Posterior Fossa Craniotomy, Decompression of Trigeminal Nerve (TIC) (CPT 61595)

General: Patients are normally elderly and symptomatic with facial nerve (trigeminal) neuralgias. Most take medications e.g. tegretol to relieve the pain. Distribution of neuralgias are usually limited to one of the three branches of the trigeminal nerve. Note the side (R vs L). Ask patient if pain is triggered by the face being touched, mouth opening etc. so that if possible you avoid stimulating the pain. Surgery involves microvascular decompression (moving a blood vessel away from nerve (Teflon), or rhizotomy (cutting part of the nerve). BEAP monitoring (8th nerve) will be used frequently.

Preop: Premedicate with up to 2 mg of midazolam.

Monitors: Routine monitors. Arterial catheter and Foley catheter after induction of anesthesia.

Anesthesia: Goals are to provide brain relaxation for good surgical exposure and to maintain adequate CPP (at least 70 mmHg) to prevent cerebral ischemia from brain retraction. Patients typically receive 1-2 g of Cefazolin and 1 g/kg of mannitol on skin incision (confirm with the surgeon). Induction with propofol. Fentanyl 5 µg /kg in divided doses throughout induction, prior to intubation. Tape eyes, insert esophageal temperature probe, and one additional IV. Patient will be supine with a “bump” and head turned. Check the position of the head and the endotracheal tube after Mayfield pins have been secured. There will be limited to no access to the endotracheal tube. Secure accordingly. Consider using an armored endotracheal tube. Maintain anesthesia with propofol infusion, low dose inhalation agent (less than 0.5 MAC), and a fentanyl infusion 2 µg /kg/hr. Muscle relaxation may be requested during the sensory mapping portion of the trigeminal nerve. Remember the increased dose requirements for muscle relaxants in patients taking tegretol. Use moderate hyperventilation (PaCO₂ 30 mmHg). Maintain euvoolemia (Lactated Ringer’s). Opening will be next to the sigmoid sinus (potential bleeding or air embolus). Manipulation of the trigeminal nerve may cause sudden, short lived (5 min) hypertension and reflex bradycardia. Mostly does not require treatment unless it provokes bradydysrhythmia, or surgical site bleeding. The most effective treatment is an IV bolus of propofol or nitroglycerine, 50-100 µg. Fentanyl infusion is usually stopped at the beginning of closure. Closure may be rapid because there is no bone flap. Reverse residual neuromuscular relaxation after Mayfield pins have been removed.

Potential complications: Sudden increase in blood pressure (and reflex bradycardia) with manipulation of the trigeminal nerve. Bleeding from intracranial vessels (rare).

Recovery: Wake patient up, and extubate immediately after the operation to allow neurologic examination. Prevent postoperative hypertension (labetalol) to avoid bleeding into the posterior fossa. Do not allow persistent coughing and bucking on the endotracheal tube. Use a hemodynamic monitor and supplemental oxygen during patient transport to ICU.