The estimated incidence of intracranial hemorrhage (ICH) in patients with Idiopathic thrombocytopenic purpura (ITP) is estimated to be less than 1 in 100 (1) and the mortality rate once an ICH occurs can be as high as 42%. (2) A 3-year old Down syndrome patient with steroid refractory ITP presented to our emergency department with sudden inability to move the right side of his body. Past medical history was significant for ITP which was diagnosed 2 weeks prior, a repaired atrio-ventricular canal, and congenital hypothyroidism. On physical examination he had typical Downs facies, extensive bruising to his face, and decreased spontaneous movement of the right upper and lower extremities. Laboratory test revealed a hemoglobin of 8.7 g/dL and a platelet count of 2K/mm3 with a normal PT/PTT. A CT scan obtained prior to surgery showed a massive left frontal intraparenchymal hemorrhage with vasogenic edema without midline shift. (Figure 1) After the neurosurgical service determined the patient was not a candidate for neurosurgical intervention, the patient was scheduled for an emergent splenectomy and post procedure CT scan.

Cerebral protection against increased intracranial pressure (ICP) and further propagation of the ICH was achieved using a smooth intravenous induction with lidocaine, fentanyl, propofol, and rocuronium. An arterial catheter was placed in the left radial artery for frequent assessment of hemoglobin and continuing postoperative care. Three percent normal saline and mannitol were given intraoperatively in an attempt to minimize cerebral edema. Platelets were administered following removal of the spleen and post-operative labs showed that the platelets had rebounded to 280K/mm3. The patient required PRBCs for a hemoglobin of 6.4 g/dL during the surgery. The immediate post-procedure CT scan was obtained and demonstrated no progression of the ICH. The patient was then transferred to the intensive care unit intubated and in stable condition. He was extubated about 4 hours after arrival and the rest of his hospitalization was uneventful. On the sixth postoperative day, he was discharged home and was scheduled to follow up with multiple specialties. Eventually, the child had completely returned to baseline with the use and function of his right side per the follow-up visit.

This case presents a unique challenge for the anesthesiologist as it requires a consideration of ICP, changing hemodynamics, and constant threat of ongoing ICH. Our anesthetic plan did not result in any further propagation of the ICH as was demonstrated by a post operative CT scan. Even with the possibility of a worsening neurologic outcome, the treatment for this patient was a surgical intervention and careful anesthetic management.

References: