

Rare complication: Tapia's syndrome following shoulder surgery under endotracheal general anesthesia

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Abstract

Tapia's syndrome is a rare disorder, characterized with paralysis of extracranial part of Nervus Vagus and Nervus Hypoglossus, effecting the ipsilateral vocal cord and the tongue. This complication is usually related to intubation and head positioning during surgery. In this study, we report a case with Tapia's syndrome under general anesthesia, following arthroscopic shoulder instability surgery. Patient recovered as short as 3 mo, following complication.

Key words: Tapia's syndrome; General anesthesia; Shoulder arthroscopy; Complication

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Core tip: Tapia's syndrome is a rare postoperative disorder. It is directly related to traction and hyperflexion of the head during surgery. Patients complain from dysarthria and hoarseness on the first post-operative day, which is related to traction and compression injury to N. Vagus and N. Hypoglossus. Early diagnosis and treatment is the most important factor in the success of the treatment.

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INTRODUCTION

Tapia's syndrome is a rare disorder with simultaneous paralysis of N. Laringeus Recurrens (branche of N. Vagus) and N. Hypoglossus, affecting ipsilateral tongue and vocal cord. It was first described in 1904 by



Figure 1 Tongue deviation due to left hypoglossal nerve paralysis.

Antonia Gracia, an otorhinolaryngologist^[1,2]. Although the symptoms and findings may change according to the extent of the damage, common symptoms are: hoarseness, dysarthria and dysphagia^[3]. Most common cause of this rare disorder is general anesthesia, however it may be encountered following trauma, tumors, surgery and infections affecting head and neck^[4,5]. Pressure on the nerve due to the intubation tube's cuff, hyperextension or excessive lateral positioning of the head are possible mechanisms^[2]. Neuropraxy of the nerve usually resolve with medical therapy. Tapia's syndrome is mainly encountered unilateral^[2,6].

CASE REPORT

Twenty-five years old, male patient was diagnosed as right shoulder anterior instability, due to multiple dislocations. Arthroscopic bankart repair was performed under general anesthesia with orotracheal intubation, in a beach-chair position (with a 50° of flexed table) without any external traction or positioning device. Head was secured with straps with proper supports. Surgery was performed in 2 h without any event. Patient complained dysarthria and hoarseness on the first postoperative day. Oropharyngeal examination revealed left hypoglossal nerve palsy (Figure 1). There was no uvula deviation or abnormality of the soft palate elevation. On endoscopic laryngeal examination with 70° rigid laryngoscope, there was left vocal cord palsy. There was no laryngeal or hypopharyngeal edema or hematoma. No other pathological findings were observed on neurological, otorhinolaryngological, head and neck examination. No intracranial or vascular pathology was observed on cranial and cervical magnetic resonance (MR) imaging and MR angiography. Patient was diagnosed as peripheral type Tapia's syndrome and medical therapy was indicated. Intravenous prednisolone was initiated at a dose of 1 mg/kg per day and gradually decreased in a 10 d period. B1-B6 vitamin complex was admitted orally. There was no dysphagia or aspiration complaint, therefore a nasogastric tube wasn't utilized. We observed recovery starting on the 3rd day, and full recovery on the 10th week postoperatively.

DISCUSSION

Tapia's syndrome is a rare disorder effecting ipsilateral tongue and vocal cord, due to injury of N. Vagus and N. Hypoglossus simultaneously. It may be presented as central type with contralateral hemiplegia in addition to effected 10th and 12th cranial nerves intracranially, or as peripheral type where related nerves are effected extracranially^[1].

N. Laryngeus recurrens and N. hypoglossus are in close proximity at upper hypopharynx and lateral of lower hypopharyngeal region, and N. Hypoglossus cross N. Vagus at the anterior surface of the transverse process of the 1st cervical vertebra. These anatomical locations are possible injury sites for both nerves^[1,3,7].

Syndrome possibly occur with neuropraxy of the nerve due to compression, traction or disorders in vascularity. Compression of the intubation tube's cuff or laryngeal mask, traction related to anterior or lateral positioning of the head during surgery are possible neural injury mechanisms. Other causes are traumatic carotid artery injury, tumors located at submandibular or lateral cervical area and chronic infections^[2,3,7-9].

Although it is commonly encountered unilateral, there are rare bilateral cases reported^[6]. Orotracheal intubation is present in most of the cases in the literature. Syndrome encountered more frequently following rhinoplasty and septoplasty and less frequently following shoulder surgery, thoracotomy and cardiac surgery, osteosynthesis of the mandibula fracture and lateral cervical laminoplasty^[2,3,5,7,10].

Symptoms vary according to the extent of the neural damage. Hoarseness, dysarthria, dysphagia and aspiration are most common symptoms^[3,5]. It is diagnosed with laryngeal and neurological examination. MRI and MR angiography are required to exclude intracranial and other pathologies.

Treatment is supportive, with systemic corticosteroids, B vitamin complexes and speech therapy. As the reason for Tapia's Syndrome following anesthesia or surgery is neuropraxy, full clinical recovery is obtained in 3-4 mo. Faster recovery is also reported^[3,5]. We observed fast recovery following medical therapy starting at the 3rd day.

Hoarseness, sore throat, dysphagia are common complications of general anesthesia. However, these complaints particularly following surgeries with cervical hyperextension or lateral positioning, may be related to Tapia's syndrome and medical therapy has to be initiated as soon as possible following diagnosis.

COMMENTS

Case characteristics

Common symptoms of Tapia's syndrome are hoarseness, dysarthria, dysphagia and aspiration in the early postoperative period.

Clinical diagnosis

Presented case complained of hoarseness and dysarthria in the first postoperative day. Patient did not have dysphagia or aspiration.

Differential diagnosis

In the selected cases, intracranial pathologies has to be assessed for central

type Tapia's syndrome.

Laboratory diagnosis

Patient was diagnosed using endoscopic laryngeal examination with 70° rigid laryngoscope. There was left vocal cord palsy.

Imaging diagnosis

No intracranial or vascular pathology was observed on cranial and cervical magnetic resonance (MR) imaging and MR angiography. No other radiological assessment was performed.

Pathological diagnosis

There was left vocal cord palsy. There was no laryngeal or hypopharyngeal edema or hematoma. No other pathological findings were observed on neurological, otorhinolaryngological, head and neck examination.

Treatment

Intravenous prednisolone was initiated at a dose of 1 mg/kg per day and gradually decreased in a 10 d period. B1-B6 vitamin complex was admitted orally.

Experiences and lessons

Hoarseness, sore throat, dysphagia are common complications of general anesthesia. However, these complaints particularly following surgeries with cervical hyperextension or lateral positioning, may be related to Tapia's syndrome and medical therapy has to be initiated as soon as possible following diagnosis.

Peer-review

The case report is very interesting and offers to the reader useful information.

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