

Tapias syndrome after cardiac surgery

To the editor,

Tapia's syndrome is a rare complication with injury to the hypoglossal (XIIth) and vagus (Xth) nerves resulting in a weak voice, increased predilection for aspiration, and difficulty in swallowing. Antonio Garcias Tapia first named this syndrome in a bullfighter with Xth and XIIth nerve palsy after sustaining carotid artery injury resulting in compromised neural blood supply.

Here, we describe the case of a 72-year-old diabetic and hypertensive patient who developed Tapia's syndrome after mitral valve repair. For the procedure, he was intubated with an 8.5 mm ID endotracheal tube (ETT) with cuff pressure maintained below 20 mmHg. A transesophageal echocardiography (TEE) probe was also inserted. The surgical position was optimized using a shoulder roll. The surgery lasted for 7 h. Postoperatively, he was extubated

following 6 h of ventilation. A weak voice and choking were noticed along with deviation of the tongue to the right on protrusion. An indirect laryngoscopy revealed paramedian position of the right cord.

The larynx is innervated by the Xth nerve through the superior and recurrent laryngeal branches. The recurrent laryngeal nerve (RLN) traverses in the tracheoesophageal groove and enters the larynx at the cricothyroid joint. The XIIth nerve exits the hypoglossal canal and passes over the transverse process of the first cervical (C₁) vertebra. Here, it is crossed by the Xth nerve. Also, the Xth and XIIth nerves lie adjacently in the lower oropharynx and the upper hypopharynx.

Traumatic intubation and prolonged ventilation can cause dislocation of the cricoarytenoid and cricothyroid joints. The nerves may also get compressed during laryngoscopy with the head in an extended position at the lateral root of the tongue and at the C₁ vertebrae. The ET tube cuff high up in the larynx compresses the RLN branches against the thyroid cartilage and stretches the hypoglossal nerve against the hyoid bone.^[1] The high-cuff pressure also increases the risk for nerve injury. The risk of nerve palsy increases with advanced age, diabetes, hypertension, and prolonged ventilation.^[2]

The nerves can get compressed at the laryngeal inlet during difficult insertion of the TEE probe.^[3] The throat pack used during rhinoplasty surgery pushes the ETT against the pharyngeal wall increasing the incidence of Tapia's syndrome.^[4] Similarly, the presence of the TEE probe along with the ETT can cause compression of the Xth and XIIth nerves [Figure 1].

The placement of shoulder roll for optimizing surgical position stretches the nerves over the C₁ vertebra and causes cephalad migration of the ETT.^[5]

In our patient, the Tapia's syndrome resulted from a hyperextension of the neck. The additional causative factors might be advanced age, comorbidities, presence of the TEE probe along with the endotracheal tube, and prolonged ventilation. The assistance from the swallow and speech therapy team helped him to regain the vocal cord function within 6 months.

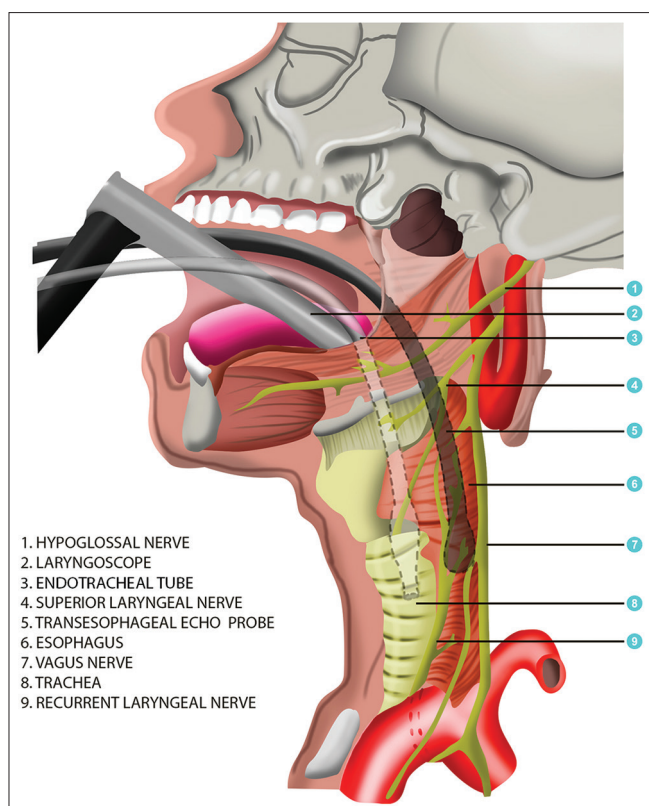


Figure 1: Illustration of the mechanism of hypoglossal and the vagus nerve injury resulting in Tapia's syndrome in the presence of endotracheal tube, transesophageal echo probe, and direct laryngoscope during intubation

A preoperative workup can identify patients at risk of this syndrome. The hyperextension of the neck and high-cuff pressures should be avoided. The endotracheal tube cuff should be placed well below the vocal cords. Although the Tapia's syndrome is rare after cardiac surgery, a delay in its diagnosis can cause serious complications increasing morbidity and mortality.

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Conflicts of interest

There are no conflicts of interest.

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