A Case of Bilateral Anesthesia Mumps After General Anesthesia for Tibial Fracture Surgery

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Abstract- Acute transient swelling of the parotid glands during or after surgery under general anesthesia was prescribed by previous colleagues. This complication is called anesthesia mumps. We present a case of bilateral parotid swelling noticed early in the intraoperative period. A 52-year-old male patient was scheduled for internal fixation of right tibial fracture under general anesthesia. The surgical procedure was uneventful and lasted for 2.5 hours. But 30 minutes after the beginning of surgery, swelling of both parotid regions was noted. In the recovery unit, the patient had moderate swelling of both parotids, expanding down to the mandibular angle with no complaint of pain, difficulty in swallowing, and dyspnea. Swelling decreased in size after five days and resolved in seven days. It is important to recognize anesthesia mumps as a rare complication that can appear during surgery or in the early postoperative period.

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Keywords: Anesthesia mumps; Parotid swelling; Surgery

Introduction

Anesthesia mumps is an uncommon complication after surgery, and it is usually unilateral (1). It is often seen after prolonged surgery and develops ordinary a few hours after operation but can promote intraoperatively and usually resolves with no sequelae in the next few days (2).

The definite mechanism of this complication is not entirely presumed, but different theories have been recommended (3).

We have reported a bilateral swelling of parotid glands 30 minutes after the onset of surgery that resolved completely in 7 days with conservative management.

Case Report

A 52-year-old, 170 cm tall, and 80 kg weighing male patient was scheduled for open reduction and internal fixation of right tibial fracture after a motor accident.

His physical status was ASA class I, and he had no previous history of any disease or allergy to any medications. His physical examination and laboratory results were normal.

Upon arrival in the operational room, IV access was established, and standard monitoring consists of ECG, PO, capnogram, and NIBP was settled. The patient's vital signs were normal.

After preoxygenation with O_2 100%, midazolam 2 mg, fentanyl 200 µg, thiopental Na 400 mg, and atracurium 40 mg were administered for the induction of anesthesia and muscle relaxation. Mask ventilation was continued for 3 minutes, and then the patient was intubated in the first attempt with an ET tube (ID=8 mm). There was no episode of coughing or straining during intubation. The ET tube was fixed on the right side of the mouth, and the patient was placed in the supine position during surgery. Following intubation, anesthesia was maintained with 50% O_2 and N_2O, 1 MAC isoflurane, and morphine IV 8 mg with controlled ventilation of ETCO2 around 30-35 mmHg.

The surgical procedure was uneventful and lasted for 2.5 hours. But 30 minutes after the initiation of surgery, swelling of both parotid regions was noted (Figure 1). The total blood loss was about 250 mL, and 2000 mL IV crystalloids were administered during surgery. His vital signs remained stable all along with the operation.

NM block was reversed with IV neostigmine 2.5 mg and atropine 1 mg. Then the patient was extubated without any problem, and recovery was uneventful.

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In the recovery unit, the patient had moderate swelling of both parotids, expanding down to the mandibular angle with no complaint of pain, difficulty in swallowing, and dyspnea. Clinical examination showed diffused edema over the parotid glands, and in the intraoral examination, the orifice of the Stensen's duct was open. There were no signs of local inflammation or infection, and the overlying skin was not erythematous or warm. There was no palpable crepitation, and the body temperature was normal.

Figure 1. Bilateral swelling of parotid glands in a case of right tibial fracture surgery under general anesthesia

During the hospital stay, there was no episode of fever, and lab tests and serum amylase were normal. The patient received NSAID for two days. Swelling decreased in size after five days and resolved completely in 7 days without any active intervention.

Discussion

Acute transient swelling of the parotid glands during or after surgery and general anesthesia was described by Atlas *et al*., for the first time (1). Then this complication called Anesthesia Mumps by Reilly *et al*., (2) Incidence of anesthesia mumps was about 0.84% in a 4-year study period by Kim *et al*., (3), or five in 3000 by Matsuki *et al*., (4).

The swelling and enlargement are usually transient and may last for several minutes to several days (5). The majority of cases were found after prolonged anesthesia and can appear during surgery or in the early postoperative period (6,7). In our patient, the swelling was seen after half-hour of surgery that lasted 2.5 hours. Anesthesia mumps can occur in patients of all age groups and various surgical procedures (7-9). The precise mechanism of anesthesia mumps is still unclear, but diverse mechanisms have been hypothesized. Retrograde passage of air into the parotid gland along the Stensen's duct and occlusion of this duct due to retention of secretions are two major theories for this complication (10-11). Accordingly, trauma, straining and or coughing during intubation and extubation; vasodilation and hyperemia in the parotid glands; perioperative use of drugs like atropine, succinylcholine and muscle relaxants, venous engorgement of the head and neck; dehydration; and mechanical blockage of the parotid duct by intubation and fixation of the ETT are some of the suggested mechanisms (8,12,13).

In our patient, serum amylase and the blood cell count were normal. Thus any viral and bacterial causes were kept out. Our patient had no co-existing diseases, and anesthesia induction was smooth and uneventful. Overall, there were no risk factors in our patient and conforming to the time of onset (30 min after the beginning of surgery) retrograde passage of air into the parotid glands through the Stensen's duct during mask ventilation can be a logical argument for this complication. Another possibility is the overpressure of the mask with the left hand, which could obstruct the gland's orifice for a time. Anesthesia mumps usually has an adequate and spontaneous recovery with symptomatic treatment (6,12,14). However, seldom extreme edema can compromise airway patency (15,16). Thus the careful observation of patients should be considered. Patients may complain of mild pain and distress (7,17). Our patient complained of moderate bilateral swelling with no pain that resolved completely in 7 days with symptomatic treatments. Adequate hydration, mouth wash, pain control, and warm compresses on the affected area may be helpful (3,8).

In conclusion, careful attention should be given to patients with risk factors like long operation time, prone position, obesity, premedication with anticholinergics, and history of the parotid disease or trauma. In addition, we should be aware that anesthesia mumps can develop without any risk factors.

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