CASE REPORT

MRI APPEARANCES OF CERVICAL ACCESSORY TRAGUS- A RARE ENTITY

Hafsa Zulfiqar, Ashok Kumar, Bhavesh Sagar, Kamran Hameed, Abdul Khalique

Department of Radiology, Ziauddin Hospital, Karachi, Pakistan.

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ABSTRACT

Congenital cartilaginous rests of the neck, also known as cervical chondro-cutaneous branchial remnants or cervical accessory tragi, are rare developmental anomalies derived from branchial arch remnants. They are evident from birth and with time shows progression in size. On clinical examination, the nodules are firm in consistency, nontender on palpation, and exhibited features suggestive of a benign nature. They are characteristically observed as small, dome-shaped, skin-covered nodules lying along the anterior margin of the sternocleidomastoid muscle. The accessory auricle also shows some associations with congenital syndromes. Surgical excision continues to be regarded as the definitive and most effective modality of treatment. Diagnostic imaging is although rarely done, but plays a crucial role in determining its morphology and extension into the deeper tissues. So, radiologists should be aware of this entity and its imaging features. We present a case of a small pedunculated lesion in a young patient, with MRI features suggestive of congenital cartilaginous rest of the neck.

Keywords: Branchial arch remnants, Cervical accessory tragus, Congenital Abnormalities, Embryonic Abnormalities.

Introduction

Cervical chondro-cutaneous branchial remnants are uncommon developmental anomalies occurring along the ventral margin of the muscle sternocleidomastoid. They are generally located at the preauricular region but may also evolve along the migratory pathway of the auricle as it ascends from the neck region, originating from the mandibular branchial arch. These lesions are most often identified at birth or during early childhood; however, delayed presentation in adolescence or adulthood has occasionally been reported. These lesions are mostly benign and rarely malignant, unilateral, rarely bilateral and could be multiple. Although these lesions are most often encountered as isolated findings, occasional associations with other congenital anomalies have been reported, underscoring their embryologic basis. Imaging evaluation, particularly with MRI, serves as an essential diagnostic tool, providing precise delineation of lesion extent and effectively excluding deep or contiguous extension.

Case Presentation

A young boy aged, 2 year and 5 months, presented with a finger like projection on neck just above the medial end of clavicle on the left side. The lesion was present since birth as a small papular projection that gradually increased in size over time, eventually developing into a pedunculated mass. A comprehensive review of the patient's prenatal, postnatal, and family histories revealed no significant medical or genetic abnormalities. The lesion was skin tagged, firm, nontender, confined to neck region with no evidence of retrosternal extension or movement on tongue protrusion. No cervical, axillary

Correspondence : Dr. Hafsa Zulfiqar
Department of Radiology,
Ziauddin Hospital,
Karachi, Pakistan.
Email: hafsazul30@gmail.com

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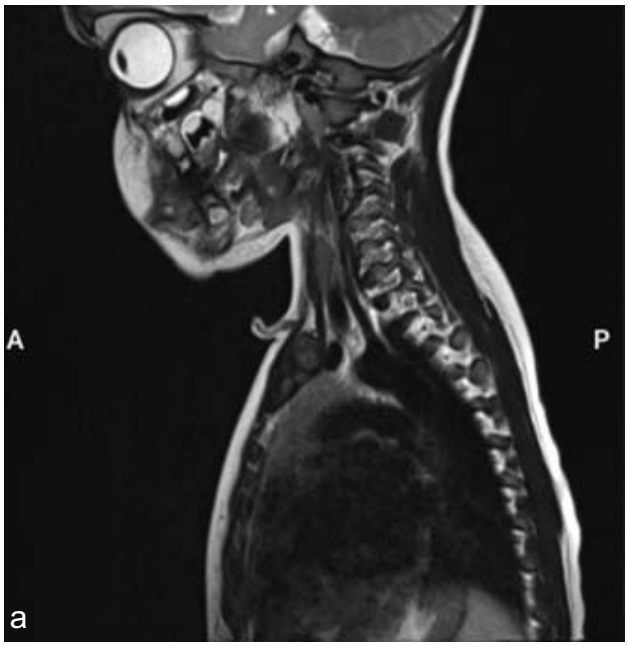
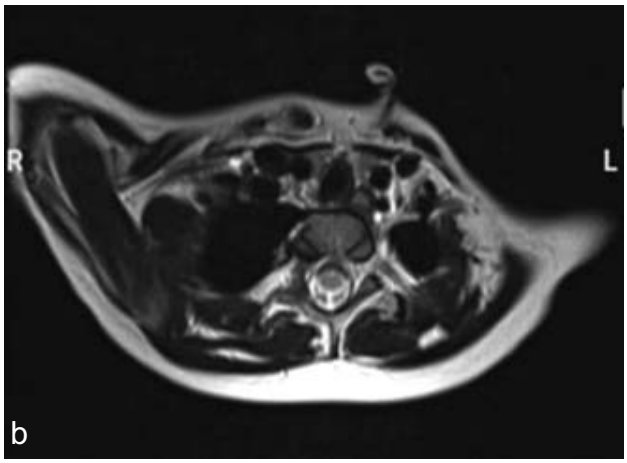
or any other lymphadenopathy identified while systemic examination also remained unremarkable. An x-ray neck was performed which showed a bony outgrowth of 1.5cm with overlying density of soft tissue. MRI neck was performed which showed an abnormal signal intensity structure within the subcutaneous tissues along antero-medial aspect of the sternal end of the left sternocleido-mastoid muscle with exophytic component projecting and protruding anteriorly with the intact overlying skin surface. The lesion appeared isointense to cartilage / muscles on both T1 and T2W images with no convincing post contrast enhancement. It measured approximately 2.1 x 0.5 x 0.5cm in APxTRxCC dimensions.

Figure 1: Finger-like firm projection just above medial end of left clavicle.





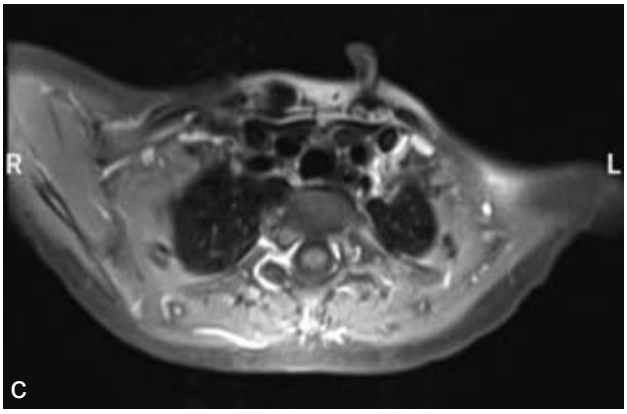


Figure 2: Lesion appears isointense on T1W and T2W images showing no postcontrast enhancement.

Discussion

The accessory tragus is formed as a consequence of developmental malformation in the process of embryonic development. It is believed that they can occur in 1 to 2 births per 1000.[1] Predicted prevalence for the cervical tragus seems to be around 1.7:1000 and for lesions occurring bilaterally prevalence is between 9:1,000 and 10:100,000. During early embryonic development around week 5 to 6, mesenchymal proliferation of ectoderm and mesoderm layers occur which form elevations on the embryo's surface called hillocks. They specifically originate from first arch i.e., mandibular and the second pharyngeal arch i.e., hyoid. These hillocks grow and later fuse to form three main parts of auricle (helix, antihelix and tragus). Any deviation in this developmental process may lead to the formation of an accessory tragus.[1,2,3,8] An accessory tragus typically arises near the tragus or along an assumed line connecting the

tragus and the mouth angle. However, it may also appear on lateral aspect of the neck at ventral margin of sternocleidomastoid.[1,2,3] Lesions located near the tragus are thought to originate from first branchial arch, whereas those found in cervical region arise from the second branchial arch. Its typical presenting feature is a small nodule covered with overlying intact skin. It may occur as discrete or numerous lesions, unilateral/bilateral, and can appear either pedunculated/sessile, with soft or firm consistency.[2,3] In our case, the accessory tragus was located in the cervical region, on the anterior surface of the lower portion of the sternocleidomastoid muscle, an uncommon variant named as CCRN and was unilateral. This accessory cartilaginous structure is usually an isolated malformation; however, it can also be related to other congenital disorders. Its major association is with Goldenhar syndrome and Treacher-Collins syndrome but can be linked to other syndromes like VACTERL, Townes-Brocks and Wolf-Hirschhorn syndrome.[4,5] Ultrasonography, computed tomography scans and magnetic resonance imaging of the neck maybe performed to determine any branchial abnormality, cyst, sinus, fistula or any other underlying extensions.[1,10] Branchial cleft cyst, thyroglossal cyst, acrochordon, lipoma, epidermoid cyst and appendageal tumors may mimic this condition. Therefore, histopathology remains the gold standard investigation for the definitive diagnosis of the lesion.[2,6,9] Its treatment approaches include the surgical excision of the lesion or removal via laser ablation, performed usually for cosmetic concerns or irritation, rarely resulting in complications.[5,6] A renal ultrasound is recommended for evaluation of associated syndromes, such as those affecting the kidneys, before any treatment.[7,10]

CONFLICT OF INTEREST: None.

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