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Case Report

A Rare Case of Unilateral Pneumoparotid

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Abstract

Parotid swelling is not an uncommon finding. Enlargement of parotid can happen due to infections, obstruction in salivary flow, tumors of salivary glands, systemic diseases or syndromes. We here present a rare case of right parotid swelling due to retrograde movement or insufflation of air from the mouth into the parotid gland and possible management options.

Keywords: Parotid Swelling; Parotiditis; Pneumoparotid; Pneumoparotitis; Pneumosialoadenitis

Introduction

Enlargement of major salivary glands are routinely seen in our clinical practice. Parotid glands are a major salivary gland and are the largest salivary gland. They secrete serous saliva through parotid duct into mouth. Enlargement may occur due to obstruction within duct, tumors, autoimmune or lymphoproliferative diseases. Acute enlargements also are noted as a result of viral and bacterial infections. An acute swelling of the parotid was seen in our patient due to air within the left parotid causing acute discomfort to the patient. We here, would like to discuss this unusual finding.

Case Report

A 40 years old male patient who visited our clinics with discomfort in the right face, he pointed his finger to right parotid region. He gave a history of similar pain year before in the same region, for which he was evaluated at another medical center with a working diagnosis of sialolithiasis of the Stenson's duct was made. Accordingly, the patient also informed us the stone was extracted by milking the calculi out. There after he was asymptomatic. On our examination we found that there was mild diffuse swelling and vague tenderness around the right parotid region. There were no acute signs of inflammation. A swelling occurred on the right cheek region, whenever there was insufflation of air from the mouth by the patient, which had become his routine habit (Figure 1). This also could be the etiology for this condition. An ultrasound examination was done with as suspicion of calculi within duct. The ultrasound showed mild enlargement and hyper echoic cluster of foci with posterior acoustic shadow likely of being a calculus, Stenson's duct was not clearly visible. A CT with contrast was done showed right parotid enlargement, with multiple free air foci within the gland parenchyma, discrete dense foci of small calcifications (Figure 2 and 3).

Figure 1

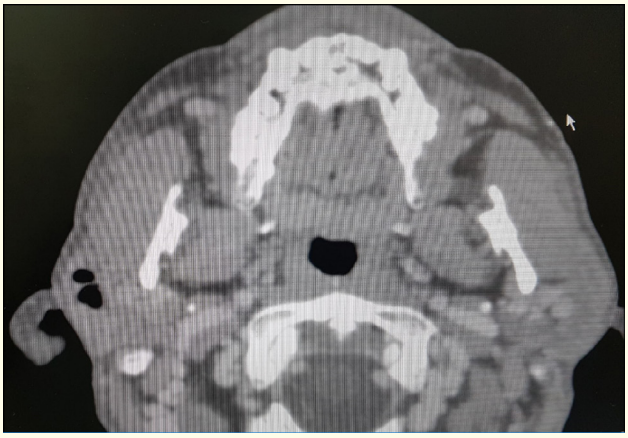

Figure 2

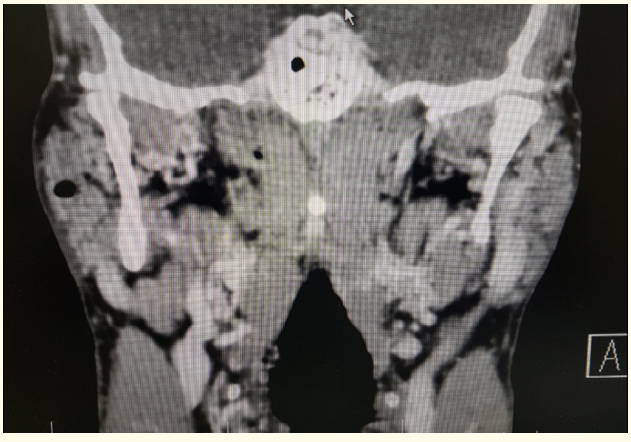

Figure 3

A conservative approach was decided. The duct cannulation was done with size 20 Gauge and saline irrigation was done. Patient was advised not to hold air mouth/ blow with pressure. When an external pressure was applied on right parotid we observed intraoral air bubbles (Figure 4). A crape mastoid dressing bandage was applied for a period of 5 days. There was an improvement in size and local discomfort and pain. The patient was followed for a period of 6 months.

Discussion

In literature, Hyrtl in 1865 was first to describe this condition [1]. Other names for this condition are pneumoparotitis, pneumoparotiditis, pneumosialoadenitis, wind parotiditis, anesthetic or surgical mumps [2-7]. If the parotid gland shows signs of inflammation the most commonly used term is Pneumoparotitis, otherwise its pneumoparotiditis (with inflammation).

Figure 4

Intraoral pressure increase is the main reason for this condition. It also may be aggravated due to dilated duct, weakness in buccinator muscle. A mucosal fold seals the entrance Stensen's duct orifice when intraoral pressure increases, there by prevents air from entering retrograde into the gland [4], contraction of the buccinator closes the duct on increased intraoral pressure.

Dental procedures where high speed air turbine hand pieces and air-powered scaler units can cause Pneumoparotid, as these instruments cause increase in intraoral pressure 20 times the normal oral pressure, especially if used near the molar teeth region [8]. Surgical/anesthesia mumps are enlargement of the parotids that can happen during extubation, due to positive pressure ventilation [7]. It is also reported in blowing up of balloons, scuba divers, musicians with wind blowing musical instruments.

CT scans are valuable in diagnosis as they show air within the parotid gland. Ultrasonography are used as initial examination tool, which commonly shows multiple hyperechoic areas [9].

Treatment is usually conservative, as the enlargement usually reduces within 3 days [10]. Some authors recommend antibiotics to avoid any further infection within parotid due to oral bacteria [1]. Anti-inflammatory drugs, external gland massage, local heat application are also used [1,11]. Patient is explained not to increase the intraoral pressure. Surgical options are rarely needed, they include transposition of duct [1], ligation [12], superficial parotidectomy - only if patient suffers from multiple episodes of infection.

Conclusion

Pneumoparotitis/Pneumosialoadenitis are rare conditions, often missed. CT scans are very valuable in its diagnosis. Conservative management is usually beneficial. Surgical treatment options are reserved for highly recurrent cases and are rarely used.

Conflict of Interest

None.

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