Introduction: Topical hemostatic agents are used to control surgical bleeding, specifically in cardiac and spine surgery. Some are composed of an animal derived (bovine) gelatin combined with thrombin in a thick liquid consistency; providing a matrix for platelet adhesion and aggregation while thrombin aids in fibrin clot formation. The animal derived gelatin component has known allergic potential. We report 2 cases of intraoperative anaphylaxis to topical hemostatic agents resulting from previously undiagnosed gelatin allergy.

1) A 14 year-old male with a history of meningomyelocele presented for anterior spinal fusion. He was wheelchair bound with a neurogenic bladder and seasonal allergies. He reported allergies to apples and bananas and was on latex precautions, but denied a history of anaphylaxis. The patient was brought to the OR and underwent uneventful induction followed by endotracheal intubation and arterial line placement. Perioperative antibiotics were administered. 5 hours into the case the patient developed hypotension, tachycardia, and bronchospasm. This occurred shortly after the surgeons placed a large amount of hemostatic matrix (Floseal) on a bleeding vessel. The patient was immediately treated with epinephrine with transient improvement. An epinephrine infusion was initiated, surgery was aborted, and he was taken to the ICU where he was weaned off the epinephrine nearly 10 hours later and extubated. Tryptase levels drawn were elevated, while allergy testing revealed a positive skin test to bovine gelatin.

2) A 2.5 year-old girl with a history of repaired Tetralogy of Fallot presented for detethering of her spinal cord. After uneventful mask induction, IV placement, endotracheal intubation and surgical procedure, the child developed hypotension with elevated peak airway pressures during closure of the surgical wound. She received antibiotics prior to incision, over an hour prior to the incident, and no muscle relaxant was given. The child had received no IV drugs from the anesthesiologist in the 30 minutes prior to the reaction. Upon removal of the drapes, the child had diffuse hives and a diagnosis of anaphylaxis was made. The patient was treated with fluids, albuterol, steroids, and ephedrine. She stabilized and was taken to the ICU where she was extubated 6 hours later. Postoperative testing revealed a positive skin test to gelatin. On review, the surgeons had placed absorbable gelatin sponge (Gelfoam) into the wound immediately prior to closure. Records showed she had been exposed to Gelfoam during her previous cardiac surgeries and she had, in fact, had an anaphylactic reaction at home to enteral gelatin.

Discussion: We must be prepared to diagnose and treat anaphylaxis at any point in a procedure. Medications used intraoperatively, but not administered directly by anesthesiologists, should be considered when such reactions occur. With the increasing use of hemostatic agents, we must be aware that agents used on the surgical field can pose risk to our patients, especially those patients who may be previously sensitized through past surgical procedures or vaccinations.

Reference:
Hepner et. al. Anaphylaxis During the Perioperative Period. Anesth Analg 2003; 97:1381-95