

Vascular Occluders

Intended for Animal Research Only

Instruction Manual

Item #'s 18080-01, 18080-02, 18080-03

Intended Use

A Vascular Occluder cuff is wrapped around the exposed vessel and secured in place using suture material passed through the eyelets. Air or liquid is then injected into the actuating tube by a syringe, inflating the diaphragm and compressing the vessel into partial or full occlusion.

Required Materials (not included)

- 20 gauge blunt needle
- 10cc syringe
- Suture material

CAUTION

- Occluder should be tested prior to each implantation for patency (see page 5).
- Do not exert excessive pressure on the diaphragm as bursting may result.
- Do not inflate unsutured occluders as damage or bursting may result.
- Use extreme caution when using sharp objects during implantations. The occluder diaphragm and actuating tube can be easily cut or pierced.

Testing Procedure

Prior to each implantation, the occluder should be tested for patency:

- Secure the cuff ends together by tying suture material through the eyelets of the occluder before inflating.
- Insert a 20 gauge blunt needle into the occluder's actuating tube.
- Inject a sufficient amount of air or liquid into the tubing to achieve full occlusion—**DO NOT OVERINFLATE** as bursting may result.
- Hold pressure for 30 seconds while observing for possible leaks.
- **Prior to first use**, repeat the Testing Procedure 4-5 times to relax diaphragm.

Calibration

Observe and note the air pressure or liquid volume required for varying degrees of occlusion as the same degree of occlusion can be expected after implantation. For greater accuracy, calibrate this device in conjunction with a pressure gauge, flow meter and a simulated flow system.

Directions

IMPORTANT before implantation, follow the Testing Procedure outlined on page 5.

1. Select the occluder size that provides a slightly loose fit around the subject vessel to avoid unintentional constriction.
2. Wrap the occluder cuff around the exposed vessel and secure it in place using suture material passed through the eyelets and tied securely.
3. Exteriorize the actuating tube through a convenient incision.
4. When used with a flow transducer, position the occluder distally (downstream) from the transducer. If positioned upstream, the vessel will collapse during occlusion.

Post Implantation Testing

Occlusion may be determined in continuous implantation by any of the following methods:

- a. Obliteration of phasic flow patterns displayed by the vessel under study. This is the recommended method for accurately determining zero-flow baseline in small vessels.
- b. Noting the amount of air pressure or liquid volume injected according to the testing procedure performed prior to implantation (see page 5).
- c. Monitoring inflation by injecting radiopaque fluid instead of water and viewing fluoroscopically.

Occlusion Duration

Short-term occlusion of up to one hour may be maintained successfully using water or saline solution if pressure is applied slightly in excess of what is required to achieve full occlusion.

Long-term occlusion cannot be maintained with water due to its tendency to transpire through silicone rubber. For long-term occlusion, selecting a liquid such as glycerine is recommended. Glycerine does not transpire or evaporate through silicone rubber, nor will it cause damage to the device.

Helpful Hints

The occluder may be activated by either pneumatic or hydraulic methods. Satisfactory results can be expected by injecting air, inert gas, or various liquids into the actuating tube. Some researchers prefer air because of its simplicity, availability, and ease of pressure control. Others prefer water or saline solution, especially for longer occlusion times (up to one hour). As a precaution, sterile saline solution or sterile distilled water is recommended for use with this device in case fluid is accidentally released into the animal.

Care & Maintenance

Immediately following each use this device should be thoroughly cleaned to remove all organic residues. This device is autoclavable and can be sterilized by appropriate cold sterilization methods.



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