



## **Interventional Neuroradiology: Patient Information**

Patients are seen in the office for history, examination and discussion of the various types of treatment options for their particular neurovascular or spine problem. This will include a discussion of risks and benefits of the procedure and all questions are answered. Written consent forms are included in the pre-procedure evaluation. All Neurovascular patients are evaluated as needed by a team of doctors including Neurosurgery, Neurology, and Anesthesia specialists prior to intervention.

Patients are instructed not to eat or drink anything after midnight before a procedure. Medications may be taken in the morning of the procedure with a sip of water only. Certain medications may be held for a day or two such as glucophage. Patients taking coumadin usually need to be admitted a couple of days prior to angiography for conversion to heparin.

On the day of the procedure usually patients are asked to arrive at MGH in the Ellison 2 Radiology Reception Desk at 7 a.m. Following standard intake procedures with our Nursing staff, patients are brought to the Interventional Neuroradiology office where laboratory tests, history and physical exam are reviewed as well as written consent obtained. Patients are then brought to the procedure suite and prepared by our nursing staff with medications to provide conscious sedation for diagnostic angiography or by the Anesthesiologist for treatment procedure. For treatment procedures, patients may be placed under general anesthesia with a breathing tube. During the procedure patients are monitored by heart rate, blood pressure and oxygenation.

For most angiography access to the arterial or venous system is safely via the femoral artery or vein in the hip area. Local anesthesia is always given before catheters are placed. The angiogram is done with administration of contrast in an artery and a rapid set of x-rays analogous to time elapsed photography. As part of this we may obtain a 3D Rotational Angiogram. Here the x-ray tube rotates around the patient collecting images. The tube then moves in reverse while contrast is given. The images are subtracted and reconstructed into a 3 dimensional model. Typically, the two carotid arteries in front and the two vertebral arteries in the back of the head are studied, so the angiogram may last from 1-3 hours. Afterwards, the puncture site must be compressed manually and the leg held straight for up to 6 hours to allow the artery to heal sufficiently before discharge. Most patients undergoing diagnostic angiography need to stay in the hospital for 3-6 hours depending on the type of catheter used and the type of closure used. This may include Syvek patch, Perclose device or simply manual compression. Patients are always seen by a physician prior to discharge.

### **Interventional Neuroradiology Program, Neurovascular Service**

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Treatment procedures may last from 3-7 hours. In some cases a sheath may remain in place for a day following the procedure as certain anticoagulation regimens may be used. Patients undergoing a treatment procedure are usually in the hospital for an average of 3 days. The first of these is spent in the Neuro-Intensive Care unit for close monitoring. Many spine procedures are accomplished as single day admissions and patients go home the same day although more complex situations may require overnight admission.

After angiography or treatment, patients are instructed to avoid heavy lifting or exercise for 10 days and avoid swimming for 5 days. If bleeding should occur patients are instructed to go to have someone apply direct pressure to the site and go to the nearest emergency room. Following discharge from the hospital all treatment patients are seen in the office three weeks afterward. We follow our patients with aneurysm treatment over 5 years with plain films and angiograms to insure optimal care.

Spine procedures are typically 1-2 hours in duration and many are accomplished as same day surgery. This includes patients undergoing vertebroplasty, kyphoplasty and nucleoplasty. Most procedures are performed using conscious sedation with patients kept awake but given medications through an IV for relaxation and pain control. Following treatment patients are observed for several hours in the hospital. Kyphoplasty may be done under general anesthesia possibly requiring an overnight stay in the hospital.

*The Neurovascular Service at Massachusetts General Hospital provides a multidisciplinary approach to patient care that combines neurosurgery, neurology and interventional neuroradiology. Based in the Department of Radiology, the Neurovascular Service's Interventional Neuroradiology Program uses minimally invasive procedures to treat a range of neurovascular disease and spinal disorders. For more information, visit [www.mgh-interventional-neurorad.org](http://www.mgh-interventional-neurorad.org)*

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