Transoral Resection of Deep Parotid Lobe Pleomorphic Adenoma

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Abstract

Educational Objective: At the conclusion of this presentation, the participants should be able to observe the surgical benefits of a completely transoral resection of a deep parotid lobe pleomorphic adenoma.

Objective: Describe a unique case of complete transoral resection of a pleomorphic adenoma in the deep lobe of the parotid, allowing easier access and removal of the mass.

Study Design: Case Report

Methods: An ultrasound, followed by magnetic resonance imaging of the neck with contrast on a 28-year-old male revealed a bilobed mass in the right parotid region. In surgery, a hard mass could be palpated and an incision was made at the level of anterior tonsillar pillar and lateral soft palate. Exposure of all margins and careful dissection revealed a deep lobular mass. A preoperative system and bilateral cauterization were utilized throughout the case for mobilization, hemostasis, and complete removal of the tumor.

Results: Transoral resection revealed a 6 cm x 5 cm, multilobular, hard deep mass in the parotid histologically confirmed as pleomorphic adenoma. Two weeks postoperatively, patient had no complaints of pain except minimal discomfort with mouth opening. Patient stated no difficulties talking or eating, right base of tongue numbness and tingling with acidic food intake, and heaviness of his tongue. Through this approach, there was no significant bleeding, nasal scarring, and preservation of facial nerve function.

Conclusions: We report a successful transoral approach for complete resection of a deep parotid lobe pleomorphic adenoma. This approach allows for ease of access and removal of the mass; additional benefits include but are not limited: to preservation of the facial nerve, minimal bleeding, and no facial scarring.

Case Presentation

A 28-year-old male presented with a three to four year history of a right parotid mass which had increased in firmness. He denied dysphagia, facial tenderness, or numbness, or decreased sensation. On physical examination, right-sided medialization of the tonsil was noted and a firm mass was palpable transorally.

The patient underwent computed tomography (CT) scan and was referred to otolaryngology (Figure 1A). The patient subsequently underwent magnetic resonance imaging (MRI) and findings showed a lobulated mass on a T1-weighted scan with post contrast enhancement within the deep lobe of the parotid suggestive of pleomorphic adenoma (Figure 1B). Additionally, medial displacement of the right internal and external carotid artery, and lateral displacement of both pterygoid muscles was noted. The mass measured 5.8 cm in the oblique transverse plane x 4 cm in the anterior-posterior plane x 4.9 cm in the craniocaudal plane.

Fine needle aspiration revealed single cells and clusters of generally bland oval to spindle-shaped cells with small amounts of cytoplasm and oval nuclei with small amounts of myxoid stroma (Figure 2A and B). Final interpretation was suspicious for pleomorphic adenoma.

In the operating room, an incision was created between the soft palate medially and tonsillar fossa laterally. Dissection was conducted bluntly with bipolar cautery subsequently exposing the deep lobular mass, which appeared solid and well-circumscribed. After exposing the medial, lateral, superior and inferior margins, all quadrants were carefully undermined subperiosteally and posteriorly cohering the center of the tumor with the GOLDF laser™. The mass was then mobilized and dissection continued inferiorly and laterally in piecemeal fashion excising through the capsule and tissue. Endoscopic examination enhanced visualization during excision. The mass was rotated superiorly, laterally, medially, and inferiorly and debrided, then carefully pulled and mobilized appropriately. This was performed in a pericapsular fashion to prevent any injury to the surrounding tissues. We then completely mobilized the mass and cauterized the deep portion of the tissue. Through the entire case, the facial nerve electrode was not triggered and there was no significant bleeding aside from minimally noted around the tonsillar fossa.

Figure 1. Radiographs of Pleomorphic Adenoma. (A) Transverse CT scan revealed a 33 mm x 60 mm irregular shaped mass bulging into the oropharynx. (B) Coronal T1-weighted MRI scan revealed post contrast enhancement of deep lobe mass.

Figure 2. Hematoxylin and Eosin Stain of Cells in Pleomorphic Adenoma. (A) Tubule/duct formations in pleomorphic adenoma. Well-defined inner epithelial lining, consisting of cuboidal cells with eosinophilic cytoplasm, which can focially be clear, surrounded by a collar of one or more layers of myoepithelial cells with mostly clear cytoplasm. Stroma in between contains dispersed spindle and epithelioid myoepithelial cells. (B) Similar tubular arrangement are seen, but collar of myoepithelial cells is not as well defined. Stroma in between shows dispersed myoepithelial cells. In both A and B, note the bland nature of cells and absence of atypia. Image reprinted with permission from Medscape Reference http://emedicine.medscape.com/, 2013, available at: http://emedicine.medscape.com/article/1256405-overview

Discussion

Several approaches to surgical resection of deep lobe tumors include transcervical, transcervical-transparotid, transpalatal or transoral, transmandibular and orbitozygomatic or any of these combinations, with each aiming to properly gain access to the PPS. The multitude of tumor variations and differing variables that can encompass each clinical presentation have prompted much debate in the selection of operative approaches. Operator skill and experience are included but not limited to size, location, vascularity, malignancy and invasion all play a role in determining the ideal approach. Furthermore, the intimate association of the facial nerve with the parotid and tendencies for iatrogenic manipulation can complicate surgical procedures leading to facial paralysis and oration difficulties. While much care is taken to avoid this complication with facial nerve monitoring, access to the tumor is often employed as the chief concern in choosing ones approach. Historically, the transoral approach has been criticized due to limited viewing over the potential for inadequate hemostatic control, as well as salivary contamination of the wound. Because of the limited operational area, many clinicians worry about the ability to resect an intact tumor to prevent seeding. Because of this, it is argued that this procedure should be avoided if malignancy is suspected or diagnosed. Despite the recommendation to limit this method to tumors no greater than 3 cm diameter, there have been multiple examples of successful attempts in resection of tumors above 5 cm. Transoral approach can provide the most direct access to deep lobe pleomorphic adenomas that grow medially and present as an enlargement in the oropharynx. This approach also allows for an aesthetically pleasing result with a lack of external scarring and preservation of the superficial lobe of the parotid that prevents periauricular depression and gustatory sweating.

Conclusion

Here we report a successful, completely transoral approach to the excision of a deep lobe pleomorphic adenoma in the PPS. The location of these neoplasms, as well as the low rate of malignancy, make surgical treatment a topic of much debate. This case presentation is an example of utilization of a once novel technique and begins to establish it as a legitimate choice for surgical resection of pleomorphic adenomas. Tumor size restraints, hemostatic control, and risk for incomplete resection are all issues addressed in literature2,7. However, criticisms have begun to fall to the wayside in favor of the transoral approach’s direct access to the PPS and documented results of low complication rates.

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References