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CASE REPORT
Reconstructive

Subcutaneous Pleomorphic Adenoma in an Accessory Parotid Gland in the Cheek

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Summary: The accessory parotid gland (APG) is a distinct salivary tissue in the cheek that is located on the masseter muscle and is separate from the main parotid gland. APG tumors (APGTs) are rare. Due to aesthetic reasons and the risk of both malignancy and recurrence, APGTs are best treated with surgical resection. The resection should be conducted carefully due to potential complications such as Stensen duct and facial nerve injuries. Notably, plastic surgeons rarely see APGT cases because they are classified as parotid gland tumors and are thus mostly treated by otorhinolaryngologists. Nonetheless, because they are subcutaneous tumors in the cheek, patients with APGTs do occasionally visit the plastic surgery outpatient clinic. We report a case of APGT in a 59-year-old woman. She presented in our hospital with a rigid mass in the right cheek that was difficult to diagnose on the basis of clinical findings. After magnetic resonance imaging, APGT was considered along with several other possibilities. However, it was only diagnosed after histopathology on the resected tissues. Thus, plastic surgeons treating subcutaneous tumors of the cheek should consider APGT in their differential diagnosis and seek an accurate preoperative diagnosis, because this will help avoid postoperative complications. *(Plast Reconstr Surg Glob Open 2024; 12:e6211; doi: 10.1097/GOX.0000000000006211; Published online 3 October 2024.)*

The accessory parotid gland (APG) is a subcutaneous cheek gland that lies adjacent to the anterior of the parotid gland, but is quite distinct from the main parotid gland: the average distance between the main parotid gland and APG is 6 mm. The APG lies on the surface of the masseter muscle close to the Stensen duct. Histologically, it is identical to the parotid gland. It occurs in 21%–69% of individuals.[1–3] Although tumors can arise from the APG, they are rare, accounting for only 1% of parotid gland tumors.[4] Of these APG tumors (APTGs), 26%–52% are malignant. The most common benign APGT is pleomorphic adenoma (60% of all benign APGTs), whereas the most common malignant APGT is mucoepidermoid carcinoma.[1,2,4] The pleomorphic adenomas are of concern because they can become malignant.[1,4] Therefore, if plastic surgeons observe a subcutaneous tumor in the cheek, they should consider APGT as a differential diagnosis.

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CASE REPORT

A 59-year-old woman with no history of facial surgery or trauma presented at another medical clinic with a painless rigid mass in the right cheek that had been progressively enlarging over 10 years. It was initially suspected to be a cheek epidermal cyst, and the patient was referred to our plastic surgery department. The initial consultation revealed a subcutaneous tumor with mobile and resilient hardness under the skin on the right cheek. Part of the tumor had adhered to the epidermis (Fig. 1).

T1-weighted magnetic resonance imaging (MRI) showed a 14×27-mm solid tumor with low signal intensity on the anterior masseter muscle. It was distinct from the main parotid gland (Fig. 2). It also showed smooth margins, which was suggestive of a benign tumor. At that time, several differential diagnoses were considered, including APGT.

We planned to remove the tumor surgically via direct transcutaneous incision under local anesthesia. We dissected the tumor very carefully, taking into consideration the existence of a facial nerve and the Stensen duct near the tumor. There were no adhesions to the surrounding tissues, and the surface of the mass was relatively smooth,

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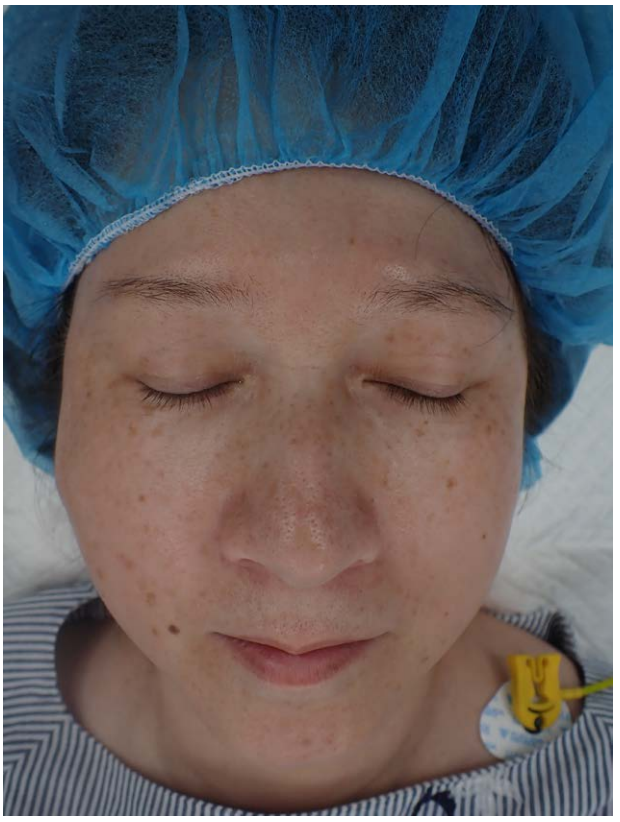

Fig. 1. Photograph of the patient showing the enlarged accessory parotid gland in the right cheek.

allowing for complete resection. (**See figure, Supplemental Digital Content 1,** which displays an intraoperative picture of the resected tumor and incision. **http://links.lww.com/PRSGO/D538**.) Neither the nerve nor Stensen duct were observed.

Histopathology with hematoxylin and eosin staining showed a mass containing cartilage-like matrix and scattered epithelial and myoepithelial elements (Fig. 3). The resection also included some salivary gland tissues (Fig. 3A). Thus, the salivary gland tissues and the mass were diagnosed as APG and pleomorphic adenoma, respectively.

In the year after surgery, the patient exhibited no complications such as facial nerve paralysis or salivary leakage. The scar shows only small depression and induration. (**See figure, Supplemental Digital Content 2,** which displays that the patient has a slightly dented scar on her right cheek in which a bit of hardness is recognized 1 year after surgery. **http://links.lww.com/PRSGO/D539**.) She has no concerns about it.

DISCUSSION

We report here a case of APGT, which is a rare tumor. These tumors are challenging to diagnose on the basis of physical examination because they closely resemble other, more common, subcutaneous tumors. Radiological imaging such as computed tomography or MRI and ultrasound scans can be used for diagnosis:[5] this will show whether

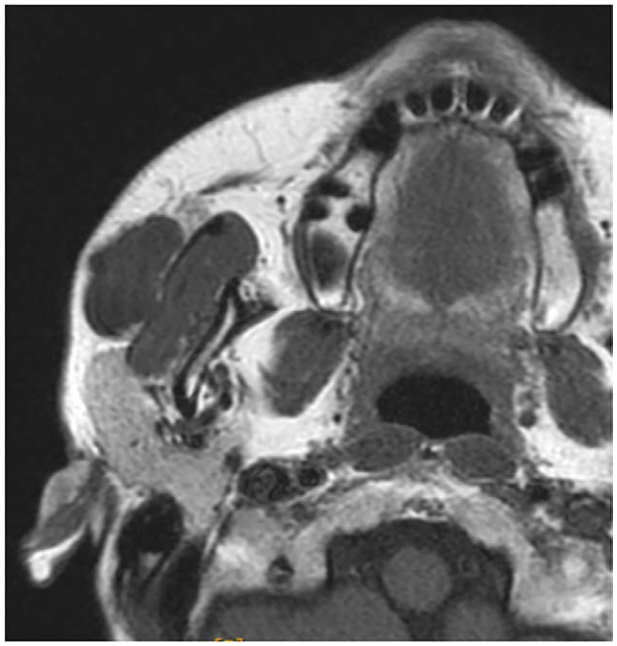

Fig. 2. Axial MRI (T1-weighted image) showing a 14×27-mm mass with low signal intensity in the anterior masseter muscle. There was no obvious contact with the main parotid gland or Stensen duct.

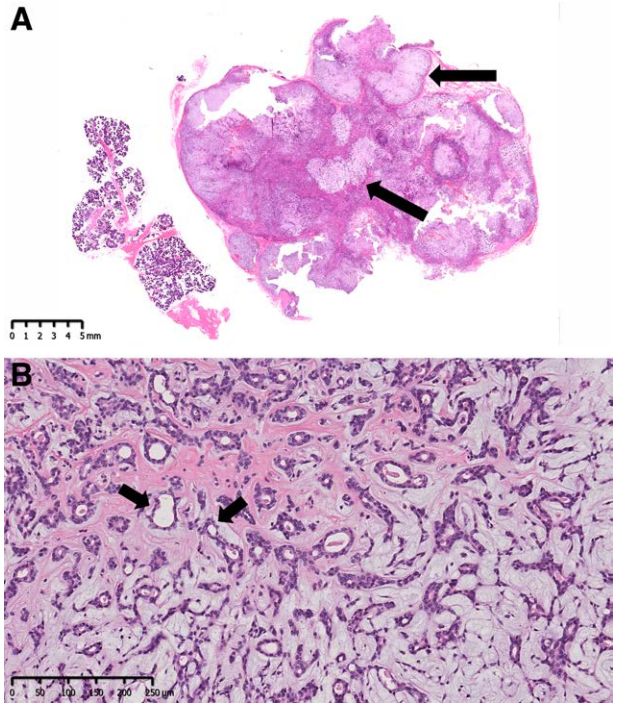

Fig. 3. Histopathological image of the patient's resected tumor. Histopathology of the resected tissue with hematoxylin and eosin staining reveals (A) cartilage-like matrix (arrows) and salivary gland tissue (magnification ×5) and (B) epithelial and myoepithelial components (arrows) (magnification ×100).

the APG and its tumor are located on the surface of the masseter muscle and are separate from the main parotid gland.[1] These features are crucial for diagnosing APG and

APGT. Fine-needle aspiration cytology can also be useful for preoperative assessments of subcutaneous cheek tumors: it diagnoses APGT with an accuracy of 48%. It is more sensitive for benign APGTs than for malignant APGTs (91% versus 73%).[6] Thus, when imaging suggests an APGT, additional tests such as fine-needle aspiration cytology should be considered.

The primary treatment for APGT is surgery. Due to the proximity of APGTs to the facial nerve and Stensen duct, surgery should be conducted cautiously: 8.7% of APGT-resection cases develop postoperative complications such as Frey syndrome, salivary leak, and transient facial-nerve disorders.[2] The risk of recurrence is also higher if the tumor capsule is damaged during surgery. Surgical approaches include standard parotidectomy incisions, intraoral incisions, and direct transcutaneous incisions. The standard parotidectomy approach is most commonly used due to its good surgical field visibility: this reduces the risk of damaging the facial nerve and Stensen duct and increases the likelihood that the tumor is removed completely. The intraoral incision approach is used for benign tumors (<30 mm) because it eliminates the risk of facial skin scarring and the operation time is shorter than that for standard parotidectomy. However, because it associates with a higher risk of facial nerve damage, a nerve stimulator must be used during surgery. The direct transcutaneous approach saves time but carries a relatively high risk of facial nerve damage and is limited to relatively small or anteriorly located tumors. It is crucial for surgeons to understand the features of each approach and make the best choice on a case-by-case basis.[2,7,8]

In our case, the tumor was located between the skin and masseter muscle. Because the MRI findings did not reveal clear signs of malignancy, several possibilities such as schwannoma or pleomorphic adenoma of APG were considered. However, APGT was only definitively diagnosed when surgery showed the tumor was not connected to the main parotid gland and the tumor and its associated salivary gland tissue underwent postresection histopathology. Our low suspicion of APGT reflects not only the rarity of these tumors but also the fact that APGTs are primarily treated by otorhinolaryngologists, not plastic surgeons. Nonetheless, because APGT is a subcutaneous tumor that forms in the cheek region, patients with APGTs do sometimes visit plastic surgery outpatient clinics, as was the case here. Thus, when plastic surgeons encounter subcutaneous tumors in the cheek area, they should consider APGT, especially if the tumor is independent of the main parotid gland. Additional tests such as fine-needle aspiration cytology may also be needed to accurately diagnose the tumor. Such tests will also help determine whether the tumor is malignant, which is important because resecting malignant APGTs may require lymph node dissection or main parotid gland resection.[2] Thus, APGTs should be diagnosed accurately before surgery: this will facilitate strategic surgical planning that avoids unnecessary surgery and postoperative complications.

CONCLUSIONS

We experienced a case of accessory parotid gland tumor, which is both rare and often not seen by plastic surgeons. It should be considered when treating subcutaneous tumors in the cheek.

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DISCLOSURES

The authors have no financial interest to declare in relation to the content of this article.

PATIENT CONSENT

The patient provided written consent for the use of their images.

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