

Nadir Bir Olgu: Ektazik ve Yüksek Yerleşimli Brakiosefalik Arterin Neden Olduğu Sol Brakiosefalik Ven Kompresyonu ve Eşlik Eden Venöz Kollateraller

Unusual Case of Left Brachiocephalic Vein Compression by Ectatic and High Situated Brachiocephalic Artery with Venous Collaterals

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ÖZET

Sol brakiosefalik venin basılanması nadirdir. Olgumuzda izlenen yüksek yerleşimli ve ektazik brakiosefalik arterin neden olduğu sol brakiosefalik ven basılanması bu özelliklere sahip ender görülen bir vakadır. Bu olgu ile biz çok kesitli bilgisayarlı tomografide mediastinal kitlesi ve venöz kateterizasyon öyküsü olmayan hastada gelişen SBV basısının ve venöz kollaterallerin tanısını sunmayı amaçladık. Mediastende SBV ile inferior vena kava arasında çok sayıda venöz kollateral bulunmaktaydı. Ektazik ve yüksek yerleşimli brakiosefalik arterin neden olduğu SBV basısı ve venöz kollateraller yayınlanmamıştır.

Anahtar Kelimeler: Sol brakiosefalik ven, kompresyon, venöz kollateral, MDBT

ABSTRACT

Left brachiocephalic vein compression is unusual. This is a rare first case that left brachiocephalic vein compression due to ectatic and high situated brachiocephalic artery. Herein, we aimed to describe the case who had a compression of the LBV and systemic venous collaterals on MDCT without mediastinal mass, and history of venous catheterisation. There were numerous venous collaterals in the mediastinum which connecting LBV to inferior vena cava. LBV compression by ectatic and high situated brachiocephalic artery with venous collaterals has not been reported.

Keywords: Left brachiocephalic vein, compression, venous collateral, MDCT

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INTRODUCTION

LBV (innominate vein) is formed by the junction of the subclavian and jugular veins in the superior mediastinum. It drains head, neck, and upper extremities (1). LBV runs anterior to left carotid artery and brachiocephalic artery on mediastinum. Congenital anomalies such as retroaortic LBV and abnormally course between the brachiocephalic artery and left carotid artery were reported as a case in the literature (2). Different types of retroaortic LBV are described (3). Some of them were symptomatic and associated with other congenital malformations. Herein, we present an asymptomatic case who had a compression of the LBV and venous collaterals on MDCT without mediastinal mass, and history of venous catheterisation. Also, there were numerous venous collaterals in the mediastinum which connecting LBV to inferior vena cava (IVC). This collateral pathway was important to maintain venous drainage of upper extremity and thorax. LBV compression by ectatic and high situated brachiocephalic artery with venous collaterals has not been reported.

CASE

A 85-years-old female patient presented with dyspnea. Physical examination was unremarkable. To exclude pulmonary thromboembolism, pulmonary computed tomography (CT) angiography was performed by 64-detector row CT. There was a partial thrombus in the distal part of right pulmonary artery (Fig. 1).



Figure 1. Axial image of pulmonary CT scan shows an acute pulmonary embolus that affects the distal part of right pulmonary artery (thick arrow). Also, there are multiple venous collaterals on the mediastinum (thin arrow).

Also, numerous venous collaterals on the mediastinum which one of them connecting to the IVC. There was no mediastinal mass on CT which abutting to the LBV. Superior vena cava was patent. LBV was compressed by ectatic and high situated left brachiocephalic artery (Fig. 2, 3).

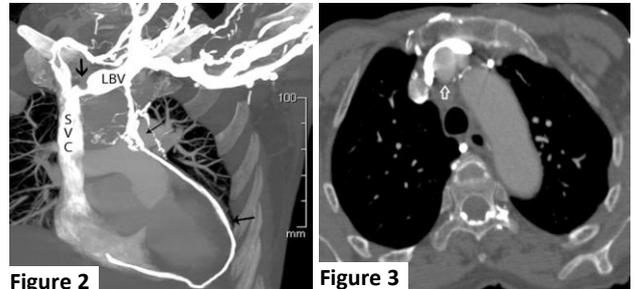


Figure 2. Coronal MIP (A) and Volume Rendering (B) images shows that superior vena cava (SVC) is patent. There are multiple venous collaterals (thin arrows) which one of them connecting to IVC (star). Note that left brachiocephalic vein (LBV) compression (thick arrow).

Figure 3. Axial image of pulmonary CT scan shows left brachiocephalic vein compression by left brachiocephalic artery (arrow).

We questioned the patient retrospectively, there was no history of venous catheterization, operation, trauma, coagulation disorders or hemodialysis. So, we concluded that the compression of the LBV was caused by an ectatic and high situated left brachiocephalic artery based on MDCT findings.

DISCUSSION

Transient LBV compression by aortic arch and branches in supine position on sonography has been described by authors (4). They concluded that physiological compression may simulate left internal jugular vein thrombosis. Also, various position like sitting or lateral decubitus position can resolve the compression.

LBV obstruction can be caused by mediastinal tumour invasion, extrinsic compression, or venous catheterization (1). Mediastinal tumour invasion of the LBV by lymphoma, thymoma, and seminoma or metastases from breast tumour can be clearly seen with MDCT. Percutaneous central venous catheterisation is commonly performed in a blinded manner for short-term dialysis, or parenteral nutrition. Repeated cannulation and long duration of catheter can induce thrombosis and stenosis. When chronic venous obstruction is present, the collateral pathways develop to maintain venous drainage (5). If collateral venous routes develop, unilateral venous distension is commonly seen.

Atherosclerosis and hypertension can also cause dilatation of aortic arch. LBV compression between aortic arch and sternum might be associated with LBV occlusion and stenosis (4). In the literature, few reports were presented about this situation in which reversed flow in left jugular vein and permanent dialysis access were present. In the case we describe, LBV compression and mediastinal unexpected venous pathways were detected. Also, the patient had no history of venous cannulation and hemodialysis. Physical examination showed no findings of venous stasis and edema in upper extremity or neck.

In conclusion, LBV compression by an ectatic and high situated brachiocephalic artery with mediastinal venous collaterals has not been reported in the literature. Several venous collaterals were unusual without mediastinal mass or previous venous cannulation. Also, no findings of venous stasis and edema in upper extremity on physical examination. All of them makes our case interesting. MDCT is useful tool to evaluate the etiology of LBV compression without known venous obstruction.

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