Nonvestibular Schwannomas of the Head and Neck

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ABSTRACT

Schwannomas are benign encapsulated nerve sheath neoplasms arising from Schwann cells surrounding cranial, peripheral, and autonomic nerves. They are usually solitary lesions and they account for approximately 5% of all benign soft tissue tumors. (1-4) Male and female individuals are equally affected with a peak incidence usually between 30 and 50 years of age. (2) Twenty-five to 35% are seen in cervicofacial region. (5-7) In most cases, schwannomas are located in the 9 cranial nerves, 11 somatic cranial nerves, and the autonomic Blink nerve. (8) Approximately one third of schwannomas are intradural, with cranial nerves being the most common location of schwannoma origin occurring in 15% of the cases. (8,9) All schwannomas were resected totally except the one in the jugular foramen in our study. Because of their slow growth, most schwannomas were found incidentally during imaging. (8)

Introduction

Schwannomas are one of the most common tumors arising from peripheral nerve. However, schwannomas involving cranial nerves, spinal roots or spinal cord are relatively uncommon. Different cranial nerves, somatic cranial nerves, and autonomic nerve may be affected. Schwannomas most commonly arise from the trigeminal nerve or the facial nerve. (2) In this study, we aimed to retrospectively describe our experience with schwannomas located in the parapharyngeal space and posterior pharyngeal wall.

METHODS AND MATERIALS

The medical records of all patients with extracranial head and neck schwannomas were retrospectively reviewed. The clinical data of the patients were obtained including demographic data, presenting symptoms and signs, diagnostic radiologic findings, and treatment outcome. The results are expressed as numbers and percentages unless otherwise stated. The data were analyzed statistically using SPSS 21.0 software. The statistical significance was determined using the Chi-square test. The value of P<0.05 was considered as statistically significant.

RESULTS

Fifteen patients with nonvestibular, extracranial head and neck schwannomas were included in this study. The patients’ ages ranged from 11 to 73 years (mean: 46.3 years). The male-to-female ratio was 9:6. The most commonly involved cranial nerves were the facial nerve (6 cases), the hypoglossal nerve (4 cases), and the lingual nerve (3 cases). In addition, 2 cases originated from the brachial plexus and 1 case originated from the petrous side of the facial nerve. Fourteen of the 15 patients had schwannomas on the right side of the neck. The type of surgical approach was determined by the tumor site, tumor diameter and surgeon’s experience. The tumors in the parapharyngeal space were resected via transcervical approach. Superficial parotidectomy was performed for the tumors distributed over the parapharyngeal gland. The tumors in the parapharyngeal space were resected via transcervical approach. Suprahyoid myotomy and latero-submandibular approach was used for the tumors originating from the hypoglossal nerve and the lingual nerve. The tumor located in the suboccipital triangle was resected via posterior cervical approach after lateral suboccipital craniotomy. The compulsion of our patients was gradual neck swelling. Patients with parapharyngeal space and posterior pharyngeal wall schwannomas had slow-growing, solitary and painless mass of variable size. Although these tumors can cause neurologic deficits due to nerve involvement the chief complaint of our patients was gradual neck swelling. Patients with parapharyngeal and posterior pharyngeal space schwannomas located in the parapharyngeal gland presented with gradual swelling of the paralyzed hemifacial and trigeminal branch. The most common presenting signs and symptoms in patients with nonvestibular head and neck schwannomas were facial nerve paralysis (8 cases), dysphagia (3 cases), dyspnea (2 cases), coughing (1 case), and facial pain (2 cases). The type of schwannomas was made included. Demographic data of the patients, presenting symptoms and signs, diagnostic radiologic findings, and treatment outcome are demonstrated in Table 1.

CONCLUSIONS

Facial nerve is one of the most commonly involved cranial nerve in nonvestibular head and neck schwannomas. This study indicated that extracranial schwannomas located in the parapharyngeal space and posterior pharyngeal wall may occur more commonly than previously thought. Schwannomas located in the parapharyngeal space and posterior pharyngeal wall caused dysphagia, dyspnea and facial paralysis. The diagnosis of head and neck schwannomas begins with detailed history and a thorough head and neck examination. In addition, imaging plays a crucial role in the evaluation of these space-occupying lesions. Computed tomography and magnetic resonance imaging are the most accurate imaging techniques in the diagnosis of multiplies site in head and neck and they can them to a number of other differential diagnoses, sometimes the diagnosis may be delayed. Therefore, diagnosis of schwannomas is mainly based on clinical diagnosis. Although preoperative imaging may not always help for definitive diagnosis, it provides valuable information on size and location of the tumor. CT and MRI scan reveal valuable information concerning the relationship and extent of the involved cranial nerves. In this study, 15% of patients usually seen as well-demarcated homogenous lesions on CT scan. These lesions show some enhancement after the injection of contrast media. In this study, our most common initial diagnostic procedure was performed for the tumors located in the neck but none of the procedures had significant diagnostic value.

REFERENCES