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Anaesthesia mumps after laparoscopic right hemicolectomy under general anaesthesia: A case report

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ABSTRACT

INTRODUCTION: Anaesthesia mumps is an extremely rare postoperative complication that occurs following various surgical procedures after general anaesthesia. We aimed to contribute to the growing knowledge of potential clinical presentations, outcomes, and possible causes.

PRESENTATION OF CASE: A 93-year-old man experienced acute swelling of a unilateral parotid gland 1 day after laparoscopic right hemicolectomy under general anaesthesia. The symptoms he presented with were acute, non-tender swelling in the left preauricular and submandibular triangle with well-margined, circular swelling of the buccal mucosa. Amylase level was within the normal range. Computed tomography showed left preauricular soft tissue swelling and enlargement and an enhanced left parotid gland exhibiting inflammation. The swelling subsided after 3 days of conservative treatment.

DISCUSSION: Anaesthesia mumps have been associated with a variety of surgeries, including colorectal surgery, and is a rare complication after the induction of general anaesthesia. Despite the few cases presenting with airway obstruction, the outcome for swelling of the parotid or submandibular gland is generally good.

CONCLUSION: Early awareness of anaesthesia mumps and close evaluation lead to a fair prognosis for scar presentation.

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1. Introduction

Acute parotid gland swelling after general anaesthesia is an extremely rare postoperative complication that occurs after various surgical operations, which is also known as anaesthesia mumps. This rare postoperative condition has been identified across various surgical subspecialties, including orthopaedics, obstetrics and gynaecology, neurosurgery, and spinal surgery. We present a recent case to ensure that clinicians are aware of anaesthesia mumps as a complication in postoperative patients and can be reassured by its relatively benign prognosis. This work has been reported in line with the SCARE criteria [1].

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2. Presentation of case

A 93-year-old man arrived in the emergency room of our hospital with severe pain in his lower abdomen. His family mentioned that the discomfort had occurred intermittently 1 week prior and then had progressed to persistent pain on the morning of his arrival. He had a history of oesophageal lymphoma with complete remission after chemotherapy 10 years ago, general anaesthesia due to herniorrhaphy 5 years prior, and dementia followed up for approximately 3 years. Upon physical examination, the patient's vital signs were all within normal ranges. Tenderness and diffuse tympanicity were observed during abdominal examination. Laboratory data showed that his white cell count was $11.63 \times 10^3/\mu\text{L}$, with a neutrophil count of 78.4%, a lymphocyte count of 16.2%, and the C-reactive protein (CRP) level was 1.03 mg/dL. However, there was suspected acute pre-renal renal injury with creatinine at 1.3 mg/dL and blood urea nitrogen at 30 mg/dL. Abdominal computed tomography indicated bowel obstruction due to an ascending



Fig. 1. Specimen of the ascending colon tumour (a) and photograph of the surgical wound (b).

tumour. Therefore, a laparoscopic right hemicolectomy was performed under general anaesthesia after bowel preparation. The patient was 166 cm in height, 62 kg in weight, and at American Society of Anesthesiologist physical status class III. We monitored his electrocardiogram, capnogram, pulse oximeter, and blood pressure. After preoxygenation oxygen, we administered lidocaine 50 mg and propofol 100 mg for the induction of anaesthesia; succinylcholine 80 mg and cisatracurium 8 mg were administered to facilitate tracheal intubation. Intubation was performed smoothly with an endotracheal tube fixed on his right cheek, and 3% sevoflu-



Fig. 2. Photograph showing swelling of the patient's left neck and buccal mucosa.

rane and remifentanyl at a dose of 0.5 $\mu\text{g}/\text{kg}/\text{min}$ were used to maintain anaesthesia.

The operation was performed over a period of 120 min; the patient was initially placed in the Trendelenburg position with right decubitus and then turned to the supine position after transection of the ileocolic pedicle. All procedures were performed without problems (Fig. 1), but the patient was admitted to the intensive care unit immediately due to advanced age. The tracheal tube was removed 2 h after a series of surveys, including blood gas analysis, and no respiratory stress was noted during the same day. The patient was transferred to the general ward on the morning after acute, non-tender swelling in the left preauricular and submandibular triangle with a well-margined, circular swelling of the buccal mucosa (Fig. 2). No fever or normal vital signs were noted. The laboratory examination showed the following: white blood cell count, $11.63 \times 10^3/\mu\text{L}$; neutrophil count, 78.4%; lymphocyte count, 16.2%; haemoglobin, 10.1 g/dL; CRP, 8.65 mg/dL; and amylase, 85 U/L. Subsequent intravenous contrast-enhanced computed tomography of the neck demonstrated left preauricular soft-tissue swelling and enlargement and an enhanced left parotid gland with inflammation (Fig. 3). There were no abnormal findings in the nasopharynx, oropharynx, or airway. Because of concerns regarding airway obstruction and dysphagia, we started oxygen supplementation and inserted nasogastric tube correspondingly. Fortunately, the nasogastric was removed smoothly after confirm-

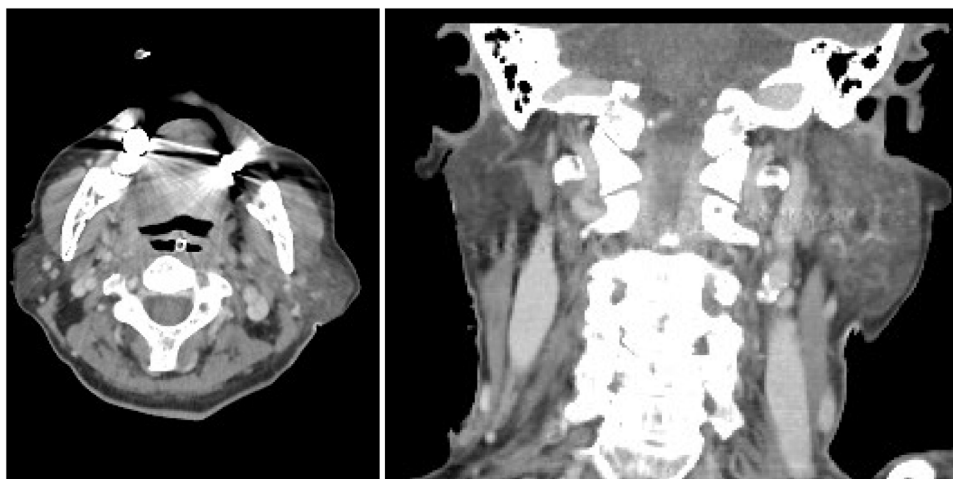


Fig. 3. Computed tomography with contrast showing left parotid inflammation and swelling without obvious airway compression.



Fig. 4. Photographs showing subsided left neck swelling 3 days later: (a) after 1 day, (b) after 2 days, and (c) after 3 days.

ing there is no dysphagia occurred to him on the coming morning. The swelling subsided 3 days later (Fig. 4) with antibiotic treatment with ampicillin and sulbactam for the prevention of bacterial infection.

3. Discussion

Acute swelling of the parotid glands after induction of general anaesthesia is rare, but it can occur during or up to 24 h after surgery. According to literature reports, the occurrence of this condition is highly variable (0.2–17 %), and the exact incidence is still unknown [2–4]. This swelling is tender due to inflammation or infection and is also known as pneumoparotitis and pneumosialadenitis. A large number of case reports of anaesthetic mumps are related to various operations, including plastic surgery, endoscopy, neurosurgery, orthopaedics, otolaryngology, and several gynaecological operations [5–7]. Herein, we report a case of acute anaesthesia mumps after laparoscopic right hemicolectomy. To the best of our knowledge, our case is the oldest and first case to occur after laparoscopic colorectal surgery with mechanical bowel preparation.

Although the mechanism by which anaesthesia mumps occurs is not fully known, occlusion of the salivary ducts, poor venous circulation during anaesthesia, and side effects of medication during induction or sialorrhoea have been discussed [3,8]. Previous studies have reported that the possible mechanisms of salivary duct occlusion are (1) compression by physical positions during operation or surgical instruments, which could cause mucosal stimulation or even inflammation [9]; (2) pneumoparotitis due to air infiltration, which is induced by retrograde flow into the salivary duct under muscle relaxants [7,10]; and (3) the retention of secretions, which is predisposed by preoperative dehydration or the perioperative use of various drugs [11].

In our case, we observed left-sided, noncrepitant swelling of the parotid and submandibular glands. No pneumoparotitis features were noted in the images, so retrograde airflow was a less likely cause in our case. In addition, the tracheal tube was fixed on the right side, and there was no obvious compression of the left buccal area during the operation. Therefore, this suggested that the retention of saliva due to possible preoperative dehydration, including mechanical bowel preparation, and the Trendelenburg position used during the operation were the possible precipitating factors for the anaesthesia mumps in our patient.

Anaesthesia mumps have a good prognosis and are self-limited, although prominent symptoms are usually relieved after closely observing and hydration. Although most patients exhibit rapid subsidence of the swelling during a 1- to 5-day period [11], some patients need emergent intubation [12]. Therefore, we started adequate fluid hydration and closely monitored the vital signs with oxygen supply after a series of evaluations ruling out severe airway obstruction. Fortunately, the patient's left neck swelling subsided approximately 4 days later, and there was no progressive airway management during the entire hospital course.

4. Conclusion

In summary, we advocate early awareness of this condition and recognize its fair prognosis for scar presentation.

Declaration of Competing Interest

The authors report no declarations of interest.

Funding

This study has not received funding from any person or institution.

Ethical approval

Our protocol adhered to the tenets of the Declaration of Helsinki and received approval from the TSGH Institutional Review Board.

Consent

Informed written consent was obtained from the patient's legally authorized representatives for publication of this case.

Authors contribution

Yu-Hong Liu contributed to the design of the study, was responsible for the management and retrieval of data, contributed to initial data analysis and interpretation, and drafted the initial manuscript. Yu-Hong Liu and Ta-Wei Pu decided upon the data collection methods and were also responsible for the data analysis decisions. Ta-Wei Pu conceptualized and designed the study, supervised all

aspects of the study, critically reviewed and revised the manuscript, and approved the final manuscript for submission.

Registration of research studies

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