

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 endoscopes for visualization and removal of the adenoids with powered instruments [2,3]. There has also been reported the use of the transnasal visualization with transoral removal of the adenoid tissue [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 direct palpation instead [5]. Visualization of the adenoids provides the ability to remove them with more control of the bleeding and surrounding structures. For this reason, in our institution, adenoidectomy is routinely 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. As our patient had significant trismus, 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 is performed through the same route with a curette, suction cautery or microdebrider. In this specific patient, after evaluating the adenoids through the nasal cavity it was felt that her nasal cavity would be 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 the suction-cautery to promote the most efficient hemostasis and prevent bleeding. Despite the poor mouth opening, this was performed without difficulties.

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 Risperidone. Risperidone is an atypical antipsychotic that is used in children with autism to decrease agitation [6-8]. One of the side effects of this medication is muscle spasm. There is a report of an autistic patient who was taking both Methylphenidate and Risperidone in whom unilateral dystonia of the masseter muscle was reported

[9]. Risperidone has also been associated with the neuroleptic malignant syndrome, which can result in rigidity [10]. Although this patient exhibited masseter rigidity, she had none 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, Sevoflurane. We do not believe that the trismus was the result of inadequate anesthetic depth. The patient had no response to surgical stimulation and her vital signs suggested 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]. Neuromuscular stimulation showed complete abolition 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 with chronic 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 inability to perform adenoidectomy in the standard transoral fashion. When mouth opening is an issue, transoral adenoidectomy using a rigid endoscope is an acceptable alternative. In addition, anesthesiologists should be aware about this potential side effect of Risperidone.

4. References

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