Aesthetic Reconstruction After Parotidectomy in a Pediatric Patient
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Abstract
Parotidectomy is a mainstay of treatment for benign and malignant parotid lesions in children. Depending on the surgical methods used and tumor size, parotidectomy may result in significant disfigurement. We describe a 13 year old male who presented to our clinic with a 3 centimeter pleomorphic adenoma. He subsequently underwent parotidectomy using a facelift incision approach, SMAS flap, and immediate reconstruction using an abdominal free adipose graft. These methods are not well described in pediatric literature. A review of current literature and description of this reconstructive method is outlined in this paper.

Keywords: parotidectomy, reconstruction, superficial musculoaponeurotic system (SMAS), fat graft, adipose autograft, pediatric, parotid

Introduction
Parotidectomy is the mainstay of treatment for benign and malignant lesions in both adult and pediatric populations [1,2]. Due to the parotid gland's size and location on the face, parotidectomy may cause significant contour defects, resulting in mild to severe disfigurement.

Parotidectomy is well described in the literature. The use of a superficial musculoaponeurotic system (SMAS) flap has been described as a method of decreasing the risk of gustatory sweating (Frey’s syndrome) postoperatively. Even more recently, the use of free fat and dermal fat grafts from the abdomen have been described as methods for immediate reconstruction in the adult population [3]. To our knowledge, these methods have not yet been characterized in the pediatric population. In this paper, we describe a successful case using a facelift type incision approach in conjunction with SMAS flap and abdominal free fat graft for the immediate reconstruction of a parotidectomy defect in a pediatric patient.

Case
A 13-year-old male presented to our clinic with a left-sided parotid mass. The mass has been present for approximately two years and was slowly increasing in size. The patient denied any other concerning findings and had no previous medical or surgical history. On exam, all cranial nerves were intact; there was no lymphadenopathy. Palpation of the left parotid demonstrated a moderately firm, easily mobile 2-cm mass lying over the angle of the mandible. Ultrasound demonstrated a discrete mass with no additional lesions. Magnetic resonance imaging with and without contrast demonstrated a 2.7-cm, T2-weighted hyperintense parotid mass. Fine needle aspiration was performed and was suggestive for pleomorphic adenoma.

Case (cont.)

The patient was subsequently taken to the operating room where superficial parotidectomy was performed. A facelift incision was used, and a skin flap and SMAS flap were elevated in standard fashion. (Figure 1A) A superficial parotidectomy, with meticulous dissection and protection of the facial nerve, was performed. Following parotidectomy, abdominal fat was harvested via a small periumbilical incision. The parotidectomy defect was then recontoured with abdominal fat and the wound was closed in a layered fashion. (Figures 1B,1C) In subsequent follow-up visits, the aesthetic postoperative result was considered superior when compared with more traditional parotid mass resection methods in pediatrics. (Figure 2,3)

Results & Discussion
The differential diagnosis of a pediatric parotid mass is extensive. Pediatric parotid masses are commonly benign and include hemangiomas and pleomorphic adenomas. Malignant pediatric parotid masses commonly include mucoepidermoid and acinic cell carcinoma, as well as outliers such as neuroblastoma or sarcoma [4,5]. The treatment of choice for pediatric parotid masses is parotidectomy. Pediatric parotidectomy has similar complication rates as in adults, including a risk of facial nerve weakness postoperatively [6].

Previous literature demonstrates the efficacy and long-term viability of immediate SMAS flap and free fat graft for parotidectomy defect reconstruction [7]. To our knowledge, this method has not been described in the pediatric population. Although there is a paucity of data, the pediatric population could benefit greatly from this proven method of immediate reconstruction. We have used the method described in this paper extensively in the adult population with great success. This case demonstrates the potential applicability of this method for use in the pediatric population as well. Larger studies should be performed to further assess its use.

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Figure 1
A) Exposure provided by a facelift incision approach. After incision, both supra-SMAS and sub-SMAS planes were elevated. B) Lateral view of wound closure after parotidectomy, SMAS flap and abdominal fat autograft. C) Anterior view after immediate reconstruction. Notice the intentional overfilling of defect in anticipation of volume loss due to resolution of acute edema and fat graft atrophy.

Figure 2
This photo series shows the patient's appearance two weeks post-operatively. Note the well-healed incision and slight over-filling of the left parotid region.

Figure 3
This photo series shows the patient three months post-operatively. Note the near complete resolution of facial asymmetry with no obvious defect visible. The parotid over-filling is nearly resolved.

References