

Anterior Jugular Phlebectasia: Diagnosis by Multislice CT

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Abstract: An extremely rare case of unilateral anterior jugular phlebectasia in a 12-year old male child, with a gradually increasing painless, soft, fluctuant, left cervical swelling, increasing in size on Valsalva manoeuvre is being presented. Although the most common cause of a neck swelling increasing in size during straining is a laryngocele, phlebectasia of anterior jugular vein should also be kept in the differential diagnosis.

INTRODUCTION

Phlebectasia of the jugular venous system, a congenital dilatation of the internal, external or anterior jugular vein and posterior facial vein is a rare benign condition. Internal jugular phlebectasia is often encountered in older children and young adults¹. No such age predilection has been reported for anterior jugular phlebectasia. There is no sex predilection. Internal jugular phlebectasia is the most common form, while external jugular, anterior jugular and posterior facial phlebectasia are rare. Only six cases of anterior jugular phlebectasia have been published in medical literature, in patients ranging in age from 4- to 82-years^{2,3}. Two patients were in pediatric age group. We report the third case of anterior jugular phlebectasia in a pediatric patient diagnosed using multislice spiral CT.

CASE REPORT

A twelve years old male presented with a gradually increasing painless, soft, fluctuant, cervical swelling of two month duration, increasing in size on Valsalva manoeuvre, with a clinical diagnosis of hemangioma. Plain x-ray soft tissue neck done without Valsalva manoeuvre was normal and that done with Valsalva manoeuvre showed the presence of a prelaryngeal soft tissue swelling.

Ultrasound showed the presence of a well-defined, anechoic lesion increasing in size on performing Valsalva manoeuvre, anterior to left carotid artery and internal jugular vein (fig.1). On ultrasonography the provisional diagnosis of a vascular lesion was kept, however exact origin of the swelling could not be ascertained.

Contrast enhanced biphasic helical CT study was performed using Somatom Plus 4 volume zoom (M/s Siemens Ltd.) multi slice CT scanner in caudocranial scanning direction, with collimation of 2mm reconstructed at 1mm intervals with a pitch of 1.5. Axial sections showed the saccular dilatation of the left anterior jugular with prominent left anterior jugular vein draining into left subclavian vein. Multiplanar reconstruction (MPR) using maximum intensity projection (MIP) clearly showed the prominent left anterior jugular vein with saccular dilatation draining into the left subclavian vein (fig.2).

DISCUSSION

Jugular phlebectasia usually presents as an asymptomatic unilateral soft, non-pulsatile, painless and compressible neck mass, most noticeable during any type of straining or Valsalva manoeuvre that disappears at rest¹.

Cervical swelling is a common diagnostic problem in pediatrics, with many etiologies, among which only four enlarge on Valsalva manoeuvre: (1.) Laryngocele; (2.) Venous aneurysm; (3.) Superior mediastinal tumors or cysts; (4.) Inflation of the cupola of the lung. Besides these four conditions, cavernous hemangioma, cystic hygroma, bronchogenic cyst and cervical adenitis should also be considered in the differential diagnosis⁴.

Because of its rarity the exact cause of jugular phlebectasis still remains unknown. Several predisposing factors have been postulated for internal



Fig-1: Gray scale ultrasound neck (transverse section) showing a well-defined, fusiform, anechoic lesion (A, black arrow) lying anterior to left common carotid artery (CCA) and left internal jugular vein (IJV). The lesion shows increase in size after performing the Valsalva manoeuvre (B, black arrow).

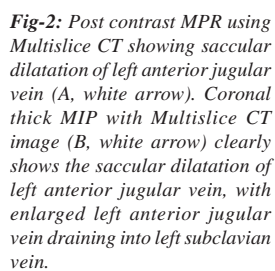


Fig-2: Post contrast MPR using Multislice CT showing saccular dilatation of left anterior jugular vein (A, white arrow). Coronal thick MIP with Multislice CT image (B, white arrow) clearly shows the saccular dilatation of left anterior jugular vein, with enlarged left anterior jugular vein draining into left subclavian vein.

jugular phlebectasia e.g. a congenital defect within the muscular layer of the venous wall, mechanical obstruction in the neck or mediastinum and increased scalenus muscle tone. It is doubtful whether these factors play a part in anterior jugular phlebectasia³.

Doppler ultrasound and computed tomography are the most useful methods for non-invasive diagnosis of phlebectasia. However ultrasound may fail to show the exact vessel of origin of the lesion in some cases. Multislice spiral CT allows multiplanar reconstruction in any desired plane having near isotropic resolution, with MIP images obtained after contrast administration exquisitely showing the vascular anatomy, thus confirming the diagnosis. No treatment is indicated for this benign self-limiting condition except for the few patients who are symptomatic due to pressure effects or for cosmetic reasons, or when the diagnosis is uncertain. Treatment is in the form of surgical excision⁵.

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