INTRODUCTION: We report 3 instances of orthostatic headache (OHA) due to intracranial hypotension (ICH) in 2 preadolescent/adolescent children that appear to have resulted from post-traumatic causes and the immediate resolution of symptoms by single site insertion of epidural catheters used to place cervical/thoracic/lumbar epidural blood patches (EBP) over multiple spinal levels. These cases are novel in that: 1) the EBPs were placed via epidural catheters in order to spread the EBP over multiple spinal levels without multiple needle accession points to the epidural space, 2) there are few reports of OHA due to idiopathic and post-traumatic ICH in 11-13 year-old patients, and 3) the cases demonstrate that EBPs can be applied in the cervical area via an epidural catheter introduced from the low thoracic interspace and the sacral hiatus.

CASE 1: A 13 yo 43.3 kg girl underwent an anterior C6-7 spinal fusion with C6-7 disectomy for C6-7 subluxation from an automobile accident. Four weeks later, she developed postural headache with nausea, emesis and photophobia. MRI spine revealed fluid in the neural foramina from T1-L2. Treatment with IV caffeine citrate, caffeinated beverages and IV hydration improved symptoms only temporarily. Under deep sedation, a 19 G gauge Arrow FlexiTip Plus epidural catheter with wire stylet was introduced at T11-12 via a 17 G Touhy needle and threaded rostrally. Autologous blood was injected as 5 ml aliquots from C7 to T9-10 for 30 ml total. OHA resolved within 24 hours.

CASE 2: An 11 yo 32.2 kg boy presented with OHA, intermittent nausea and tinnitus of 3 months duration after turning his head abruptly. Cervical spine MRI was normal. Physical therapy did not improve symptoms. One month later, repeat MRI cervical and thoracic spine revealed a syrinx at T6-7 level. Intracranial pressure monitor showed lower pressure with sitting, standing and when symptomatic as well as showing higher pressures and reduced symptoms when recumbent. Caffeine/hydration were ineffective. Under deep sedation, a 19 G Arrow FlexiTip Plus epidural catheter with wire stylet was introduced though the sacral hiatus via a 16 ga Jelco® catheter and 10 ml autologous blood was injected in the C5-T2 junction as two 5 ml aliquots. OHA resolved within 24 hours.

Two years later, the same patient, now 13 yo and 54 kg, presented with OHA and neck pain, developed after turning his head and thorax quickly. Caffeine/hydration and muscle relaxants were ineffective. Head/neck CT and neck MRI were normal. CT myelogram showed a leak in the T12- L4 epidural space. Tc-99m indium 111 DTPA radionuclide cisternography suggested a CSF leak at T2-3. A 19 G Arrow FlexiTip Plus epidural catheter with wire stylet introduced via sacral hiatus via a 16 ga Jelco® catheter, 20 ml autologous blood was injected as 5 ml aliquots from T9-L1. OHA resolved by the time of emergence from deep sedation.

DISCUSSION: For uncooperative pediatric patients with ICH and OHA, a rostrally-threaded epidural catheter under deep sedation is an effective means of applying an EBP over multiple spinal levels with a single epidural access site to the epidural space caudal to the spinal cord. Such an intervention is performed only after other conservative measures have failed. Given that neither of these patients at these ages would tolerate conscious sedation, spinal cord monitoring might be considered for this procedure.