Chronic Parotid Sialadenitis with Sialectasis: Diagnosis of Case through CT Sialography

INTRODUCTION

Sialadenitis is an inflammation of the salivary glands commonly affecting the parotid gland. It may be subdivided into acute, chronic and recurrent forms. Inflammatory changes in the ducts of the salivary glands are referred to as sialadenitis. Salivary gland examination plays an important role in oral diagnosis as most of the systemic diseases involve salivary glands. Sialography is one of the oldest imaging procedures, as it is a simple chair side procedure, easy to perform and cost worthy. Due to the evolution of advanced imaging modalities of ductal parenchyma through CT sialogram, it is slowly replacing the conventional sialography, thereby overcoming the pitfalls. Sialectasis is the sialographic appearance of dots or blobs of contrast medium within the gland caused by inflammation of the glandular tissue producing saccular dilatation of the acini. We here report a case of chronic parotid sialedenitis and role of sialography through computed tomography as an adjunct in the diagnosis of sialectasis and also as a diagnostic and therapeutic aid. Glandular lavage was performed after 1 week with 60 ml of normal saline and ductal dilatation with saline pressure which helped to clear the mucus plug that formed in acute phase.

CASE REPORT

A 40-year-old male patient reported with a complaint of acute pain and purulent discharge from the left side of mouth since 3 days which radiated to the left ear and aggravated on mastication. The patient gave history of repeated episodes of swelling on the left side of face since 3 years which was associated with pain, discomfort and salty taste. Pain and swelling was relieved on taking antibiotics and analgesics. On extra oral examination, there was intermittent, often painful, unilateral parotid swelling that may or may not be associated with eating. Intra-oral examination shows pus emanating from the Stenson’s duct orifice by gently massaging the gland. Sialectasis is the sialographic appearance of dots or blobs of contrast medium within the gland caused by inflammation of the glandular tissue producing saccular dilatation of the acini. We here report a case of chronic parotid sialadenitis with sialectasis: diagnosis of case through CT sialography.

KEYWORDS: sialadenitis, sialectasis, CT sialography

ABSTRACT

Sialadenitis is an inflammation of the salivary glands commonly affecting the parotid gland. It may be subdivided into acute, chronic and recurrent forms. Inflammatory changes in the ducts of the salivary glands are referred to as sialadenitis. Salivary gland examination plays an important role in oral diagnosis as most of the systemic diseases involve salivary glands. Sialography is one of the oldest imaging procedures, as it is a simple chair side procedure, easy to perform and cost worthy. The symptoms of chronic sialadenitis include intermittent, often painful, unilateral parotid swelling that may or may not be associated with eating. Intra-oral examination shows pus emanating from the Stenson’s duct orifice by gently massaging the gland. Sialectasis is the sialographic appearance of dots or blobs of contrast medium within the gland caused by inflammation of the glandular tissue producing saccular dilatation of the acini. We here report a case of chronic parotid sialadenitis and role of sialography through computed tomography as an adjunct in the diagnosis of sialectasis and also as a diagnostic and therapeutic aid. Glandular lavage was performed after 1 week with 60 ml of normal saline and ductal dilatation with saline pressure which helped to clear the mucus plug that formed in acute phase.

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on milking of left parotid gland (Fig. 1). The provisional diagnosis of chronic sialadenitis was made with differential diagnosis of recurrent parotitis and sialedenosis. Blood investigations were performed which were within normal limits. Patient was subjected for US who revealed minimally enlarged left parotid gland with mild to moderate intraglandular ductal dilatation. The main duct was not dilated (Fig. 2).

For further investigations, sialography was performed using Iopromide (Ultramist-300) as a contrast media for left parotid gland after the clinical symptoms subsided. CT sialogram revealed mild short segmental narrowing of left Stenson’s duct at its entry into the gland which had stricture. Multiple contrast filled spaces/dots or blobs within the gland were noted an appearance known as ‘sialectasis’ (Fig. 3). Based on history, clinical findings and radiographic investigations, a final diagnosis of chronic left parotid sialadenitis with sialectasis was made. Antibiotics and analgesics were prescribed for 10 days. Glandular lavage was performed after 1 week with 60 ml of normal saline and ductal dilatation with saline pressure which helped to clear the mucus plug that formed in acute phase. Patient was kept under observation and there is no recurrence of swelling and pus discharge till date (Fig. 4).
DISCUSSION

Sialadenitis is an inflammation of the salivary glands commonly affecting the parotid gland. It may be subdivided into acute, chronic and recurrent forms. The microbiology of infection of the submandibular and sublingual glands has rarely been reported. Chronic parotid sialadenitis is an insidious inflammatory disorder characterised by intermittent, often painful swelling of the gland which may or may not be associated with food intake. If left untreated, progress of the disease may lead to the formation of a fibrous mass in the gland. It is most commonly seen in the middle age. The primary pathogenic event in the pathogenesis of chronic parotid sialadenitis is believed to be a decrease in the secretion of salivary rate with ductal stasis and ascending infection. There is usually ductal obstruction, stones and stricture of the main duct system. Other causes include mucous plugs, injury to the duct and papilla and ductal compression by a tumour. The symptoms of chronic sialadenitis include intermittent, often painful and unilateral parotid swelling that may or may not be associated with eating. Intra-oral examination may show pus emanating from the Stenson’s duct orifice by gently massaging the gland. In a study done by Rzymska-Grala et al. (2010), evagination was seen in one case with severe stricture. Chronic sialadenitis can result from the poor outflow of saliva and in addition secondary infection of the gland can originate from incomplete obstruction by a sialolith. Glandular atrophy eventually occurs, when complete obstruction continues which was demonstrated in this study. Sialography is the choice of radiographic examination of the salivary glands. It usually involves the injection of a small amount of contrast medium into the salivary duct of a single gland, followed by routine X-ray projections. To diagnose the diseases of salivary glands, staging of the disease and treatment planning a detailed imaging is always necessary. In order to overcome the pitfalls of conventional radiography which provides minimal details of the Stenson’s duct, other imaging modalities such as sialography, CT, radionuclide imaging and MRI were introduced. Through ultrasound, it is possible to do the assessment of lesions of the gland parenchyma and intra and extra-glandular duct ectasia, periglandular structures and salivary stones. As CT and MRI are not economical, although they provide excellent soft tissue details, they are not done more often. Hence, sialography through CT remains a mainstay in the detailed assessment of the salivary glands when compared to the above mentioned imaging modalities. It is a quick procedure and easy to perform with minimal side effects. Sialography using CT is a recent advancement with non-invasive 3D imaging technique. Sialography is an important diagnostic procedure in the evaluation of salivary calculi, sialectasis, strictures, fistulae and tumours. The salivary gland disorders can be identified based on the various sialographic appearances seen on the radiographs. Lateral oblique radiograph was made following sialography which provided minimal details of the Stenson’s duct, whereas CT sialogram proved to be helpful in revealing an appearance known as ‘sialectasis’.

In our case, the sialography through CT revealed dots or blobs of contrast media distributed throughout the gland, an appearance known as ‘sialectasis’ suggestive of sialadenitis caused by the inflammation of glandular tissue producing dilation of terminal duct- and sac-like acini with normal main duct known as stricture. Although sialography is commonly used as a diagnostic aid, it is contraindicated in active infections of the salivary gland, allergy to contrast media, blocked salivary duct orifice due to the presence of saliolith or stricture and/or small orifice of salivary duct. In case of patients suffering from obstructive sialadenitis, sialography is not only used for diagnostic purpose, but also plays a major role as a therapeutic aid in the treatment. In our case of chronic parotid sialadenitis, glandular lavage was performed after 1 week with 60 ml of normal saline and ductal dilatation with saline pressure which helped to clear the mucus plug that form in acute phase which proved to be helpful for the patient. The treatment seems to be beneficial, as it helps to clear the mucous plugs and cells in case of recurrent infections. Mandel stated that steroids reduces swelling, but cannot prevent recurrences. The overall sensitivity of the CT sialography was found to be 57.14% with a specificity of 100%. Similar results could be seen in published series. On the other hand, CT sialography was reported to give precise mapping of mass lesions within and adjacent to the parotid gland owing to the small difference in soft tissue attenuation that was observed following sialography. Nahlieli et al. (2004) diagnosed and treated 21 cases of juvenile recurrent parotitis using lavage with 60 ml of normal saline and ductal dilatation with saline pressure or balloon dilatation followed by hydrocortisone (100 mg) injections via the endoscope into the gland in order to lavage the ductal system and the sialectases from plaques and to dilate strictures as in our case. Reddy SS et al. (2009) reported three cases
of sialography, in which one of the cases was treated by doing sialography at an interval of 2 months proved to be beneficial\(^{12}\).

CT is considered as the gold standard in the study of inflammatory diseases of the salivary glands, unlike neoplastic diseases which are more accurately studied using MR imaging. X-ray sialography is progressively being abandoned due to the invasiveness of the procedure, although this method is significantly more accurate than MR imaging of the salivary glands\(^{13}\). Radiographic examination is a must in diagnosing the lesions, and useful for planning management, which can be surgery or alternatives. Plain radiography, sialography, CT, cone-beam CT (CBCT), US, MRI and nuclear scintigraphy/positron emission tomography (PET), all play roles in the diagnosis of salivary gland lesions. Plain radiography is having limited clinical value in the evaluation of salivary gland pathology. Sialoliths or involvement of the adjacent mandible by a tumour can be seen, but patients with sialadenitis will give minimal details. In patients with contraindication for MRI, CT after sialography plays an important role\(^{14}\).

**CONCLUSION**

Chronic parotid sialadenitis of the parotid gland is an insidious inflammatory disorder characterised by intermittent, often painful and swelling of the gland. If left untreated, progressive of the disease may lead to the formation of a fibrous mass in the gland. So, early diagnosis and treatment are necessary, where sialography through CT plays a major role as an adjuvant in the diagnosis of sialectasis and also as a diagnostic and therapeutic aid.

**REFERENCES**