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CASE REPORT

Facial schwannoma of the parotid gland in a child

Çocuk hastada parotis bezinin fasyal schwannoması

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Schwannomas may rarely arise from the facial nerve and most commonly occur in the intratemporal part of the nerve. Extratemporal facial nerve schwannomas are extremely rare. Intraparotid schwannomas usually develop in adults and only one pediatric case has hitherto been reported. Herein, we reported the second case of facial nerve schwannoma in a 7-year-old boy who presented with a slow growing, painless preauricular mass of three-year history. Superficial parotid ultrasonography revealed a solid mass with homogenous echogenicity originating from the superficial parotid lobe. There was no facial nerve dysfunction. Superficial parotidectomy was performed. The main truncus and main branches of the facial nerve were found intact. The mass, nearly 3x3 cm in size, was originating from a communicating nerve between the marginal mandibular and buccal branches of the facial nerve. The tumor was removed together with this communicating branch. Histopathologic examination revealed schwannoma. Facial nerve functions were normal after the operation, and no recurrence was encountered in a six-month follow-up.

Key Words: Child; cranial nerve neoplasms; facial nerve diseases; neurilemmoma/surgery; parotid neoplasms.

Schwannomaların fasyal sinirden kaynaklanması nadirdir ve en sık olarak sinirin intratemporal kısmında gelişirler. Ekstratemporal fasyal sinir schwannomaları çok nadirdir. Parotis bezinde yerleşen schwannomalar genellikle erişkinlerde görülmektedir. Bu yerleşimin görüldüğü sadece bir çocuk hasta bildirilmiştir. Bu yazıda, literatürdeki ikinci bir olgu olarak, yedi yaşındaki erkek çocuk hastada saptanan fasyal sinir schwannoması sunuldu. Hasta, üç yıldır var olan, yavaş büyüyen, ağrısız bir preauriküler kitle nedeniyle başvurdu. Yüzeyel parotis ultrasonografisinde, yüzeyel parotis lobundan kaynaklanan ve homojen ekojenite gösteren solid bir kitle görüldü. Hastada fasyal sinir disfonksiyonu yoktu. Yüzeyel parotidektomi uygulanan hastada, fasyal sinirin ana gövdesi ve ana dallarının etkilenmemiş olduğu görüldü. Büyüklüğü yaklaşık 3x3 cm olan kitle, fasyal sinirin marjinal mandibüler ve bukkal dalları arasındaki bir bağlantı sinirinden kaynaklanmaktaydı. Tümör bu sinirle birlikte çıkarıldı. Histopatolojik inceleme sonucu schwannoma olarak bildirildi. Ameliyattan sonra fasyal sinir fonksiyonları normal olan hastanın altı aylık takibinde nükse rastlanmadı.

Anahtar Sözcükler: Çocuk; kranyal sinir neoplazileri; fasyal sinir hastalığı; nörilemmoma/cerrahi; parotis neoplazileri.

Schwannomas are slow growing, benign neuroectodermal neoplasms originating from schwann cells of peripheral nerves, cranial nerves, and autonomic nervous system.[1] Head and neck schwannomas constitute 25% of all schwannomas, most of which originate from vestibular portion of the cochleovestibular

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nerve.[2] Facial nerve schwannomas (neurilemmoma, neurinoma) can originate from any part of the nerve between the cerebellopontine angle and the facial nerve endings. The most common location is the intratemporal portion, and intraparotid localization is infrequent.[3] In a series of 428 patients, schwannoma of the extratemporal portion of the facial nerve was seen in only 64 cases.[3] In the English literature, there is only one reported case of parotid facial nerve schwannoma in a child.[4] Herein, we reported the second case of pediatric parotid facial nerve schwannoma.

CASE REPORT

A 7-year-old boy presented with a slow growing, painless preauricular mass of three-year history. On physical examination, there was a nontender, smooth surfaced, mobile mass, 3x3 cm in size, in the preauricular region between the tragus and mandibular angle. There was no facial nerve dysfunction. Fine needle aspiration biopsy was nondiagnostic. Complete blood count, blood chemistry, viral serology, and chest radiogram were unremarkable. Superficial parotid ultrasonography revealed a 2.5 to 3.5-cm solid mass with homogenous echogenicity originating from the superficial parotid lobe. Superficial parotidectomy was performed for diagnostic and therapeutic purposes.

Intraoperatively, the main truncus and main branches of the facial nerve were intact. The mass, nearly 3x3 cm in size, was originating from a communicating nerve between the marginal mandibular and buccal branches of the facial nerve. The tumor was removed together with this communicating branch, preserving the other branches. Histopathologic examination revealed schwannoma (Fig. 1). Facial nerve functions were normal after the operation, and no recurrence was encountered in a six-month follow-up.

DISCUSSION

Most of adult salivary gland tumors develop in the parotid gland and 82% of them are benign, the most common form being pleomorphic adenoma.[5] Tumors originating from the facial nerve constitute only 0.2% to 1.5% of all parotid tumors.[6] Childhood salivary gland tumors are far more scarce.[7] The most common pediatric parotid tumors are pleomorphic adenoma and hemangioma and 65% of parotid tumors are benign.[8] In the literature, only one pediatric facial nerve schwannoma has been reported to date.[4]

Preoperative diagnosis of parotid tumors of facial nerve origin is very difficult because of their rarity and similar clinical signs with other benign parotid tumors.[9] Half of the rare extratemporal facial nerve

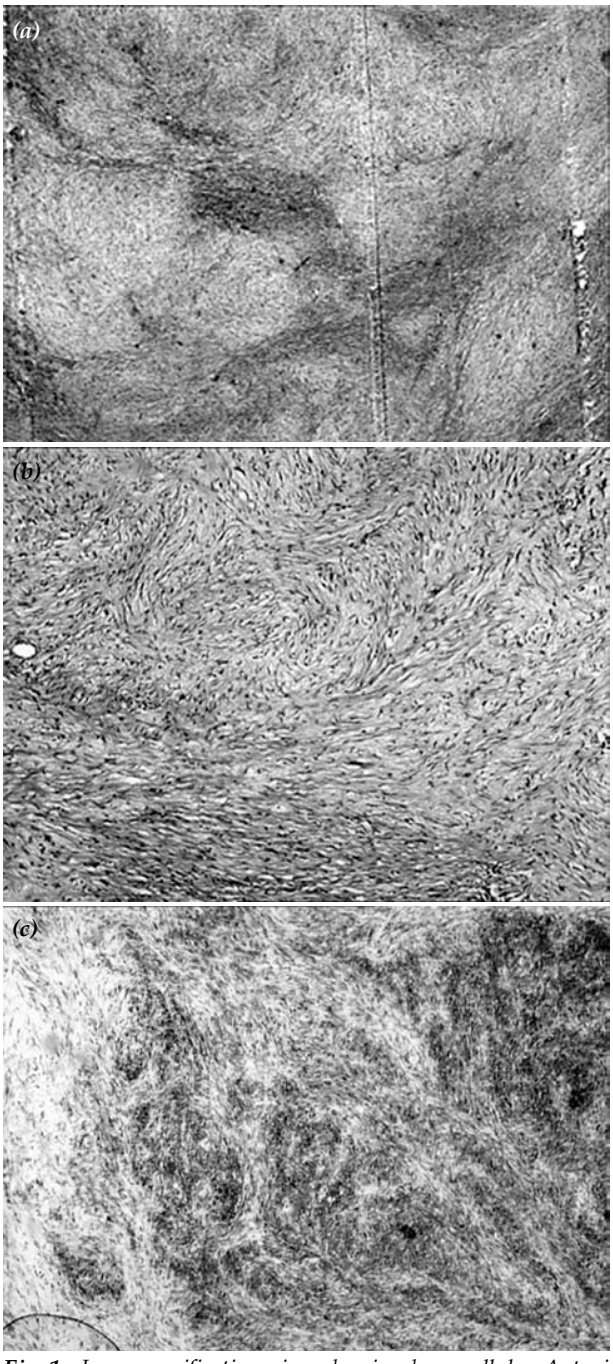

Fig. 1. *Low-magnification view showing hypercellular Antoni A and hypocellular Antoni B regions (H-E x 12.5).* ***(b)*** *High-magnification view showing scattered and palisading spindle cells (H-E x 100).* ***(c)*** *Diffuse staining pattern of neural elements with S-100 (S-100, EAC x 100).*

schwannomas arise from the main nerve truncus.[10] Distal location is even rarer and the tumor is usually seen in the superior branches of the nerve.[9] In the present case, the tumor originated from a communicating nerve between the marginal mandibular and buccal branches of the facial nerve. In the previously reported case, the tumor originated from the temporal branch of the facial nerve.[4] Facial nerve dysfunction may be present in some benign tumors, the possibility of nerve dysfunction being 20% for facial nerve schwannomas.[11]

Ultrasonography is frequently used for the evaluation of parotid tumors, but indications for computed tomography and magnetic resonance imaging are controversial. These techniques are used to determine the relationship between the tumor and the parotid gland and the extension of malignant tumors. Although they are valuable imaging techniques for the diagnosis of intratemporal schwannomas, specific radiologic findings are not defined for intraparotid schwannomas.[9]

Open surgical approach is not used in parotid tumors except in the case of gross skin invasion by tumor, and for benign tumors, total resection of the tumor with adequate tissue margin is the preferred surgical approach.[12] In the present case, superficial parotidectomy was performed successfully.

For the management of facial nerve schwannomas, patients should be informed about treatment options, and the merits and demerits of each option, and the treatment should be decided mutually by the physician and the patient, with consideration to facial nerve functions. Facial nerve decompression or only follow-up can be less traumatic options for some patients. If the nerve is severely involved, the treatment of choice would be tumor resection and reconstruction of the nerve defect with nerve grafting. If facial nerve functions are intact, then management options include tumor resection, decompression, or observation.[9] While surgical resection is the definitive treatment for benign tumors of facial nerve origin, they may be followed-up closely with serial electroneuronography and computed tomography.[10] In the present case, superficial parotidectomy was performed for diagnostic and therapeutic purposes. The rationale for surgery was the young age of the patient and unknown histopathology of the tumor. In our opinion, follow-up protocols should be reserved for older patients and for those with serious accompanying systemic diseases. Postponement of surgical treatment in young patients may cause extra morbidity and make surgery more difficult.

Schwannomas are encapsulated and solitary tumors that are usually adherent to the nerve.[11] Intraoperative findings of schwannomas are not different from other benign parotid tumors, but they are typically yellow tumoral masses in rubber consistency.[1,10] One of the typical features of intraparotid schwannomas is difficulty in locating the facial nerve. During superficial parotidectomy, tumor dissection from the facial nerve may be difficult.[9] Yet, facial nerve can be identified due to the enlargement of the tumor causing nerve fibers to be better visualized. Electrical stimulation of the tumor is a very distinctive method, resulting in movement of facial muscles.[9] Intraoperative examination of the main truncus and all peripheral branches of the facial nerve is recommended because of multicentric tumor possibility.[6,9] Frozen section biopsy is recommended in parotid tumor surgery; however, it should be handled with caution because unnecessary radical surgery was reported based on frozen section diagnosis of fibrosarcoma.[13]

Histopathologic examination may show two diverse histologic patterns, being a hypercellular pattern with Verocay bodies (Antoni type A) or a hypocellular pattern with foam cells (Antoni type B). However, both patterns could be seen in a tumor at different regions.[1]

Recurrence can develop after incomplete excision of the tumor. Since these are slow growing tumors surgical excision of recurrences is easy.[14] However, prognosis of solitary schwannomas after complete surgical excision is excellent. When principles of approach to benign parotid tumors are followed, pediatric parotid schwannomas can be managed successfully without complications.

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