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Case report

Transnasal endoscopic removal of bilateral postoperative maxillary cysts after aesthetic orthognathic ssurgery: Differences from that of Caldwell-Luc operations

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ABSTRACT

Postoperative maxillary cysts (PMCs) after orthognathic surgery are a rare disease condition. In this study, we reported first case of bilateral PMCs after cosmetic orthognathic surgery which was treated via the intranasal endoscopic approach. In addition, we compared the characteristics of PMCs after aesthetic orthognathic surgery with those of PMCs after Caldwell-Luc operation. We expect that this case will be helpful to surgeons who encounter similar cases.

1. Introduction

A postoperative maxillary cyst (PMC) after aesthetic orthognathic surgery is a rare disease condition; only one bilateral case and a few unilateral cases have been reported in the English-language literature. Recently, the number of cosmetic orthognathic surgeries such as double-jaw surgeries has increased dramatically [1]. As a result, the number of PMCs after aesthetic orthognathic surgery will also increase.

In previously reported cases, PMCs after aesthetic orthognathic surgery were treated via external approaches such as gingivobuccal incision [2,3]. On the contrary, nowadays, endoscopic treatment is widely accepted for treating PMCs after chronic sinusitis surgery [4,5]. There may be a difference in the characteristics of PMCs after orthognathic surgery and PMCs after Caldwell-Luc operation (CL-op). However, we thought that it would be possible to perform an endoscopic intranasal approach and that endoscopic treatment would be superior in treating PMCs after cosmetic orthognathic surgery, as in treating PMCs after chronic sinusitis surgery [4,5].

In this study, we present the first case of transnasal endoscopic marsupialization of bilateral PMCs after orthognathic surgery. In addition, we attempted to analyze the clinical differences between treatment of PMCs after orthognathic surgery and that of PMCs after CL-op.

2. Case

A 35-year-old woman visited a tertiary hospital complaining of right cheek pain that had been ongoing for one month; she had a history of aesthetic orthognathic surgery in the past 10 years. There were no specific findings on physical examination, including flexible nasopharyngolaryngoscopy.

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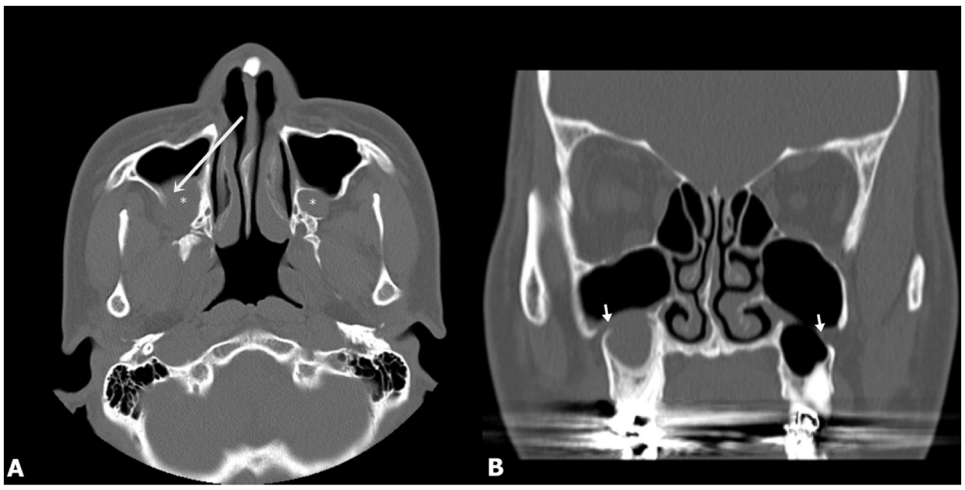

Fig. 1. Axial computed tomography (CT) revealed bilateral postoperative maxillary cysts after orthognathic surgery on bilateral posterior aspects of the maxillae (1A, *). Coronal CT revealed the evidence of osteotomy (B, small arrow). The cyst was approached via inferior meatal antrostomy (long white arrow), and the antrostomy was made on the anterior portion of the lateral nasal wall. Note the thick bony portion on the posterior portion of the lateral nasal wall and the implant on the nasal dorsum.

Computed tomography (CT) revealed bilateral maxillary cysts, evidence of osteotomy for aesthetic orthognathic surgery, and evidence of a silicone implant on the nasal dorsum (Fig. 1). The diagnosis was bilateral PMCs after orthognathic surgery, and we planned transnasal endoscopic marsupialization of the cysts.

Surgery was performed under local anesthesia. We tried to perform inferior meatal antrostomy (IMA) on the medial side of the cyst. However, we could not perform IMA at the level of the cysts because they were located lateral to the vertical plate of palatine bone and close to the greater and lesser palatine foramina. We performed inferior meatal antrostomy (IMA) 0.5 cm anterior to the medial wall of the cyst (Fig. 1A, asterisk). The long white arrow in Fig. 1 shows the direction of our approach. With use of our surgical navigation system, we safely removed the anterior wall of the cyst with a surgical drill within the maxillary sinus and ruptured the cyst and drained the cystic fluid. At the 9-month follow-up, the lesions had healed uneventfully, and there was no evidence of local recurrence (Fig. 2).

3. Materials and methods

We conducted a retrospective chart review to compare the characteristics of PMCs after orthognathic surgery with those of PMCs after CL-op. We evaluated two more cases of PMCs from other studies for which clear CT images were available [2,3]. In addition, we identified and analyzed 50 cases of endoscopically marsupialized PMCs after Caldwell-Luc operation in our hospital from January 2013 to August 2016 (Table 1). Demographic factors, site of disease, symptom onset after primary surgery, shape of the maxillary sinus, the remnant aerated portion in the maxilla, and the location of cysts were analyzed.

The shapes of maxillary sinuses were classified as distorted or not distorted. If a sinus showed sclerotic changes with atelectasis, was only composed of a cystic portion, or the volume of the sinus was less than 50% of that on the contralateral side due to atelectasis, the sinus was defined as

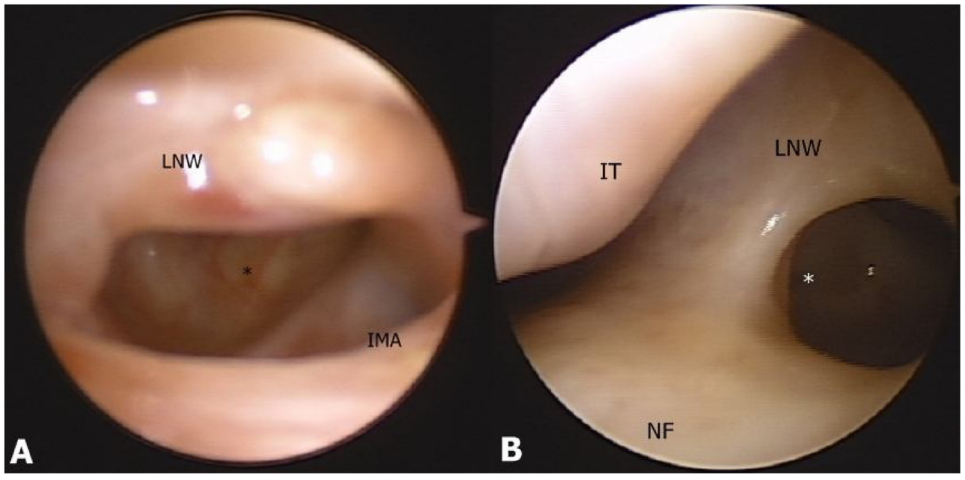

Fig. 2. Postoperative 9 months endoscopic finding of the lateral nasal wall (A: right nasal cavity, B: left nasal cavity). Inferior meatal antrostomy site was kept well. The symptoms of patients were resolved. LNW: lateral nasal wall, IMA: inferior meatal antrostomy site, IT: inferior turbinate, NF: nasal floor, *: site of the postoperative cyst in the maxillary sinus.

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