

RECURRENT OBSTRUCTIVE PAROTITIS SECONDARY TO CONGENITAL KINK OF STENSEN'S DUCT

Muhammad Tariq, Zaheer Mustafa, Saeed Akhtar Malik

Department of Radiology, Sheikh Zayed Medical College, Rahim Yar Khan, Pakistan.

PJR April - June 2013; 23(2): 76-78

ABSTRACT

Parotitis is an inflammation of one or both parotid glands located on either side of the face. The parotid gland is the salivary gland most commonly affected by inflammation. of parotitis include infections, blockage, autoimmune and diseases of uncertain etiology.

Chronic parotitis is an insidious inflammatory disorder involving the parotid gland. It is characterized by a recurrent and painful swelling of the affected salivary gland. Pain may be worse while eating due to the stress placed on the inflamed gland to secrete saliva. Blockage of the main parotid duct, or one of its branches, is often a primary cause of recurrent parotitis. The blockage may be from a salivary stone, a plug, or, more rarely, by a tumor, usually benign. A very rare cause of blockage of pancreatic duct is kink in the duct may be due to congenital course of duct or due to hypertrophy of masseter muscle causing its kink. Sialography is most reliable technique to diagnose the cause and site of blockage.

We present a case of 45-year-old female patient presented with recurrent pain and swelling of right parotid region. His X-Ray lateral side of face was unremarkable. His sialography revealed a kink in its course with dilatation of Stensen's duct proximal to kink along with beaded appearance of duct.

Key words: Parotitis, Stensen's duct, sialography, blockage, kink.

Introduction

Recurrent parotitis from obstruction of the salivary gland is a relatively common disorder with an estimated life time prevalence of 2% of the population. Salivary gland obstruction often results in pain and swelling, primarily while eating, in the cheek area or under the jaw line.

The causes of chronic recurrent parotitis include salivary duct stones, scar tissue, allergic disorders, dehydration, medication side effects, autoimmune diseases and tumors.

Ultrasound, sialography and computed tomography (CT) scanning are the diagnostic tools most helpful for identifying salivary stones, ductal blockage and dilation, or masses. Salivary endoscopy (sialendoscopy) can also assist in the diagnosis and treatment of these pathologies.

Case Report

A 45-years old female, resident of district Rahim Yar Khan presented with history recurrent episodes of pain and swelling at right cheek and angle of mouth. Initially pain was started and then gradually swelling developed at angle of mouth. Pain increased during chewing. Patient consulted a dental surgeon who diagnosed it to be a case of dental caries followed by tooth extraction. Later on after medication symptoms subsided. Patient developed recurrent episodes of pain and swelling of right cheek and every time dental surgeon extracted one right sided tooth.

Our patient was middle aged female with average height, weight and built. She was well oriented in time, place and person with following vitals: pulse 80/min, regular; temperature 98.6°F; blood pressure

Correspondence : Prof. Muhammad Tariq
Head of Radiology Department,
Sheikh Zayed Medical College,
Rahim Yar Khan, Pakistan.
Ph No: 0333-4368319
Email: profdrtariq@gmail.com

Submitted 19 February 2013, Accepted 1 October 2014

120/70 mmHg. Extra-oral examination showed right sided facial fullness with a moderately enlarged parotid gland which was tender to touch. No discharge of saliva occurred in the mouth from right side.

Her laboratory investigations were as under: urine examination: 3-4 pus cells/HPF and 2-3 RBCs/HPF; blood C/E: hemoglobin 11.2 g/dl, TLC: 9200/mm³, neutrophils 74%, lymphocytes 25%; platelets 190000/mm³; LFTs: serum bilirubin 1.1 mg/dl, SGPT 35 U/l, SGOT 32U/l; serum proteins 6.4 g/dl, serum albumin 4.3 g/dl; screening for hepatitis B & C negative; blood urea 28 mg/dl; serum creatinine 0.9 mg/dl; serum amylase level 96 u/ml and serum lipase was 58 U/ml.

Her X-Ray face right lateral view was performed which showed no radio-opaque shadow in parotid duct area. Then her right sided sialography was performed which demonstrated an acute bend with proximal dilatation in the right main Stensen's duct. Main duct showed beaded appearance. No stone or mass seen in the duct system. (Fig. 1 & 2)

Discussion

The parotid gland is a largest and is present in pair on either side of cheek located below and in front of the external acoustic meatus. It is wrapped around the mandibular ramus, and secretes saliva through Stensen's ducts into the oral cavity, to facilitate mastication and swallowing and to begin the digestion of starches. The parotid gland secretes alpha-amylase which is the first step in the decom-



Figure 1:



Figure 2:

position of starches during mastication. It breaks down amylose (straight chain starch) and amylopectin (branched starch) by hydrolyzing alpha 1,4 bonds.

Parotitis is the inflammation of parotid gland. Recurrent parotitis is defined as recurrent parotid inflammation, generally associated with obstructive sialiectasis of the parotid gland.^{9,10} This disease is characterised by recurring episodes of swelling and/or pain in the parotid gland, usually accompanied by fever and malaise. Etiology of chronic parotitis is considered to be multifactorial. The primary pathophysiological triggering event is identified to be a decrease in the quality and quantity of salivary secretion by the involved gland.⁹ A decrease in the secretion of saliva causes stasis and inspissation of secretions causing retrograde bacterial contamination of the ductal system. If the contamination is caused by pyogenic organisms then it is considered to be acute suppurative sialadenitis. These infections may result in destruction of acinar elements and cause ductal

ectasia. Sialolithiasis may form as a result of chronic infections. But on the other hand it is also true that sialolithiasis may cause chronic parotitis.

Local causes of reduced salivary flow include: Ductal stones, Ductal strictures, Mucous plugging of the duct, Congenital abnormalities of the duct, Dehydration, Immune disorders like Mikulicz disease, Sjogren syndrome and chronic autoimmune parotitis and Drug induced – Atropine and antihistamines may predispose.⁶ Another rare cause of reduced salivary flow is kink in the course of Stensen's duct which may be due to congenital malformation or rarely by masseter muscle hypertrophy.^{7,8} Masseter muscle hypertrophy (MMH) is a fairly rare condition with less than 200 reported cases in the literature.² Most commonly it is an asymptomatic enlargement of the masseter muscle that can present unilaterally or bilaterally. The most common etiology of MMH is due to overuse of the jaws due to clenching, bruxism, constant chewing or temporomandibular joint disorder.^{2,3} As a result, MMH has an insidious development over a number of years.

Sialography is the modality of choice to diagnose the cause and site of obstruction.^{5,7} Sialography is performed by injecting contrast agent into the ductal system of the salivary gland which outlines the ductal system of parotid gland. The ductal dilatation and acinar distortion are readily appreciated in a sialogram.

References

1. Ardekian L, Shamir D, Trabelsi M, Peled M. Chronic obstructive parotitis due to strictures of Stenson's duct--our treatment experience with sialoendoscopy. *J Oral Maxillofac Surg.* 2010 Jan; **68(1)**: 83-7.
2. Rispoli DZ, Camargo PM, Pires JL Jr, Fonseca VR, Mandelli KK, Pereira MAC: Benign masseter muscle hypertrophy. *Braz J Otorhinolaryngol* 2008; **74**: 790-3.
3. Sannomiya EZ, Goncalves M, Cavalcanti MP: Masseter muscle hypertrophy – case report. *Braz Dent J* 2006; **17**: 347–50.
4. Nahlieli O, Shacham R, Shlesinger M, Eliav E: Juvenile recurrent parotitis: a new method of diagnosis and treatment. *Pediatrics* 2004; **114**: 9-12.
5. Khanna G, Sato Y, Smith RJ, Bauman NM, Nerad J: Causes of facial swelling in pediatric patients: correlation of clinical and radiologic findings. *Radiographics* 2006; **26**: 157-71.
6. Yu C, Zheng L, Yang C, Shen N. Causes of chronic obstructive parotitis and management by sialoendoscopy. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod.* Mar 2008; **105(3)**: 365-70.
7. Nahlieli O, Shacham R, Yoffe B, Eliav E. Diagnosis and treatment of strictures and kinks in salivary gland ducts. *J Oral Maxillofac Surg.* May 2001; **59(5)**: 484-90.
8. Zou ZJ. *Zhonghua Kou Qiang Yi Xue Za Zhi.* Chronic obstructive parotitis: a report of 92 cases. Jul 1992; **27(4)**: 200-2, 255.
9. Zou ZJ, Wang SL, Wu QG, Ma XC, Song ZC. Recurrent parotitis in adults. Report of 35 cases. *Chin Med J (Engl).* Nov 1993; **106(11)**: 835-40.
10. Abai S, Mandel L. Chronic parotitis. *N Y State Dent J.* Oct 2003; **69(8)**: 21-3.
11. Koch M, Iro H, Zenk J. Role of sialoscopy in the treatment of Stensen's duct strictures. *Ann Otol Rhinol Laryngol.* Apr 2008; **117(4)**: 271-8.
12. Ngu RK, Brown JE, Whaites EJ, Drage NA, Ng SY, Makdissi J. Salivary duct strictures: nature and incidence in benign salivary obstruction. *Dentomaxillofac Radiol.* Feb 2007; **36(2)**: 63-7.