



Diagnosis of Bleeding Disorder after Ventilation Tube Placement

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Introduction

Significant bleeding with ventilation tube placement is a rare occurrence. Since tubes are usually placed without significant blood loss, postoperative bleeding raises concern for a bleeding disorder. The most common congenital bleeding disorders are von Willebrand Disease (vWD), hemophilia A, and hemophilia B with incidences of 1:10,000, 1:5,000, and 1:50,000, respectively.

Bleeding disorders are often asymptomatic and lack a personal and family history of bleeding until a major trigger occurs, such as surgery or trauma. Mild forms of vWD, the most common bleeding disorder in humans, may manifest during surgical procedures.

Coagulation tests are generally not conducted prior to outpatient elective surgery due to high false positive rates and the risk of misdiagnosis/treatment of patients

In this case report, two children diagnosed with bleeding disorders following ventilation tube placement are discussed. To our knowledge, this has not been previously reported in the literature.

Methods

Chart review of pediatric cases with significant bleeding following ventilation tube placement resulting in diagnoses of bleeding disorder.

Documentation of the procedure, as well as surrounding history and lab results were noted.

Results

Case 1:

- A 2-year-old female, history of otitis media, scheduled for bilateral myringotomy and ventilation tube insertion (BMT).
- No prior history of bleeding.
- Following BMT, recurrent bleeding occurred; suction and multiple doses of oxymetazoline were required.
- Hematology consulted and post-operative coagulation studies were as follows:
 - INR of 1.2 (Reference range: 0.9-1.1)
 - PT of 14.7 seconds (Reference Range: 12.0-14.2)
 - PTT of 49 seconds (Reference range: 23-35).
 - Factor VIII deficiency.
- Patient diagnosed with mild vWD.

Case 2:

- An 8-year-old male, history of corpus callosum dysgenesis, cerebral palsy with spastic quadriplegia, developmental delay, and chronic lung disease; scheduled for BMT.
- History of epistaxis requiring intubation x 2, negative bleeding disorder workup.
- Family history of vWD.
- Minimal bleeding during BMT; reported bleeding from both ears on POD1, persisted to POD2. Patient prescribed Floxin otic drops.
- Bleeding persisted at one and two week follow-up visits.
- Hematology consulted and coagulation studies were as follows:
 - PTT of 46 (Reference range: 23-35)
 - Factor IX deficiency.
- Patient diagnosed with Hemophilia B.

Discussion

Identification of bleeding disorders in surgical patients has been studied in several specialties. In a study of patients following tonsillectomy, 201 patients (2.9%) had post-operative hemorrhage. Two patients underwent hematologic assessment, with one patient found to have factor VIII deficiency and the other factor XIII deficiency.

In orthopedic surgery, a study of pediatric patients who underwent scoliosis surgeries revealed a high overall incidence of vWD (10.9%). This raised questions of vWD being underdiagnosed, especially due to its variable penetrance and possible relation to other diseases processes.

Performing coagulation screening tests prior to surgery has a low sensitivity and low bleeding predictive value. Referral to hematology for evaluation should be considered when clinicians note intra- or post-operative bleeding in excess of what is routinely seen.

Conclusions

Significant bleeding with ventilation tube placement is rarely found. Coagulation studies may be indicated in patients who have prolonged bleeding following uneventful ventilation tube insertion.

References

- ¹Lippi G, et al. Detection of mild inherited bleeding disorders of blood coagulation: Current options and personal recommendations. *Expert Review of Hematology*. 2015 Aug;8(4):527-42.
- ²Windfuhr JP, et al. Unidentified Coagulation disorders in post-tonsillectomy hemorrhage. *Ear Nose Throat J*. 2004 Jan;83(1):28, 30, 32.
- ³Hassan N, et al. Blood management in pediatric spinal deformity surgery: review of a 2-year experience. *Transfusion*. 2011 Oct; 51(10):2133-41.
- ⁴Patel RI, et al. Preoperative laboratory testing in children undergoing elective surgery: analysis of current practice. *J Clin Anesth*. 1997 Nov;9(7):569-75.