Tranexamic Acid (TXA) is a commonly used anti-fibrinolytic agent in pediatric surgery. Side effects are rare; these include nausea, flushing, headache, and possibly thrombosis. Yet, in rare instances, it can cause anaphylaxis. There is only one previously reported case in a 72 year old patient. We report the first case of an anaphylactic reaction in a pediatric patient undergoing posterior spine fusion, and discuss the intraoperative management of the acute event, immunologic confirmation, and subsequent anesthetic approach.

CASE REPORT

G.R. is a 15 year old male, 50.8 kg, 150 cm, with neuromuscular scoliosis (60 degree right thoracic, 40 degree left lumbar) scheduled for T2–pelvis posterior spinal fusion. PMH: relevant for severe mixed central and obstructive sleep apnea, AHI 83, restrictive lung disease, hydrocephalus s/p ventriculoperitoneal shunt, and developmental delay. Previous anesthetics with no complications, and no family history of anesthetic complications. He has intolerance to oral Acetaminophen.

First Anesthetic:
Induction: Inhalational Sevoflurane followed by Fentanyl, Propofol, and Rocuronium for intubation.
Maintenance: TIVA with Ketamine (5 mg/kg/hr), Propofol (200 mcg/kg/min), and Remifentanil (0.2 mcg/kg/min). TXA (bolus 5 mg/kg followed by infusion 5 mg/kg/hr). Cefazolin (20 mg/kg) for antibiotic prophylaxis.

Event: 2 Hours and 30 minutes into surgery, sudden severe hypotension and tachycardia; with no change in ETCO2 or peak inspiratory pressures. Neuromonitoring signals were also decreased. At the time: I/O: 1800mL crystalloid, 250mL Albumin, EBL 100mL. Yet, suspecting hypovolemia, initial treatment included a fluid bolus (500mL), Ephedrine (three boluses of 5mg), and an ABG was drawn → no improvement.

Immunology was consulted, and after satisfactory recovery and discharge to home on post-operative day seven, an Anesthesia Allergy Panel (skin prick testing) was performed, revealing a highly positive reaction solely to TXA.

Second Anesthetic:
Induction: Inhalational Sevoflurane followed by Alfentanil and Propofol for intubation.
Maintenance: TIVA with Propofol (150 mcg/kg/min) and Remifentanil (0.2 mcg/kg/min). I/O: 3700mL crystalloid, 500mL Albumin, 500mL cell saver, EBL 700mL. The patient remained hemodynamically stable, and Morphine was administered after a neurological exam was performed. His post-operative course was unremarkable, and he was discharged home post-operative day five.

CONCLUSIONS

- Upon review of the literature, the first reported case of anaphylaxis to TXA involved a 72 year old man, who received a bolus of TXA during coronary artery bypass graft surgery.1
- Other adverse reactions to TXA include bullous and fixed-drug reactions, pruritus, urticaria, and angioedema.2 These reactions, however, are rare.
- While the utility of TXA has expanded, it is important to be aware of the possibility of an anaphylactic reaction with its use.

REFERENCES