Sialography and Fistulography of Post-traumatic Fistulae; A Case presentation

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Abstract: Sialography is the retrograde injection of an iodinated contrast agent into the ductal system of salivary glands and this technique is the only method capable of adequately demonstrating the status of the ductal system. One of the indications of sialography is classification of the salivary ductal system fistulae. This classification has important prognostic and therapeutic values. In the present article, interesting diagnostic findings of combined parotid sialography and extraoral fistulography without using other advanced imaging techniques is discussed in an injured patient.

Key words: Sialography; Parotid Gland; Fistulae

INTRODUCTION
Salivary gland diseases are very common disorders and require radiological evaluation. Several radiological methods are used for assessment of these diseases. One of these methods is sialography which depicts nonopaque stones in the ductal system, provides additional information about the position of the stones and differentiates them from other calcified densities, and also provides information concerning ectasia of the ducts [1].

CT sialography has been found to be a safe and accurate method for evaluating salivary gland masses [2]. CT sialography and CT fistulography could be very helpful in the diagnosis and surgical planning of congenital fistulae from ectopic accessory parotid gland orifice(s) [3]. Fistulography is a radiographic procedure that demonstrates the origin and extent of fistulae (abnormal passages, usually between two internal organs). In this method, the tract is filled with a radiopaque contrast medium, usually under fluoroscopic control. Right-angle and oblique projections are occasionally required to demonstrate the full extent of a sinus tract [4].

In injured patients, classification of parotid fistulae based on sialographic findings has prognostic and therapeutic value and excellent results can be achieved with conservative therapy [5].

Considering the management of post-traumatic parotid fistulae, there is a significant difference between the healing period of complete ductal transections as compared to partial ductal transections and major or minor intraparotid duct injuries. Thus the diagnosis of the specific type of injury is important [5].

Sialographic signs of ductal and glandular trauma include complete occlusion of the duct probably due to scar formation (the most common sign), communication with a contrast...
filled cavity (sialocele) and fistulous communications. Contrast extravasation is another sialographic finding in salivary gland trauma [6].

**CASE REPORT**

A 72-year-old male patient presented with active fluid outflow (secretion) from a small orifice on the facial skin of the left cheek. The amount and severity of the secretion was increased during speaking and chewing. This problem had been present for the last 5 or 6 years, after a wild animal attacked and caused an extensive facial soft tissue laceration. There was no pain, tenderness or swelling on the left cheek during this time.

The past medical history was unremarkable. Sialography was suggested for this patient in order to appraise the presence of a fistula with a possible origin from the main duct of the left parotid gland.

Before the sialographic procedure, the fistula was easily traced by a gutta percha, which revealed a potent passage. After dilatation of the left parotid duct with gutta percha points from number 20 to 45, the main duct was cannulated through the orifice using a modified canula (scalp vein, gauge 22 with blunt needle pick Shan chuan Co. China). Then contrast medium (omnipaque contrast material 240 mg/ml concentration, Nycomed, Ireland) was injected (Fig 1).

Sectional panoramic view was obtained from the left side after contrast medium injection. The main duct of the left parotid was traversed by the image of the gutta percha used for tracing. Extravasation of contrast medium was not observed around the gutta percha tracer (Fig 2).

This finding eliminated the possibility of a main duct dilaceration. For further confirmation, a mandibular PA radiograph was obtained (Fig 3). A gap could be clearly identified between the gutta percha tracer and the main duct.

After finishing the wash out phase of previous step, fistulography was performed from buccal cheek fistulae (Fig 4).

In order to achieve a better comparison with the previous images, the sectional panoramic view of the left side and also the mandibular PA was repeated (Fig 5A &B). These images revealed a new glandular component with a dilated duct in relation to the cheek orifice.

Analysis of the obtained images confirmed that the accessory gland main duct was severed and that a simple extraoral fistulous communication was formed. There was no communication with a contrast filled cavity.

After removing the canula, contrast material

![Fig. 1: Photograph of the patient after intraoral cannulation of the main duct of the left parotid gland and gutta percha tracing of the extraoral fistula (arrow).](image1)

![Fig. 2: Sialogram of the left parotid showed intersection of the gutta percha shadow (arrows) on the left parotid main duct without contrast extravasation around the main duct.](image2)
was secreted from the extraoral orifice. The patient did not complain of bad taste regarding the contrast material.

**DISCUSSION**

Congenital salivary fistulae can originate from the parotid, submandibular, ectopic salivary glands and rarely accessory parotid glands [1]. Diagnosis of congenital fistulae from ectopic accessory parotid glands using fistulography has previously been reported [3]. Some of the important aspects of the present case report are as follows:

1) Sialography and fistulography were used exclusively for the diagnosis of the severed accessory parotid duct without application of CT or MRI.

2) Right angle images were obtained in the sialography and fistulography procedures which were very important in the diagnosis of the severed ductal system.

3) Extraoral fistulization of the accessory gland duct was observed in the form of a new orifice.

4) Sialography could be superior to CT scan and MRI in the subtle evaluation of a severed ductal system.

CT sialography and CT fistulography are effective methods when evaluating the relation of fistulae and accessory gland main ducts to
the surrounding soft tissue. Therefore whenever socio-economically possible, they should be the methods of choice.

REFERENCES
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سیالوگرافی و فیستولوگرافی از فیستول ایجاد شده پس از ترور

(گزارش مورد)

ز. دلیلی

چکیده
سیالوگرافی عبارت است از تزریق یک عامل کنتراس حاوی یدب به صورت رتوگرد در داخل سیستم مجاری غذه بر اساس بهبود و تحقیق روشنی است که قادر است به طور مکفی وضعیت سیستم مجاری را نمایش دهد. پس از ورود سیالوگرافی، طبقه‌بندی، فیستول‌های سیستم مجاری از روش‌های اولیه است. این طبقه‌بندی واجد ارزش‌های واقعی در زمینه پیش‌آگاهی و درمان است. در مقاله حاضر یافته‌های تشخیصی حاصل از ترکیب ویژه سیالوگرافی پاروئید و فیستولوگرافی خارج دهانی به استفاده از سایر روش‌های تصویربرداری پیشرفته در بیمار مصدوم ارائه شده است.

واژه‌های کلیدی: سیالوگرافی، غده پاروئید، فیستول

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