

## **Abstract Presentation Submission Format – Case Report**

Title: Cardiopulmonary Complications after Injection of a Hemostatic Gelatin Agent into Vertebral Bone Under Pressure

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Conflicts of Interest: There are no conflict of interest disclosures from any authors.

### **Background:**

Topical hemostatic agents in the form of liquid gelatin solutions are often used in spinal deformity surgery with pedicle screw instrumentation to achieve hemostasis. Allergies to animal gelatin have been reported, inducing anaphylaxis after use of these products.<sup>1-4</sup> Injection of these substances into the closed vascular cavity of the vertebral body and risk of resultant rapid entry into the cardiopulmonary system is worth emphasizing given the potential for life-threatening complications.

### **Case:**

A 7-year-old boy with congenital scoliosis and surgically corrected Tetralogy of Fallot underwent posterior spinal instrumentation with fusion and hemivertebra resection. Documented allergies prior to surgery included midazolam and fentanyl. Thoracic vertebrae were exposed, the T9 pedicle was isolated, and the vertebra was cannulated. Several milliliters of bovine-derived hemostatic agent were administered intraosseously under digital pressure. Approximately ten minutes later, anesthesia noted transient hypotension and increased end tidal CO<sub>2</sub> levels. At thirty minutes, hemodynamic status worsened. The incision was quickly closed, and cardiac resuscitation was activated as there was no pulse. An echocardiogram after return of circulation showed no embolus and normal cardiac function. An hour after intraosseous gelatin injection, a full-body urticarial rash was noted. A tryptase level was 22.7 ng/mL (nl <11.5). The patient experienced no further hemodynamic instability. The surgery was successfully completed without liquid gelatin products the following week.

### **Discussion:**

In this case, pressurized administration of a hemostatic agent into the closed space of the vertebral body was associated with sudden anaphylactic reaction. An emerging body of literature suggests adverse events accompanying the use of these agents may increase morbidity and mortality risk in surgeries of spine deformities. Surgeons will need to assess the benefit of using these hemostatic agents, especially in patients with past surgical history and potential sensitization to these products. Completing a thorough allergy history or preoperative immunology consultation can assist with decisions.

#### References

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