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Cervical chondrocutaneous branchial remnant: A case report

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ABSTRACT

Cervical chondrocutaneous branchial remnants (CCBR) are rare benign masses of the neck that arise from anomalies in embryological branchial arch development. They present as a painless, flesh-toned exophytic nodule of the neck. They are most commonly seen on the lower third of the neck, anterior to the sternocleidomastoid muscle. CCBRs are harmless and asymptomatic, but the presence of these lesions in infants should prompt further evaluation for associated anomalies. Histopathologic examination of CCBRs show ectopic cartilaginous tissue with normal overlying epidermis. Treatment includes elective surgical excision. A case of an 18 year old male with a left-sided CCBR is reported.

Introduction

Cervical chondrocutaneous branchial remnants (CCBR) are rare benign masses of the neck that present as painless flesh-toned exophytic growths, similar in appearance to preauricular tags. The etiology of CCBRs are debated but they are thought to arise from anomalies in embryological branchial arch development, particularly the second branchial arch [1]. They may be located unilaterally or bilaterally and are most commonly seen on the lower third of the neck on the anterior aspect of the sternocleidomastoid muscle [1,2]. There have been less than 150 reported cases in the medical literature under different names (cervical tab, cervical wattle, congenital cartilaginous rest of the neck, cervical chondrocutaneous branchial remnant) [1–3]. In 1997, Atlan et al. proposed a widely accepted name for this anomaly to avoid diagnostic confusion: cervical chondrocutaneous branchial remnant (CCBR).

Histopathological examination of CCBRs show elastic or hyaline cartilage components with normal overlying keratinizing squamous epithelium [4]. Although the CCBRs are harmless, infants should undergo imaging to assess associated malformations [5]. Patients or caretakers may choose to undergo elective surgical excision for cosmetic satisfaction. Before removal, the provider should rule out other causes of neck masses with imaging and/or histopathologic examination.

Case report

An 18 year old Caucasian male presented for a left-sided neck lesion that had been present since birth. The mass became more apparent to the patient when he received a recent facial chemical peel for acne. The patient denied changes in size, bleeding, pain, or sign of infection of the mass. He denied dysphagia, dysphonia, dyspnea, and any other symptoms. The patient denied any other lesions or a history of skin cancer. He denied significant sun exposure and wears sunscreen on his face only. The patient denies any other medical problems, including family history of skin cancer. On physical examination, there was a 1.5cm subcutaneous mass on the left side of the neck. The mass was firm, mobile, painless, slightly raised, and flesh colored. There were no signs of ulceration, fistula, inflammation, or active infection. The trachea and thyroid were midline and symmetric. The remainder of the ENT examination was normal with no other masses. A CT scan of the neck with contrast was negative for masses or other cervical pathology (Fig. 1). Upon follow-up, the patient expressed desire to have the mass removed for cosmetic purposes. The patient underwent excision of the mass in the office under local anesthesia. The mass was covered by normal overlying skin. There were no signs of fistula or communication with other nearby structures. Histopathologic examination of the mass revealed suspected chondroid hamartoma, extraskeletal chondroma, or developmental cartilaginous rest, supporting the diagnosis of CCBR.

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Fig. 1. CT scan of the neck with contrast does not reveal any masses or other cervical pathology.

Discussion

Cervical chondrocutaneous branchial remnants (CCBR) are rare benign masses of the neck that are important to consider in the long differential of neck masses. A heightened suspicion for CCBRs should occur in males with a left-sided presentation [1]. They show very little or no growth and are painless with no erythema or discharge [6]. They consist of a central hyaline or elastic cartilage core and do not usually communicate with other neck structures (they may adhere to the sternocleidomastoid fascia [6]), in contrast to cysts and fistulas, respectively [2]. It is thought that first branchial arch derivatives consist of hyaline cartilage, while second or lower branchial arch derivatives consist of elastic cartilage [7]. They may be mistaken for other more common cervical congenital anomalies such as branchial or thyroglossal duct cysts. It is important to distinguish these lesions histopathologically from other common neck masses as one-third patients have associated anomalies [8]. Infants with CCBR have been found to have co-existing branchial-oto-renal syndrome, vesicoureteral reflux, and cardiac defects, so abdominal ultrasound and echocardiogram evaluation is recommended [1,2,5]. In asymptomatic older patients, such as our patient, clinical signs of associated anomalies may be absent and the patient is not screened. Diagnostic imaging with contrast CT or ultrasound is useful for delineating depth of the mass, invasion into nearby structures, cyst-like qualities, and fistula formation. Imaging is also used to evaluate for other branchial remnant anomalies. It is suggested to remove CCBRs in childhood to improve cosmetic and psychosocial outcomes and to obtain histopathologic confirmation [2]. Treatment is elective complete surgical excision, usually performed for cosmetic purposes, as in our case, or functional purposes (gets caught in objects, clothing). It is recommended that CCBRs are not shaved, but rather removed completely

[4]. There have been no reports of recurrence or malignant transformation of CCBRs.

Conclusion

It is important to consider CCBR in the differential diagnosis of congenital neck masses. It is a rare chondrocutaneous mass that is benign, painless, and non-life threatening. The clinical and histologic presentation are well-known. However, the etiology is debated. It is most commonly thought to be a first or second cutaneo-cartilaginous branchial arch remnant. Approximately one-third of CCBR cases have been associated with other co-existing genitourethral or cardiac abnormalities, warranting further evaluation by providers. The treatment of choice is surgical excision, usually to achieve satisfactory cosmetic results.

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Credit Author Statement

Samira Ibrahim BS: Conceptualization, Writing – original draft
Colin Byrd DO: Writing – review and editing, Supervision, Resources
Douglas Kubek DO: Supervision, Writing – review and editing

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