Perioperative airway management of patients with autism spectrum disorder (ASD) is poorly understood. We present the case of a 26-year-old male with a history of severe ASD with tracheal stenosis after percutaneous tracheostomy. He underwent tracheal resection and anastomosis and was successfully managed postoperatively with intubation and chin sutures. While airway management of patients with ASD may be challenging due to unique behavioral needs, careful perioperative attention can result in successful outcomes.

Introduction

There is a paucity of research on perioperative care of patients with autism spectrum disorder (ASD). Current literature recommends enhanced patient communication and individualized treatment plans. Certain procedures, such as surgery involving the airway, may require exceptional patient cooperation to maintain airway patency and promote healing.

Methods and Materials

We report the case of a 26-year-old male with a history of severe autism spectrum disorder (ASD) and choreathetoid movement disorder who underwent percutaneous tracheostomy after prolonged intubation for hospital-acquired pneumonia and movement disorder. Months later, the patient failed decannulation trials. Telescopic laryngoscopy and bronchoscopy revealed suprastomal tracheal fracture and stenosis (Figure 1). The patient became increasingly agitated by his tracheostomy and repeatedly self-decanulated, which posed a life-threatening risk and required twenty-four-hour ICU nursing care. Medical management became untenable, as he began to require dangerously high doses of sedatives and antipsychotics. Options including induced coma, laryngotraceal separation, and tracheal resection were discussed with his family, who desired that the patient be restored as close as possible to his baseline.

Results

After discussion with family, the patient underwent tracheal resection and anastomosis with decannulation (Figure 2). Pathology of tracheal resection showed tracheal fibrosis, consistent with tracheal stenosis (Figure 3). Given the patient’s inability to cooperate due to underlying ASD with choreathetoid movement disorder, postoperatively he was left intubated and sedated with chin sutures to allow for healing of the anastomotic site without tension (Figure 4). The patient was successfully extubated two weeks postoperatively without complication. Repeat endoscopy revealed a patent airway without granulation tissue. The patient was later discharged from the hospital breathing comfortably and without a tracheostomy tube. The patient improved from a behavioral standpoint as well with fewer outbursts. Therefore, we believe a component of his agitation was related to the presence of the tracheostomy tube.

Discussion

Preventing complications after surgery is challenging in patients with ASD due to inherent communication disorders, ritualistic behaviors, and impaired understanding and socialization. Patients with ASD have been shown to function best in familiar, routine, and predictable environments. However, there is a lack of research on perioperative care of patients with autism spectrum disorder (ASD), including airway surgery. A previous case report described the use of a T-tube successfully in a patient with ASD and tracheal stenosis. Notably, however, our patient would not tolerate even tracheostomy secondary to ASD, so a T-tube was not a viable alternative. Other authors have successfully employed chin sutures in uncooperative patients. Orthotic devices designed to maintain neck flexion have also been shown to be successful. However, given our patient’s choreathetoid movement disorder, sutures alone were felt to be inadequate, therefore prolonged intubation was also required.

Conclusions

This case demonstrates the challenges of airway management in patients with severe ASD, and that tracheal resection and anastomosis can be a successful option in select patients, with careful attention to perioperative management.

References