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Case Report

Radiologic confirmation of bilateral cervical ribs in an adolescent ☆

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ABSTRACT

A previously healthy 14-year-old girl presented to an unscheduled consultation with recent symptoms of myalgias, sore throat, and rhinorrhea. Her physical examination was unremarkable except for bilateral, firm supraclavicular masses. Concern for malignancy lead to investigation and the radiologic diagnosis of bilateral, asymptomatic cervical ribs was made.

Introduction

Cervical masses in the pediatric population are common and usually benign in nature [1]. On the other hand, supraclavicular masses are more likely malignant [1,2]. Other characteristics that point toward malignancy are a firm consistency, diameter greater than 2 cm, adhesion to deep neck tissues, and lack of inflammatory signs [1]. Nevertheless, cervical ribs in children can present as cervical masses, and is a benign condition, that more likely will not need any intervention [3]. Cervical ribs arise more frequently from the seventh cervical vertebrae and range from a rudimentary bone that extends only slightly from the transverse process of the vertebrae to a complete rib that articulates with the manubrium or sternum [4]. We describe a case of incidental finding of bilateral cervical ribs in an adolescent that presented to medical care for unrelated complaints.

Case report

A previously healthy 14-year-old girl presented to an unscheduled consultation with a 1-day history of mild myalgias, sore throat, and rhinorrhea. Her physical examination was unremarkable, except for bilateral supraclavicular firm masses, not adherent to the soft tissue of the skin but apparently adherent to the profound tissues. After this finding she was questioned regarding constitutional symptoms as intermittent fever, weight loss, fatigue, and night sweats, that were all denied. She admitted having noticed those masses

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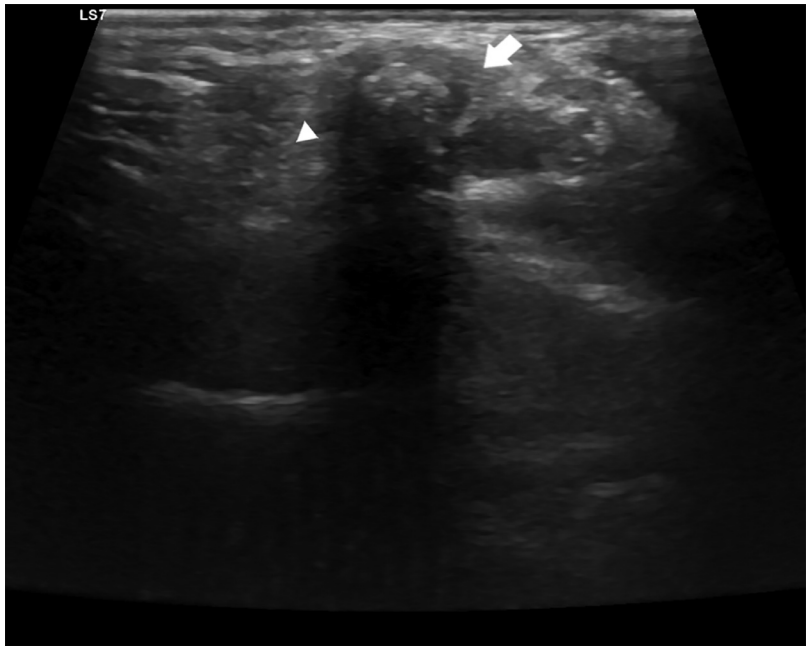

Fig. 1 – Sonogram performed on the supraclavicular region, showing a slightly hyperechogenic round formation with an hypoechogenic halo (white arrow) and its acoustic shadow (white arrowhead), suggestive of bone.

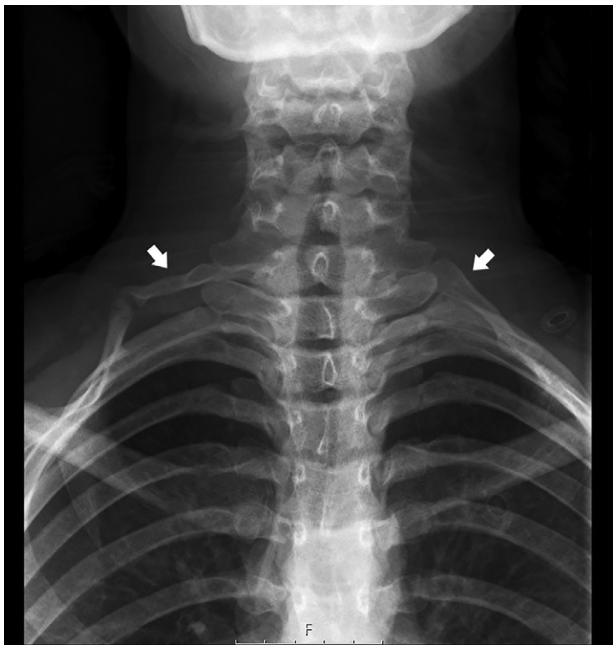

Fig. 2 – Neck x-ray showing bilateral cervical ribs, emerging from the C7 vertebra (white arrows).

less than a month before. Although her current symptoms were mild, this was a concerning finding and investigation was mandatory. A sonogram of the area was consistent with bone structures (Fig. 1), so a neck x-ray was performed. The neck x-ray revealed bilateral complete cervical ribs, emerging from C7 vertebra (Fig. 2). A diagnosis of common cold was made, along with the incidental finding of bilateral, complete cervical ribs, and no other investigation was needed.

Discussion

Depending upon the population studied, the prevalence of cervical ribs in healthy individuals varies from 0.58% to 6.2% [5]. The predominant gender, laterality or bilateral frequency are inconsistent, but a pediatric study by Chan et al. revealed a slight female predominance and 75.8% bilateral occurrence [3,5]. Cervical ribs are usually asymptomatic and discovered incidentally on an x-ray but sometimes they can lead to thoracic outlet syndrome, a complication that encompasses neurovascular symptoms due to compression of the structures crossing the interscalene triangle [4–6]. The pediatric population follows that same pattern, with 88.2% of cases discovered incidentally; regarding the symptomatic cases, cervical mass was the leading complaint, with a prevalence of 50%, followed closely by neck pain (41.7%) [3]. The cervical ribs extending beyond the transverse process of the vertebra and articulating with the first rib are more likely to produce vascular related symptoms, as change in color or temperature on the arm, due to compression of the subclavian artery or vein [5,7]. On the contrary, incomplete cervical ribs are prone to neurological symptoms due to compression of the inferior trunk of the brachial plexus, manifesting as numbness, tingling sensation, and muscle weakness [4,5]. Cervical ribs have no function. [4] If the patient develops symptoms, conservative treatment may be tried, such as analgesia and physical therapy, but if there are vascular or neurological compromise, surgical treatment is advised [4–7].

In this teenager, the cervical ribs were an incidental finding during physical examination, presenting as supraclavicular masses, so investigation was mandatory, as this is a worrisome finding, often linked to malignancy. [2] The bilateral symmetry of the masses was a feature against a pathological process but nevertheless it needed to be investigated. Sonography was already studied to diagnose cervical ribs, and, as it is the first-line diagnostic tool to evaluate neck masses in children, provided a valuable diagnostic clue in this case as well [1,8]. The definitive diagnosis was performed by x-ray, which is also consistent with the literature [5].

We could not find in literature an explanation for the recent finding of the masses by the adolescent; we can only speculate that they were probably always there, and she was not previously aware of them because they were never perceived as an odd finding.

This adolescent had no symptoms related to her bilateral cervical ribs, however she was advised to seek medical assistance if any of the abovementioned symptoms occurred. As some entities in the differential diagnosis of supraclavicular masses are worrisome, she and her family were also instructed to inform her future attending physicians of this characteristic, to avoid unnecessary complementary examinations.

Patient consent

Patient consent was obtained from her father.

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