**Introduction**

Topical vasoconstrictors that minimize bleeding and improve visualization are routinely used to facilitate pediatric nasal endoscopic procedures. Oxymetazoline (Afrin) has largely replaced cocaine and phenylephrine due to its lower toxicity profile. Though still considered safer alternative, its use presents potential risk to the pediatric patient.

**Case**

A healthy nine year old, 43-kg male presented for bilateral sphenoidotomy and adenoidectomy for retained infection. Following standard induction, three oxyometazoline-soaked pledgets were placed in each nare. Within minutes, the blood pressure increased from 105/67 to 237/123 followed by a decrease in heart rate from 76 to 54. Marked ST depressions were noted. Sevoflurane was increased to eight percent and the surgeons were asked to remove the pledgets. As vasodilators were prepared, his blood pressure gradually decreased to baseline with resolution of EKG changes. Surgery was completed without further complications.

**Discussion**

Oxymetazoline is an imidazoline derivative routinely used for pediatric endoscopic surgeries. It decongests the nasal mucosa by acting as a direct alpha-adrenergic agonist with higher affinity for alpha-1a than alpha-2b receptors.

Per manufacturer, a 0.05% preparation is to be administered via 2-3 sprays per nare. To estimate the recommended dose, six sprays from an upright bottle were squinted into a syringe, resulting in 0.2ml or 100 mcg.

However, the drug is routinely given at our institution via soaked pledgets. The pledgets are soaked in a 30ml container of 0.5% oxymetazoline, then wrung out and placed into each nare.

To estimate the amount of drug our patient received, we weighed six pledgets before and after soaking them in oxymetazoline. The total added weight of oxymetazoline was 8 grams (8ml). Prior studies have estimated a 35% absorption of topical cocaine from nasal pledgets (2). Assuming a 35% absorption, our patient would have absorbed 2.8ml or 1400 mcg of oxymetazoline, 14 times the recommended dose.

**Conclusion**

Pediatric patients are at risk of toxicity from improper oxymetazoline administration. Several other case reports of oxymetazoline toxicity have been described (3, 4).

Recognizing oxymetazoline toxicity is critical as reflex bradycardia can be delayed and administration of a beta-blocker during unopposed alpha stimulation may be fatal. As hemodynamic effects are often self-limited, increasing inhalational agents and short-acting vasodilators are recommended for treatment.

Increased awareness of the potential toxicity form different routes of administration will hopefully increase the safety profile of oxymetazoline.

**References**


