Acute bilateral parotid gland enlargement

S.K. Siddegowda
Gujarat University, India.

Keywords: Upper gastrointestinal endoscopy, general anaesthesia, parotid swelling, corrosive injury

Introduction

Bilateral parotid swelling after upper gastrointestinal procedures is a very rare occurrence. It is a self limiting transient event following anaesthesia [1], oesophagoduodenoscopy, and bronchoscopy [2]. The cause for this condition is not known due to rarity of the condition. The possible causes are retention of secretions causing blockage of the parotid ducts, dehydration, parasympathetic stimulation during oesophageal intubation, venous congestion due to excessive coughing and straining during procedure. Knowledge of this event and the self limiting nature of the problem is important for the treating physician. We report two cases where bilateral parotid swelling following upper gastrointestinal endoscopy.

Case no 1.

A 32 year old female patient admitted with corrosive ingestion underwent diagnostic upper gastrointestinal endoscopy. The patient did not receive any sedation or local anesthetic spray before the procedure. The procedure went smoothly, without any excessive cough or any untoward incident. There was only mild erythema of esophageal mucosa, stomach was normal suggestive of grade I esophageal injury during endoscopy. Few minutes following the procedure, patient started complaining of swelling and discomfort of the left parotid. Soon after the symtoms were present on the right side as well. There was no respiratory distress, swelling or crepitus in the neck. There was no change in voice or any other systemic symptoms. Enlargement of both parotid glands was not associated with erythema or local rise of temperature and tenderness (Figure 1.). There was no involvement of

Figure 1. Photographs showing left and right parotid gland enlargement.

Figure 2. No parotid swelling after 4 hours.

Correspondence: S.K. Siddegowda
E-mail: dr_sid0009@yahoo.co.in

submandibular salivary glands. Patient was closely monitored for any respiratory distress and laryngeal edema. Warm compressions were given and patient kept nil by mouth. Serum amylase level was 90U/L immediately after the event. Ultrasonography of the neck showed bilateral swelling of parotid with no duct abnormality. Over a period of 2 hours the swelling started to resolve. At the end of 4hours of the procedure the swelling totally disappeared and the patient was allowed oral liquids. There were no other complaints during the hospital stay. The patient did not have any problems during follow up period for 2 months.

Case no 2.

A 19 year old female patient who developed a stricture following corrosive ingestion was undergoing oesophageal dilatation regularly. In this admission upper gastrointestinal endoscopy & dilatation was not possible hence we took her for dilatation of oesophagus under anesthesia. Her past medical history was insignificant and there was no history of allergy. The preoperative hematological and biochemical reports were within normal limits. Under general anesthesia patient was put in supine position and the esophagus was dilated serially upto 12 mm under fluoroscopic guidance using Savary Guillard dilators. Ryle's tube was inserted under scope guidance. Duration of the procedure was 30 minitues. After extubation, a bilateral swelling of the parotid region was noted. The swelling increased in size and hardness (Figure 3) .We confirmed that the patient had no surgical emphysema, hematoma or tracheo-bronchial injury. Patient received chlorpheniramine and hydrocortisone intravenously.

Figure 3. Photograph showing bilateral parotid enlargement.

Figure 3. Swelling of both parotd gland disappeared after 4 hours.

The swelling reduced in size gradually over 3 hours, and disappeared after about 4 hours (Figure 4). Ultrasound scan of the neck showed generalized swelling of both parotids with their ducts being normal. Serum amylase level was 106 U/L in immediate post procedure period. Patient was discharged with Ryle's tube in situ after 2 days. Thereafter she was on regular follow up every month for upper gastrointestinal endoscopy & dilatation.

Disscussion

Acute and chronic swelling of the salivary glands is known to occur in various disorders including mumps, postoperative parotitis, tuberculosis, amyloidosis, autoimmune diseases and malignancies. Noninflammatory parotid enlargement is seen more often in association with malnutrition, obesity, and liver disease [3]. Transient bilateral parotid swelling following general aneasthesia (Aneasthesia mumps), upper gastrointestinal endoscopy [4,8-9], lidocaine spray [5], midazolam [6], Sengstaken Blakemore tube insertion has been reported. Although the exact mechanism is not known, possible aetiological factors are, a) parasympathetic stimulation during the procedure causing parotid vasodilation and transient enlargement, b) retention of secretions causing a blockage of the salivary ducts, c) dehydration may play a role in causing the secretions to be thick and may predispose salivary-duct obstruction, d) retrograde passage of air due to a loss of muscle tone around Stenson's orifice, e) head positioning during the

procedure may be responsible for this event [7]. Some authors are of the opinion that it maybe due to an adverse drug reaction such as to atropine or suxamethonium [10,12]. However, no common drug has been used in all of the reported cases. Matsuki et al. [11] and Attas et al. [12] proposed that coughing and straining can also produce salivary gland swelling and may lead to venous congestion of the salivary glands. Bonchek [10] and Strowbridge [13] proposed that most likely explanation to be instrumentation of the upper airway or oesophagus stimulates a reflex arc, with the afferent stimulus coming from the tongue, mouth or pharynx, and intense parasympathetic stimulation resulting in vasodilation and transient enlargement of the glands. All the three namely parotid, submandibular and submaxillary salivary glands may be enlarged, but parotid is the most commonly reported in literature. There is no change in the serum amylase during the parotid enlargement. In both our patient's serum amylase was normal. Warm compression and reassurance is all that is required for this unusual event. Bilateral salivary gland enlargement is a transient benign and self limiting condition but sudden appearance of swelling after procedure is alarming to both patient and physician [14]. The treating doctor should be aware of this condition as he should not panic of this rare and scary event.

References

1. Serin S, Kaya S, Kara C et al. A case of anesthesia mumps. Anesth Analg 2007; 104: 1005

2. Blackford RW. Recurrent swelling of parotid and submaxillary gland following bronchoscopy. Ann Otol Rhino Laryngol 1974; 53: 54-64.

3. Roberts HJ. Difficult diagnosis – A guide to the interpretation of obscure illness. Philadelphia: W.B. Saunders; 1958: 19, 158, 207, 402, 412

4. Bahadur S, Fayyaz M, Mehboob S. Salivary gland swelling developing after endoscopy: anesthesia mumps. Gastrointest Endosc2006; 63: 345–347

5. Sagar J, Chavan VA, Shah DK. Acute parotiditis and facial nerve palsy – unusual side effects of Xylocaine spray. Endoscopy 2007; 39 Suppl 1: E189

6. Gültuna S, Usküdar O, Yüksel I et al. Transient parotitis after conscious sedation for endoscopy. Endoscopy 2009; 41 Suppl 2: E53

7. Adachi Y, Suzuki K, Itagaki T, Obata Y, Doi M, Sato S. Two cases of anesthesia mumps in the upper parotid gland after general anesthesia in the lateral position. Masui 2008;57:1150-2.

8. Shields HM, Soloway RD, Long WB et al. Bilateral recurrent parotid gland swelling after endoscopy. Gastroenterology 1977; 73: 164–165

9. Ziccardi V, Molloy PJ. Parotid swelling after endoscopy. Gastrointest Endosc 1992; 38: 520.

10.Bonchek LI. Salivary gland enlargement during induction of anaesthesia. JAMA 1969; 209: 1716-8.

11. Matsuki A, Wakayama S, Oyama T. Acute transient swelling of the salivary glands during and following endotracheal anaesthesia. Anaesthesist 1975; 24: 125-8.

12. Attas M, Sabawala PB, Keats AS. Acute transient sialadenopathy during induction of anaesthesia. Anaesthesiology 1968; 29: 1050-2.

13. Strowbridge MNF. Acute salivary gland enlargement following instrumentation of the upper airway. J R Army Med Corps 1987; 133: 163-5.

14. Vinu Jamwal, Vijant Singh Chandail.Transient Swelling of Parotid Gland after Upper GI Endoscopy - "Anaesthesia Mumps": Time to Stay Cool Journal of Digestive Endoscopy 2012; 3(2):30-32

Key points:

- Sudden bilateral salivary gland enlargement following ,various procedures like, endoscopy, bronchoscopy, intubation, upper GI procedures like variceal banding and esophageal dilatation can occur rarely .
- The treating physician should be aware of this condition as this is often self limiting and requires no intervention.