Case Report

Cervical Schwannoma: A case report

Sahal Mohammedali Jaber[1], Karrar Ibrahim Mahmood[2], Ashraf Sami Mohammed[1]

[1]Rapporteur of Surgical Department, Jaber Ibn Hayyan Medical College, Al Najaf, Iraq, [2]Department of Surgery, Hammurabi College of Medicine, University of Babylon, Hilla, Babylon, Iraq

Abstract

Schwannomas are rare, benign nerve sheath neoplasms whose name is derived from Schwann cells, the glial cells that encase the myelinated nerves. These tumors are thought to originate from Schwann cells that develop embryologically from the neural crest. When Schwannomas grow in the anterior neck, they can compress and/or displace the carotid artery, but they often appear as a painless mass. MRI and CT scans play an important role in diagnosing these tumors, as they can delineate their location and their relationship to the carotid artery. This is the case of a 5-year-old girl who presented with swelling on the right side of the neck that was slowly enlarging, discomfort was the main symptom. CT scan revealed a mass deep in the carotid sheath, suspected to be a vagal schwannoma. Surgical excision was performed after careful dissection. Postoperative paralysis was due to neuropraxia, which healed over time. Therefore, physicians and surgeons evaluating neck masses must understand the diagnostic workup, surgical management, and potential complications of this condition.

Keywords: Cervical schwannoma, CT scans, MRI

Introduction

Schwannomas, also known as neurilemmomas or neurinomas, are benign nerve sheath tumors that originate from Schwann cells. They are thought to be Schwann cells that arise from the neural crest. Schwannomas are among the most common tumors in the peripheral nerve sheath and typically occur in the head or neck.[1] Cervical schwannomas in the neck arise from the spinal nerve and usually from the upper cervical spinal root,[2] schwannomas can arise from the vagus nerve or sympathetic chains (CSCS), (CSCS)are considered rare tumors.[2,3] Symptoms in the cervical spine due to the gradual increase in size.[3] If it is vagal in origin (near C5–6), it may compress and/or displace the carotid sheath and often present as a painless mass.[4]

Case summary

A 5-year-old female presented with a swelling on the right side of the neck that was painless and slowly increasing in size, discomfort was the main symptom, family history was negative, and investigations began with laboratory tests and thyroid function tests, which all showed normal values. The ultrasound showed a deep-seated mass with the suggestion to perform a CT scan. The result of the CT scan showed a mass on the neck which was deep in the carotid artery, suggesting a vagal schwannoma. An MDT was performed, and an MRI was requested. The parents declined; an FNAC was avoided due to the risk of trauma and hematoma, the risk and potential complications of surgery were discussed with the parents, and decision for surgery and planning of the resection. A team of general surgeons and ENT doctors with anesthesiologists.

Surgical approach

General anesthesia with a transverse incision above the site of the neck mass at level III, careful dissection of the carotid artery, careful dissection of the mass from the carotid artery with careful excision of the mass from the vagus nerve (intact), excision up to the base of the skull, insertion of a JP

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Address for correspondence: Dr. Karrar Ibrahim Mahmood, Department of Surgery, Hammurabi College of Medicine, University of Babylon, Hilla, Babylon 51002, Iraq.
E-mail: karar.ibrahim@uobabylon.edu.iq

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drain with closure in the layer, after the operation the patient stayed in the hospital for one day and was discharged well, on the 3rd postoperative day, the patient complained of aspiration while eating, vocal cord examination revealed that the vocal cord on the right side was immobile, NG tube was inserted and NG feeding started with regular monitoring, 21 days after surgery, NG tube was removed, and the patient started oral intake without any problems. Vocal cord examination was normal.

The result of the histopathologic examination was schwannoma. Regular follow-ups by clinical examination and ultrasound were done for two years.

Discussion

Schwannomas are rare nerve sheath neoplasms that may arise from any cranial, autonomic, or peripheral nerve.[5]

Schwannomas usually grow longitudinally along the nerve and take on a fusiform appearance without compromising the functional and morphologic integrity of the nerve, allowing them to be separated from the nerve during surgery. The distinction between neurofibromas and schwannomas can be made microscopically.[6]

MRI plays an important role in the diagnosis, as the tumor appears hyperintense on T2images and hypointense on T1 images. CT imaging can show the location of the tumor and its relationship to the carotid sheath, which can displace the common carotid artery. Angiography shows vascularity, which can be hypovascular or moderately hypervascular. FNAC biopsy has disadvantages in terms of accuracy and is not an effective means of preoperative diagnosis.[7]

Cervical schwannomas can be removed by gross total resection (GTR), which is associated with improved survival. For large tumors and tumors encircling the vertebral artery, subtotal resection is performed, which is associated with a high recurrence rate. However, the recurrence rate for residual cervical schwannomas is thought to be low and may take years to develop.[8]

Radiosurgery is an effective treatment alternative and is considered safe for patients in whom open surgery is not an option, such as those with recurrent lesions, multiple comorbidities, and advanced age.[9]

Conclusion and Recommendation

Cervical schwannomas are extremely rare tumors of the neck and are considered benign tumors. Physicians and surgeons evaluating cervical tumors need to be aware of the diagnostic approach, surgical management, and potential complications of this pathology.

FNAC is best avoided in cases of suspected cervical schwannoma, as the results are inconclusive and may lead to complications such as hematoma and nerve compression. Preoperative CT and MRI are essential for diagnosis; treatment is surgical to ensure a histologic diagnosis. The patient should be systematically informed of the risk of postoperative complication. Postoperative follow-up with an ENT specialist is mandatory.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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