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# Acute Swelling of the Parotid Gland after Spinal Surgery Under General Anesthesia – A Case Report

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## Abstract

Anesthesia mumps is an acute and transient salivary gland swelling which was described as a very rare complication of anesthesia. We report a case of a 41 year-old Caucasian male, with lumbar disc herniation, scheduled for partial endoscopic L5-S1 discectomy. He was classified as ASA I. He developed a localized swelling of the left parotid gland one hour after the surgical procedure.

It is essential to be aware of this situation and emphasize its importance, since it can progress and become an emergency with airway obstruction.

**Keywords: Anesthesia mumps; Sialadenitis; General anesthesia, Postoperative complications**

## Introduction

Anesthesia mumps, first described in 1968 by Attas *et al*., is an acute and transient parotid gland swelling, occurring in association with general anaesthesia [1]. Its incidence remains unknown, but it is described as a very rare peri-operative complication [2]. It is usually a self-limited condition that regresses spontaneously without any medication or sequelae. However, anesthesiologists must be aware about this complication, since it can progress and become an emergency with airway obstruction. Sialadenitis can occur after any surgical procedure and should be distinguished from lymphedema, infection or cellulitis. It´s known that surgical procedures and anesthesia themselves are risk factors for salivary stasis, as well as immobilization during the procedure, surgical position and postoperative low fluid intake. Some medical conditions like Sjögren syndrome, diabetes mellitus or HIV infection can predispose to sialadenitis [2-4]. It has been reported specifically as complication of general anesthesia in patients undergoing spinal surgery in prone and lateral decubitus position [5]. We report the first case of anesthesia mumps at our University Hospital Center.

## Case Report

We describe a 41 year-old man with a BMI of 24.3 kg/m$^2$, ASA I, diagnosed with lumbar disc herniation, scheduled for partial endoscopic L5-S1 discectomy under general anesthesia. Preoperative results of biochemical studies and electrocardiography were normal. Standard monitoring, Bispectral Index and muscular relaxation monitoring (TOF–train of four) were used. We performed a balanced general anesthesia. For anesthesia induction we used intravenous fentanyl (0.002 mg/kg), lidocaine (1 mg/kg), propofol (2 mg/kg) and rocuronium (0.6 mg/kg). Cefazoline was used for antibiotic prophylaxis. After endotracheal intubation, with a Macintosh laryngoscope, the orotracheal tube was secured and kept at 22 cm in depth. After intubation, patient was placed in prone position, with the head turned to the right side and a soft gel roll pad placed on face´s left side. Mechanical ventilation was maintained with a tidal volume of 6 ml/kg, respiratory rate of 12/min and PEEP of 4 mmHg. Crystalloids were used as intravenous fluids. Anesthesia was maintained with 7% desflurane for MAC 1 adjusted to patient age. Blood loss was negligible. For post-operative nausea and vomit prophylaxis we used 4 mg of dexamethasone and 4 mg of ondansetron. For pain management we used 1gr acetaminophen, 30 mg ketorolac and 100 mg tramadol. Residual neuromuscular blockade was reversed with 200 mg of sugamadex. The surgical procedure lasted about 3 hours without anesthetic or surgical complications.

As the procedure was concluded, the patient was replaced to supine position and we noticed that the fixing bandage of the endotracheal tube was too tight, probably compressing the parotid gland and surrounding tissues. Patient was extubated uneventfully. After anesthesia emergency, patient was admitted in the post-anesthesia unit care. One hour after the end of the surgical procedure, a localized swelling of the left parotid gland with local discomfort and pain was noticed (Figure 1). We

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**Figure 1:** Swelling of the left parotid gland noticed 1 hour after de surgical procedure.

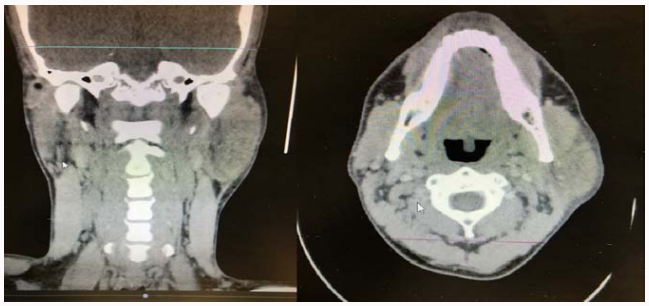

**Figure 2 and 3:** Computerized scan with infectious/ inflammatory process compatible with acute swelling of left parotid gland.

administered 25 mg of meperidine and 200 mg of hydrocortisone. A computerized scan was performed to investigate the tumefaction. It revealed an infectious/inflammatory process compatible with acute swelling of left parotid gland (Figure 2 and 3). The patient denied any symptoms of airway compromise, namely dysphagia, dysphonia, dyspnea, odynophagia or odontalgia. At physical exam, patient presented no trismus, stridor, difficult to swallow and any limitation on mouth opening. A course of antibiotic (amoxicillin+clavulanic acid–875mg+125mg) and non-steroidal anti-inflammatory was started. The parotid enlargement started to regress progressively and 48h after surgery was totally solved.

## Discussion/Conclusion

Anesthesia mumps is an acute and transient sialadenitis of salivary glands in the early postoperative period. It´s a rare but known complication of general anesthesia and for its potential to become a real emergency with airway obstruction all anesthesiologists must be fully aware of its existence.

The pathophysiology of anesthesia mumps is unknown. Conditions such head and neck position, straining and coughing during anesthesia, parotid gland venous blood vessels congestion, engorgement of head and neck and some drugs such as anticholinergics, antihistamines, phenothiazines, $\beta$-blockers, barbiturates and diuretics can contribute to systemic dehydration, increasing the risk of salivary stasis and consequently the risk of gland swelling [5]. Potential causes of salivary gland obstruction include physical compression, positioning, pneumoparotitis induced by air penetration as result of retrograde flow into the salivary duct due to positive pressure by ventilation or cough reflex, dehydration or activation of sympathetic nervous system [4].

In our patient we believe that endotracheal intubation, partial compression of the parotid gland in prone position and prolonged surgery were contributing factors to the development of acute swelling of the parotid gland. Patient's position appears to be the most important factor known to cause this complication.

Some studies state that most cases solve spontaneously but hydration and therapy with anti-inflammatory drugs may help. To prevent this complication, the use of a protective pad for face and minimal mobilization of neck are suggested to avoid direct compression of the parotid gland and to keep normal venous blood circulation, respectively, especially when the patient is placed in the prone position [5].

We decided to report this case to aware and emphasize its importance, since it can cause apprehension to the patient and the anesthesiologists.

Although it usually has a benign course, sometimes it can progress to airway obstruction and become an emergency. We reinforce that keeping optimum hydration, proper use of anesthetic medication, take care with positioning and adequate protection may avoid this complication.

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