a blood vessel polymerizes building a cast adheres to the vessel occluding it such as an embolus. It causes completely and definitively occlusion without any recanalization, equivalent to surgical ligation.

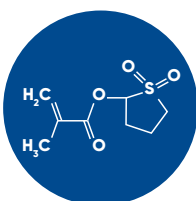
Tailored dilutions with Lipiodol allow a great modulability of Glubran<sup>®</sup> 2, adaptable to a large variety of cases:

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

- > 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 48h<sup>2</sup>



**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-Cyanoacrylate<sup>10-13-61-82</sup>
- NO tissue necrosis<sup>10-12-61-63-64</sup>
- Greater elasticity of the cast at the end of the polymerization<sup>4-6</sup>

Appearance

**TRANSPARENT**

Odour

**TYPICAL OF CYANOACRYLATES**

Density

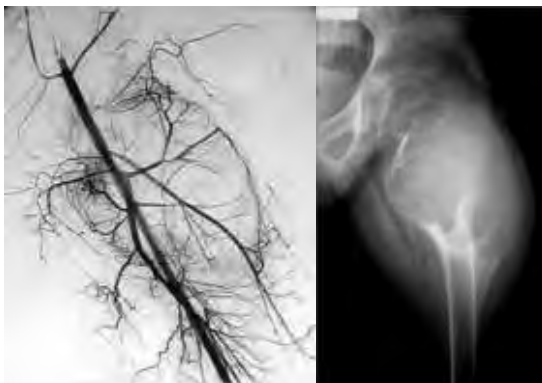
**SIMILAR TO WATER**

# INTERVENTIONAL RADIOLOGY

## PRE → POST EMBOLIZATION

### BODY <sup>20-58</sup>

#### ARTERIAL EMBOLIZATION FOR BONE TUMOURS <sup>31</sup>

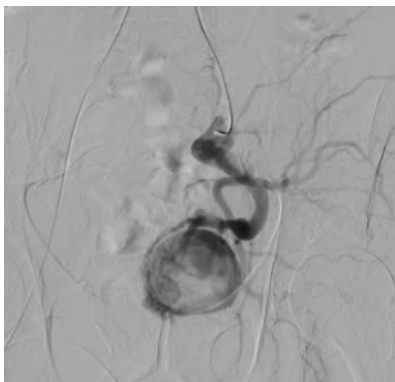


Pre-embolization

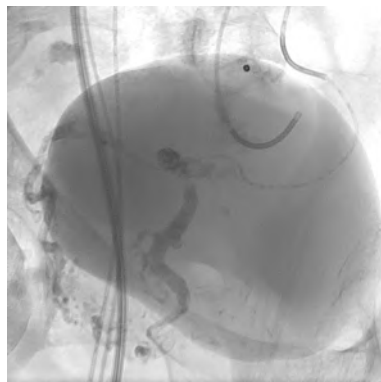


Post-embolization

#### PELVIC AVM <sup>83</sup>



Pre-embolization

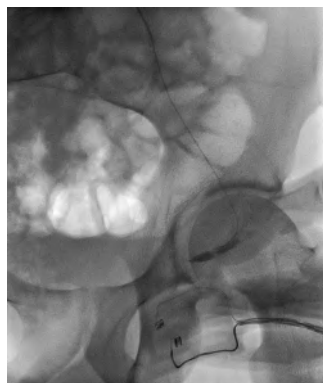


Post-embolization

#### VARICOCELE <sup>83</sup>



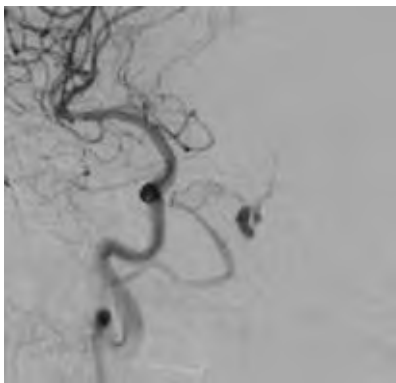
Pre-embolization



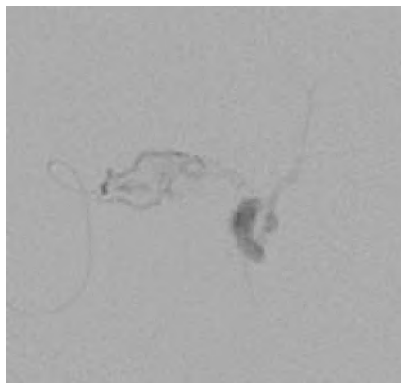
Post-embolization

# HEAD & NECK <sup>59-81</sup>

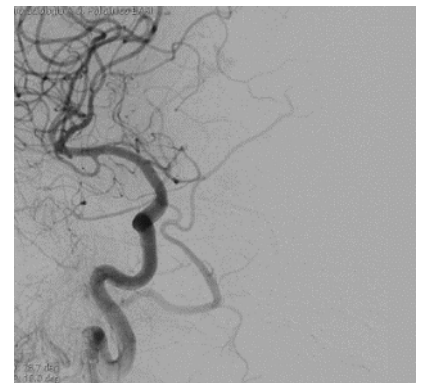
## DURAL FISTULA <sup>62</sup>



Pre-embolization

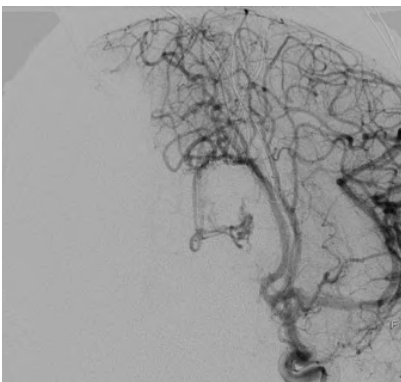


Microcatheterization

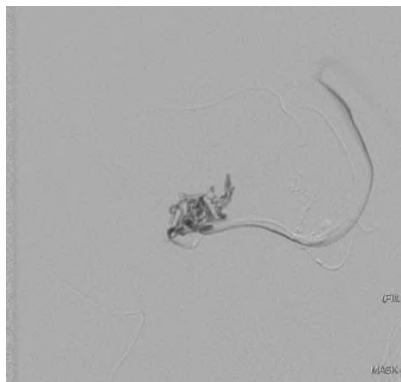


Post-embolization

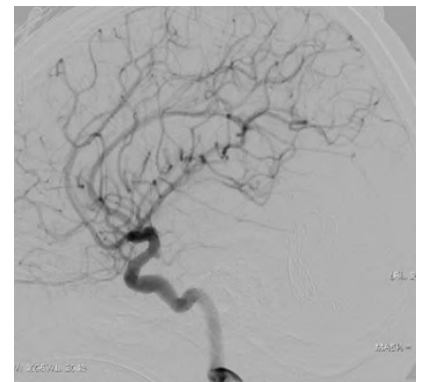
## INTRAVENTRICULAR BLEEDING <sup>62</sup>



Pre-embolization



Microcatheterization



Post-embolization

## AVM HEMORRHAGE IN A YOUNG PATIENT <sup>62</sup>



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



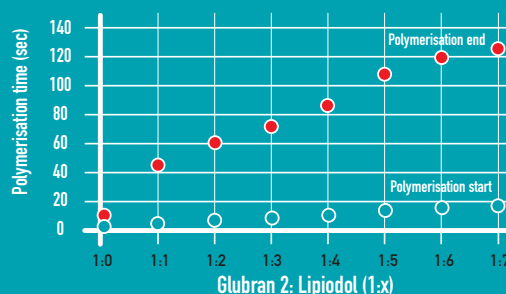
## 4. Dilute with Lipiodol®:

- 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 ratios<sup>84</sup>

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

