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Case Report

Sternal Horns: A Thoracic Cage Variant

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Abstract

Abnormalities of the thoracic ribs are rare (thought to be less than 0.5% of the population). We present a case of a middle-aged man who, presenting with chest discomfort and mild shortness of breath was found to have an abnormal thoracic cage on imaging. His chest radiograph showed bony outgrowths from the manubrium sterni, giving the appearance of what we have termed 'sternal horns'. The abnormality was further evaluated with computed tomography 3-D volume rendered imaging.

Introduction

Thoracic rib abnormalities are rare with an estimated prevalence of less than 0.5% [1]. Rib abnormalities may be isolated but can also be associated with a number of other conditions, including bone dysplasias, cardiac disease, metabolic disease, trauma or neoplasm's [2]. Patients may present to medical services because of symptoms related to their underlying condition, symptoms as a direct result of the abnormality (such as neurological symptoms, vascular symptoms or respiratory insufficiency), or the deformity may be found incidentally.

Case

We present a case of a 42 year old man who was referred to the respiratory clinic with mild shortness of breath and chest discomfort following a shoulder hyperextension injury at work two months previously. A chest radiograph (Figure 1) performed as part of his initial investigations showed an unusual appearance of his sternum and upper thoracic cage (arrows A), hence further imaging by Computed Tomography (CT) was performed. CT 3-D volume rendered image (Figure 2) shows bilateral hypoplastic first ribs (arrows B) and the presence of symmetrical bony outgrowths from the upper lateral aspects of the manubrium sterni (arrows C). These bony outgrowths replace the first rib costal cartilages with absence of sterno-costal joints, giving the appearance, which we have named, "sternal horns". At subsequent review in the respiratory clinic the patient had made a complete recovery with a full range of pain free movement and absence of any respiratory symptoms or signs. Investigations for a potential underlying cardiac cause for his chest pain were negative.

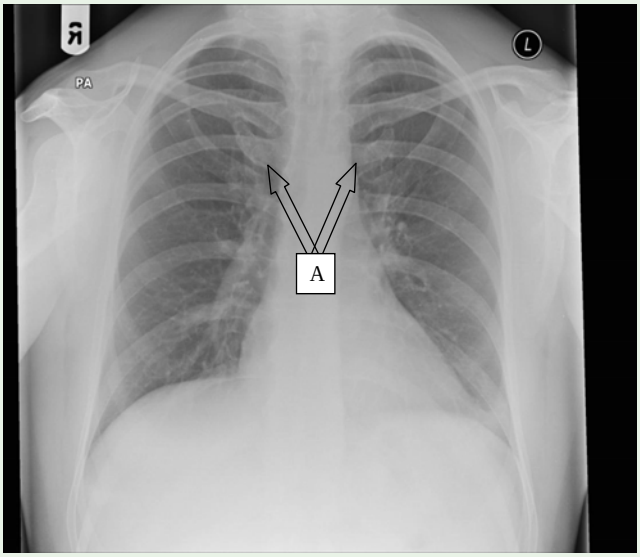

Figure 1: Chest radiograph showing bony outgrowths from the sternum giving the impression of 'sternal horns'.

Figure 2: CT 3-D volume rendered image showing hypoplastic first ribs (label B) and bony outgrowths of the manubrium sterni (label C) giving the impression of 'sternal horns'.

Discussion

Investigation for chest discomfort and mild shortness of breath yielded no respiratory or cardiac cause for this gentleman's symptoms. Given the resolution of symptoms and history of trauma we have attributed his symptoms to his shoulder hyperextension injury at work. We believe his thoracic cage abnormality to be an incidental finding.

Conclusion

In this report, we describe a rare thoracic cage abnormality giving the interesting appearance of 'sternal horns' on the chest radiograph.

References

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