Intracranial bleed would necessitate discontinuation of ECMO and removal from transplant list. Evaluation imperative. Neurologic status now questionable. During 7th week, pt developed pupillary asymmetry. Multisystem organ failure, disseminated intravascular coagulopathy, severe persistent pulmonary hemorrhage, and sepsis complicated by acute respiratory distress syndrome (ARDS), failed conventional and high frequency oscillatory ventilator management, and was placed on VV ECMO soon after arrival. His course was complicated by sepsis, ARDS, failed conventional and high frequency oscillatory ventilator management, and was placed on VV ECMO soon after arrival. His course was complicated by sepsis, acute respiratory distress syndrome (ARDS), disseminated intravascular coagulopathy (DIC) and multi-organ system failure. Despite aggressive multidisciplinary management we were unable to wean off VV ECMO. During the seventh week of his course assymetrical pupils were noted on exam. At this time he was undergoing evaluation for possible lung transplantation. The crux lies in the difficulty of achieving a reliable neurologic exam in patients that are often deeply sedated and occasionally paralyzed. Frequently, the first signs of neurologic compromise in these patients are asymmetrical pupils. However, transporting these often hemodynamically unstable patients on ECMO is considered to be very dangerous. We report the successful and safe use of a new portable CT scanner on an adolescent male patient on Veno-Venous (VV) ECMO with concerning pupillary changes who was too unstable to transport for conventional CT imaging. We were able to perform a CT scan at the patient’s bedside in a safe and easy fashion. The scan actually demonstrated no evidence of intracranial hemorrhage and we were able to continue further support on ECMO. Further, we were able to compare these images with conventional CT images of the same patient and determined the quality of portable imaging to be equal to conventional CT. Thus we maintain that portable CT scanning has important uses in certain patients on ECMO.