



Cheek Trauma and Mass Formation Caused by Pricker: Diagnostic Value of Fine Needle Aspiration Cytology in an Interesting Case

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Abstract

Cheek trauma is occurs usually due to effect of carious teeth of this region. It may occur depending on the cheek biting habit also in some cases. Parotid duct injury accompanied by cheek trauma is rare. Objective evaluation and radiological methods are of great importance in the diagnostic process of trauma cases and are usually adequate for diagnosis. The use of fine needle aspiration and determination of diagnosis by this method is extremely rare in such cases. Here, a case of parotid duct injury due to trauma and followed by a mass formation in the cheek region was presented; and the value of fine needle aspiration in the diagnostic process of such cases has been reviewed.

Keywords: Parotid duct, cheek trauma, mass formation, fine needle aspiration cytology, granuloma

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Introduction

Cheek trauma usually occurs due to effect of decayed teeth or cheek biting habit. Stab wounds of the cheek are less common. In such cases, damage of the facial nerve, transverse facial artery, parotid gland or parotid duct can be seen [1]. Parotid duct injury was seen rarely in cheek traumas. In such cases, the use of fine needle aspiration (FNA) and detection of diagnosis by this method are uncommon. Here, a case of parotid duct injury due to trauma and followed by a mass formation in the cheek region was presented; and the value of FNA in the diagnostic process of such cases has been reviewed.

Case

An asymptomatic, rapidly growing mass was detected in the right cheek of a 55-year-old female patient who was admitted to the clinic. The patient has a history of trauma in right cheek region caused by pricker during teeth cleaning about 3 months ago. In physical examination, about 5.0 cm in diameter mass in the right cheek was seen. The cutaneous surface of the mass was slight hyperemic and the mucosal surface was covered by white-gray material. The ultrasonographic examination revealed a mass on the right cheek compatible with hematoma. It was 28×31×34 mm in size with irregular borders (Figure 1a). Subsequent computed tomography demonstrated subcutaneous lesion has a same density with muscle tissue and normal anatomic structure of surrounding bone tissue (Figure 1b). FNA was used for the exclusion of malignant lesions. FNA was performed by using 24-gauge needle and 10-mL syringe attached to the syringe-holder and four direct smears were prepared by the (cyto) pathologist. Abundant multinucleated giant cells, histiocytes and lymphocytes were observed on the mucoid background. Some cell groups with large nucleuses were seen as atypical, but they was evaluated as reactive cells by the regularity of nuclear borders and finely dispersion of chromatin (Figure 2). FNA material was reported as benign cytology, being compatible with granuloma containing multinucleated giant cells. Based on the history of patient, radiological findings and FNA result the diagnosis of sialoceles due to parotid duct trauma was determined. At another center, patient underwent surgical treatment; the parotid duct injury was determined and repaired intraoperatively. The mass of the right cheek was excised. Result of postoperative examination of the mass was reported as “a giant granuloma due to foreign

material-saliva accumulation, compatible with sialocele”. No recurrence and complications were observed during the 12-month follow-up.

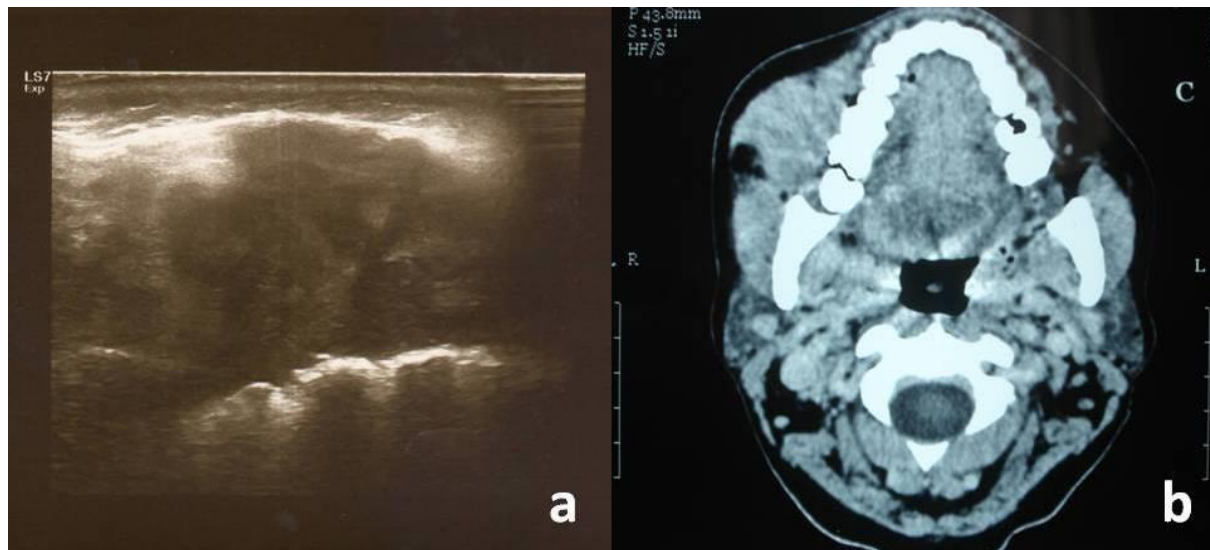


Figure 1. Ultrasonographic (a) and computed tomographic image (b) of the lesion in the right cheek.

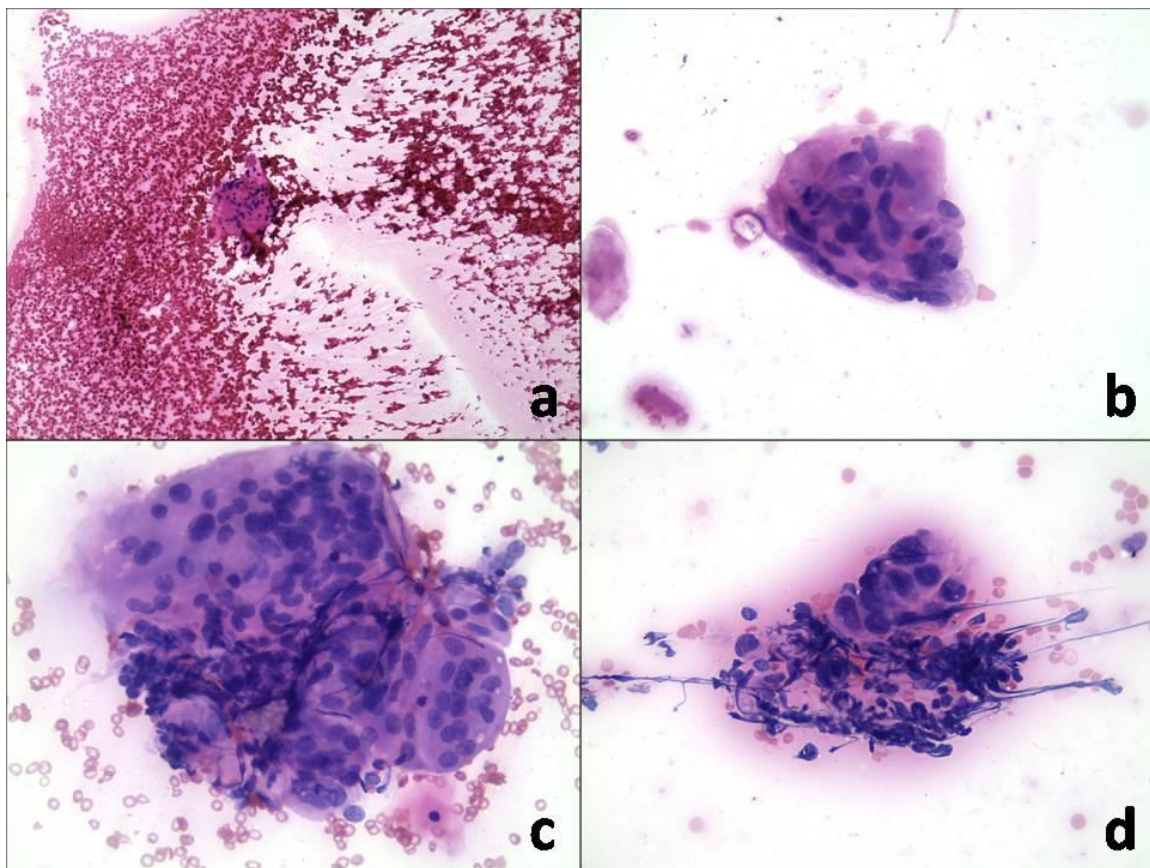


Figure 2. Multinucleated giant cells in fine needle aspiration cytology of lesion (a: ×100, H&E; b: ×200, H&E), granuloma-like formation composed of histiocytes (c: ×200, H&E) and group of histiocytes with atypical appearance (d: ×200, H&E).

Discussion

The round and well defined cystic lesions that contain mucus known as mucocele. When they occur in the parotid gland is called sialoceles. For practical purposes they may be regarded as being of either extravasation or retention type. The term mucous extravasation phenomenon (cyst) is used when mucus is extruded into the connective tissues and is surrounded by a granulation tissue, while mucous retention cyst is used to describe a cyst with retained mucin that is lined with ductal epithelium. Sublingual and minor salivary glands are common localization for these lesions. The same lesions of the parotid gland are rare and the majority of the reported cases are of retention type [2].

About 80 cases of sialoceles were reported in the English literature and just little part of them is extravasation type sialocel. Age range of reported cases is 13-72 with mean age about 46. Sialocel is seen more often in women, in a rate near to 2/3 [3]. The first clinical symptoms usually occur within the first 24 hours after trauma or surgical procedures. Sometimes, this period may be prolonged up to a few days or a week [4]. The early presentation form of sialocel is painless, mobile and soft mass formation reason of mass formation is accumulated saliva into the connective tissue due to duct injury. Later, sialocel receives a final form by development of inflammatory reaction around accumulated saliva. This process can take about 8-14 days [5]. Pain, hyperemia of the skin and occasionally external fistula formation can be seen in the infected sialocel cases.

Sialocel is lesser known lesion and therefore its diagnostic process is sometimes multistep and difficult. In most cases, it can mimic hematoma, abscess or neoplastic masses [2,4]. Trauma history in the masseter-cheek region is important clue for diagnosis but sometimes patients can't remember that they have received trauma [2]. In many studies, indicated that sialography should be used as a first step method for detection of communication between parotid duct and lesions suspicious for sialocel [3]. However some authors have claimed that sialography may increase the pressure in sialocel causing rupture and fistula [6]. Generally sialocel is considered as a hematoma by ultrasonography. Other radiological methods such as computed tomography, magnetic resonance imaging are inadequate for the specific diagnosis of sialocel, moreover, this lesions can be considered as a neoplastic mass by such methods

[4]. The most important finding in the diagnostic process is detection of high amylase level (about 10000 units/L) in the aspirated fluid [2,5].

The use of FNA in the diagnostic process of sialoceles is rare. Usually the aspiration method has been used for evacuating of accumulated saliva for the purpose of treatment of such lesions. Therefore the cytopathological features of sialoceles are not defined. In the smears, multinucleated giant cells, histiocytes and few lymphocytes on the extensive mucoid background are characteristic findings for sialoceles. The detection of amylase crystals cytologically can be valuable for diagnosis. Histopathologically, multinucleated giant cells and histiocytes surrounding the accumulated saliva in soft tissue are specific for sialoceles. The cyto and histopathological differential diagnosis of sialoceles includes granulomatous inflammations such as tuberculosis and sarcoidosis, fungal infections, tissue reactions due to foreign bodies, peripheral giant cell granuloma and tumor.

The surgical methods in $\frac{3}{4}$ of the cases, while the conservative methods in $\frac{1}{4}$ of them are used for treatment [2,7]. Multiple aspirations by needle can be preferred in treatment as a first step and effective method [8].

Conclusion

Sialoceles should be considered in the differentiation of the cheek masses formed after trauma. In the diagnostic process, FNA can be used as a cost-effective, rapid and less invasive diagnostic method for elimination of malignancies.

References

1. Witt RL. The incidence and management of sialoceles after parotidectomy. *Otolaryngol Head Neck Surg.* 2009;140(6):871-4.
2. Araujo MR, Centurion BS, Albuquerque DF, Marchesano LH, Damante JH. Management of a parotid sialocoele in a young patient: case report and literature review. *J Appl Oral Sci.* 2010;18(4):432-6.
3. Junior RM, Rocha Neto AM, Queiroz IV, Cauby AF, Gueiros LA, Leao JC. Giant sialoceles following facial trauma. *Braz Dent J.* 2012;23(1):82-6.
4. Sulabha AN, Sangamesh NC, Warad N, Ahmad A. Sialocoele: an unusual case report and its management. *Indian J Dent Res.* 2011;22(2):336-9.
5. Canosa A, Cohen MA. Post traumatic parotid sialocoele report of two cases. *J Oral Maxillofac Surg* 1999;57(6):742-5.

6. Bater MC. An unusual case of preauricular swelling: A giant parotid sialoceles. *Int J Oral Maxillofac Surg.* 1998;27(2):125-6.
7. Kumar SR, Hiremath V, Patil AG, Aparna S. Surgical management of Stenson's duct injury using epidural catheter: a novel technique. *Niger J Clin Pract.* 2013;16(2):266-8.
8. Langenbrunner DJ. Treatment of sialoceles: an experimental study in dogs. *Trans Sect Otolaryngol Am Acad Ophthalmol Otolaryngol.* 1975;80(4 Pt 1):375-81.