Endoscopic Adenoidectomy Secondary to Drug-induced Trismus

Mark Greenberg M. D.¹, Daniela Carvalho M. D.²
¹Department of Anesthesiology and Pediatrics University of California, San Diego, USA
²Department of Otolaryngology, Head and Neck Surgery University of California, San Diego, USA
E-mail: mgreenberg@ucsd.edu
Received June 15, 2010; accepted July 13, 2010

Abstract

We present the case of a 4 year old girl whose adenoidectomy had to be performed via an endoscopic-transoral approach due to the unexpected inability to fully open the mouth during the procedure. The patient had previously been taking Risperidone for behavioral symptoms associated with her autism. The jaw tone returned to normal following the procedure and there were no complications. An interaction between the Risperidone and the anesthetics were the likely cause of the trismus.

Keywords: Adenoidectomy, Endoscopic, Trismus, Risperidone, Masseter Spasm

1. Introduction

Adenoidectomy is one of the most common same-day surgeries performed by otolaryngologists. One of its indications is to reduce the size of hypertrophic adenoids which can cause airway obstruction [1]. Normally, the procedure is performed transorally using a laryngeal mirror to indirectly visualize the anatomy of the nasopharynx. Some physicians perform transnasal adenoidectomy. We present the case of a 4 year old girl whose adenoidectomy had to be performed via an endoscopic-transoral approach due to the unexpected inability to fully open the mouth during the procedure.

2. Case Report

A four year old, 17 kilogram female, with a history of obstructive sleep apnea and chronic otitis media was scheduled to undergo an adenoidectomy and bilateral myringotomy with tube placement. She had a significant history of environmental allergies. She also had a history of autism, and was on Risperidone. Pre-operative examination revealed bilateral serous middle ear effusion and was otherwise normal.

After inhalational induction of anesthesia with Sevoflurane and nitrous oxide, the myringotomy and tube placement was accomplished with a laryngeal mirror. Some difficulty was noted with visualization of the adenoids transorally. We present the case of a 4 year old girl whose adenoidectomy had to be performed via an endoscopic-transoral approach due to the unexpected inability to fully open the mouth during the procedure.
patient was found to have normal movement of the TMJ. The patient recovered well with complete resolution of her sleep apnea. On follow-up, at 1 and 6 months after the procedure, the patient continued to have no issues with trismus or TMJ pain.

3. Discussion

Adenoidectomy is a routine procedure for otolaryngologists. It is most commonly performed transorally with the help of a mouth gag [1]. Several instruments can be used to remove the adenoids, including a curette, adenotome, suction cautery, Coblator® and a microdebrider. Another method is to remove the adenoids transnasally with the use of nasal instruments to visualize and remove the adenoids with powered instruments [2,3]. There has also been reported the use of the transnasal visualization with transoral access of the adenoids [4]. All techniques have different advantages and complications. Most surgeons in the UK do not use direct visualization of the adenoids during the surgery. They use indirect palpation instead [5]. Visualization of the adenoids provides the ability to remove the adenoids with more control of the bleeding and surrounding structures. For this reason, in our institution, an adenoidectomy is performed using indirect visualization through a mirror. Some authors report the use of endoscopes through the nose to visualize the adenoids, while these are removed through the mouth. A solid or present habit at the time of the examination, we were not able to perform the surgery in the conventional fashion for our institution. As mentioned above, we utilize indirect visualization of the adenoids through a mirror in the oral cavity and the removal of the adenoids performed through the nasal cavity with a curette, suction cautery or microdebrider. In this specific patient, after evaluation of the adenoids through the nasal cavity it was felt that her nasal cavity was small for a larger endoscope, suction cautery or a large microdebrider. We opted to visualize the adenoids through the mouth with a 70-degree endoscope and use suction cautery to promote the most efficient hemostasis and prevent bleeding. Despite the poor mouth opening, this was performed without difficulty.

Our patient had an unexpected episode of trismus that did not improve with the time, in creasing the anesthetic depth or the use of muscle relaxants. Trismus in awake children is usually secondary to trauma to the mandible or problems in the condyle. Our patient’s trismus occurred after induction and subsided once she recovered from anesthesia. At the time of surgery she was taking both Risperidone and Risperidone. In her hom, unilateral dystonia of the masseter muscle was reported [9]. Risperidone has also been associated with the neurological malignant syndrome, which can result in rigidity [10]. Although this patient exhibited masseter rigidity, she did not have any of the other symptoms associated with this condition. One hypothesis is that the trismus was caused by synergism of the Risperidone with the volatile anesthetic, Sevo flurane. We do not believe that the trismus was the result of inadequate anesthetic depth. The patient had no reason to suspect a surgical etiology and her vital signs demonstrated she was in a deep plane of anesthesia. Succinylcholine itself can cause trismus, but was not the cause in this case, as the trismus occurred before the succinylcholine was given [11,12]. Sevo flurane showed complete ablation of neuromuscular function. The fact that the trismus did not subside with the use of muscle relaxants, but completely resolved after she woke up from the anesthetic, suggests a mechanism unrelated to the succinylcholine. There are no reports in the literature about volatile anesthetics, Risperidone and trismus, but it is likely the muscle spasm in the masseter muscle was the result of the combination of Risperidone and Sevoflurane. One can hypothesize that the patient’s autism had an effect on the brain making the patient more susceptible to trismus. Behaviors such as chewing and teeth grinding, are common in autistic patients [13]. It is possible that either the Propofol or Fentanyl also contributed to the trismus, but this is unlikely given the small doses used.

In summary, this is the first reported case of trismus in association with Risperidone in an autistic patient resulting in the ability to perform adenoectomy in a conventional fashion. When mouth opening is an issue, transoral adenoidectomy using a rigid endoscope in anacceptable alternative. In addition, anesthesiologists should be aware about this potential side effect of Risperidone.

4. References


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