Use of irrigation device for duct dilatation during sialendoscopy

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ABSTRACT

METHODS AND MATERIALS

The continuous irrigation of the salivary duct is one of the cardinal points of an effective sialoendoscopic procedure. Irrigation with isotonic saline is necessary to overcome the sphincter-like contractile mechanism that keeps the duct in a collapsed condition and allows an adequate luminal distension. Irrigation also plays a pivotal therapeutic role, allowing the removal of debris and mucous plugs from the ductal system and the conservative treatment of strictures, solving many of the most common obstructive salivary gland conditions. Although some devices declared to have been proposed for sialoendoscopic procedures, they are burdened by high costs and are not available in all centers. For this reason, most surgeons opt for manual irrigation. This procedure can be laborious and often is necessary to interrupt irrigation during surgery due to the high resistance to saline.

In this prospective study 18 consecutive patients with submandibular (11) or parotid (7) sialadenitis secondary to sialolithiasis (6), strictures (2), or mucous plugs (10) were included. Interventions were carried out under local (10) or general (8) anesthesia (Table 1).

<table>
<thead>
<tr>
<th>Period</th>
<th>From May 2016 to June 2011</th>
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<tbody>
<tr>
<td>Cases</td>
<td>18 Patients</td>
</tr>
<tr>
<td>Pathology</td>
<td>11 with Submandibular sialadenitis</td>
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<td></td>
<td>7 with parotid sialadenitis</td>
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<tr>
<td></td>
<td>6 Sialoliths</td>
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<tr>
<td></td>
<td>2 Strictures</td>
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<td></td>
<td>10 Mucous Plugs</td>
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<td></td>
<td>10 Local Anesthesia</td>
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<td>8 General Anesthesia</td>
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</table>

Table 1. Our cases

METHODS

Patients were divided into 2 groups. In group A 9 patients underwent dilatation of the duct using an Acclarent Balloon Inflation Device (Acclarent Inc., Menlo Park, U.S.A.) used to control inflation of the Balloon Catheters to dilate obstructed salivary ducts during sialendoscopy (Fig. 1), while in group B dilatations were performed using a classic manual irrigation. After each procedure, the surgical team expressed an overall evaluation of the effectiveness of irrigation by completing a VAS scale.

Technique

In order to perform an adequate and constant dilation of the salivary ducts the Acclarent Balloon Inflation Device is connected with the irrigation channel of the sialoendoscope and a saline solution bottle through a three-way stop-cock (Fig. 2) positioned so as to allow saline to pass from the bottle to the syringe of the device which can be filled with 20 ml of solution (Fig. 3).

Figure 1.

Figure 2.

Figure 3.

A: The 3-way stop-cock is rotated to allow saline to fill the irrigation device. B: The 3-way stop-cock is rotated to allow saline to flow into the salivary duct through the irrigation channel of the endoscope.

The pulsation handle has to be turned clockwise in order to push the saline to the sialendoscope so that the pressure in the ductal system increases until the desired level is reached. A gauge is used to monitor the pressure of saline in the duct. Once the saline in the syringe is finished, the whole procedure can be repeated.

RESULTS

Sialoliths, strictures and mucous plugs were visualized and managed in all patients. No major complications occurred either intra- or postoperatively in patients of both groups. The technique of irrigation adopted in Group A obtained a subjective assessment higher than that used in Group B.

CONCLUSIONS

The irrigation system that we have described in this paper can be widely used to perform dilatation of salivary gland ducts during diagnostic or interventional sialendoscopy being more effective than typical manual irrigation and cheaper than other irrigation methods.

REFERENCES