Azygos Continuation of the Inferior Vena Cava Without Any Congenital Anomaly Associated with Chronic Venous Insufficiency: Original Image

Kronik Venöz Yetmezlikli Herhangi Bir Konjenital Anomalisi Olmayan Hastada İnferior Vena Cava'nın Azigos Ven ile Devamı

Evren ÖZÇINAR,[a]
Fatih GÜMÜŞ,[a]
Mehmet ÇAKICI,[a]
Çağdaş BARAN,[a]
Sadık ERYILMAZ,[a]
Sadık BİLGİÇ[b]

Departments of
[a]Cardiovascular Surgery,
[b]Interventional Radiology,
Ankara University Faculty of Medicine,
Ankara

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Yazışma Adresi/*Correspondence:*
Fatih GÜMÜŞ
Ankara University Faculty of Medicine,
Department of Cardiovascular Surgery,
Ankara,
TURKEY/TÜRKİYE
fgumus1@gmail.com

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A 17-year old man admitted to our hospital for the complaints of itching and pain in his lower extremity. He had presented to another hospital with leg edema and restless before. Following the physical examination and doppler ultrasonography examination in the outpatient clinic, the physician adviced to ablate great saphenous vein as a primary intervention. The parents of the patient did not give approval to the suggested treatment, then they admitted to our hospital. Physical examination revealed the signs of venous insufficiency. Laboratory findings did not present any signs of thrombosis within normal levels of D-dimer (100 ng/L), activated partial thromboplastin time of 43 seconds (therapeutic activated partial thromboplastin time range, 45-75 seconds). Venous ultrasonogram presented as venous insufficiency at the level of great saphenous vein with a reflux flow greater than 0.5 m/sec. Popliteal, femoral, and iliac venous segments were dilated and no signs of thrombosis. The venous continuity of the iliac vein segment could not screened adequately. Vena cava and the lower extremity venous system venography was scheduled for the underlying cause of the symptoms. Venogram presented dilated great saphena magna with normal patency and lumen diameter of popliteal, femoral and external iliac veins. Inferior vena cava (IVC) and bilateral common iliac veins were occluded from the origins (Figure 1). Opacity of the azygos vein was clearly seen, and lower part of the body drained into the superior vena cava (SVC) via the dilated azygos vein continuation. Well developed paravertebral veins assist the drainage of the azygoz vein.

Azygos continuation of the VCI frequently has been associated with situs anomalies and congenital cardiac diseases, transthoracic echocardiography scheduled. Patent foramen ovale was detected without any sign of the other possible congenital anomalies. The hepatic vein directly drained into the right atrium and no trace of VCI. Computed tomography (CT) of the abdominopelvic region showed the hepatic and renal veins (Figure 2). No thrombosis was screened in any of the venous system.

FIGURE 1: Left femoral venogram revealed infrarenal IVC continues as the azygos vein **(A)**. The inferior vena cava is absent, via enlarged paravertebral veins draining into the azygos vein. The renal segment of the IVC receives venous return from both kidneys and passes posterior to the diap hragmatic crura to enter the thorax as the azygos vein **(B)**. The azygos vein joins the SVC in the normal location within the right paratracheal space **(C,D)**.
IVC: Inferior vena cava; SVC: Superior vena cava.

The major complaint of the patient result from the chronic venous insufficiency. The level of retrograde venous flow in the saphenous junction was moderate and the clinical, etiologic, anatomic and pathophysiologic (CEAP) classification at the lower venous system was CEAP 3. We planned to follow-up the patient at 3 month. Stockings with 30 mm Hg pressure and a venotropic drug were suggested. The follow-up period was uneventful.

Azygos continuation of the IVC as a variant of congenital anomaly of IVC occurs in up to 0.6% of the population.[1] Blood is shunted from the supracardinal vein anastomosis through the retrocrural azygos vein, which is partially derived from the right supracardinal vein. The infrarenal IVC continues as the azygos vein. The hepatic segment is not truly absent and generally drains directly into the right atrium.

Although azygos continuation of the IVC has been associated with situs anomalies and other congenital anomalies, the boy presented with the IVC anomaly and recognized in the absent of these conditions since the advent of CT.

When we face up with chronic venous insufficiency and familiar cases, ESVS guideline for vascular surgery advise for more detailed examination and consider congenital vascular diseases as well. International Society for the study of vascular anomalies classification also point out that many other diseases such as haemangiomatas, tufted an-

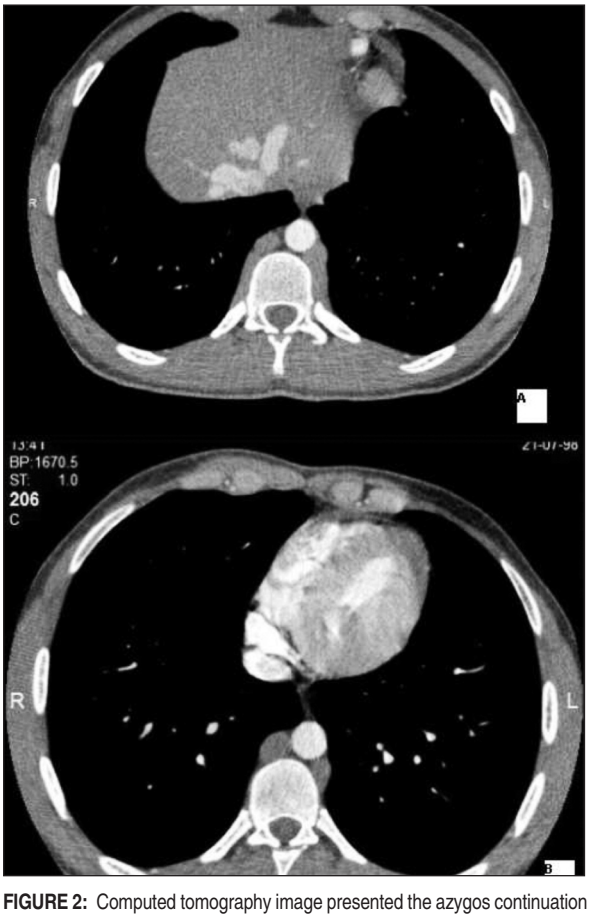

FIGURE 2: Computed tomography image presented the azygos continuation of inferior vena cava. The enlarged azygos vein passes posterior to the diaphragm and enters the thorax **(A)**. It drains into the superior vena cava at the normal location in the right paratracheal space **(B)**.

gioma, kaposi sarcoma, arterio-venous fistül, Klippel- Trenaunay Syndrome might come with similar symptoms to chronic venous insufficiency. Thus, ablating of safenous vein in these cases could lead the patients to the more complicated situations such as deep venous thrombosis, swelling of legs and pulmonary emboli.

In conclusion, most of the cases of chronic venous insufficiency in a younger age, underlying causes of the disease were generally ignored by the physicians. However, surgical approach has to be carefully planned in the younger population and the treatment option has to be selected in case oriented manner.

REFERENCE

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