

Central Venous Stenosis Caused by Traction of the Innominate Vein due to a Tuberculosis-Destroyed Lung

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We report a case of central venous stenosis due to a structural deformity caused by a tuberculosis-destroyed lung in a 65-year-old woman. The patient presented with left facial edema. She had a history of pulmonary tuberculosis, and the chest X-ray revealed a collapsed left lung. Angiography showed leftward deviation of the innominate vein leading to kinking and stenosis of the internal jugular vein. Stent insertion improved her facial edema.

Keywords: Venous insufficiency; Tuberculosis, pulmonary; Lung injury

INTRODUCTION

Internal jugular vein stenosis is a rare condition that can manifest with facial edema. Most cases are related to the previous placement of catheters accompanied by thrombosis.

Pulmonary tuberculosis is very common in Korea. Despite treatment, chronic inflammation can continue, resulting in varying degrees of cicatrization and bronchovascular distortion. Up to 40% of patients with post-pulmonary tuberculosis have a marked fibrotic response [1]. Although several cases of mediastinal tuberculosis presenting as superior vena cava syndrome have been reported [2-4], we describe jugular vein stenosis due to fibrotic traction in a tuberculosis-destroyed lung for the first time.

CASE REPORT

A 65-year-old woman presented with a 1-week history of left facial edema. She had a history of pulmonary tuberculosis 30 years earlier and bacterial pneumonia 1 year earlier. She was taking medication for hypertension, and had never smoked. The physical examination revealed left facial edema. The left arm was not edematous. Her blood pressure was measured at 130/70 mmHg. Routine laboratory tests revealed only mild leukocytosis (white blood cell count 10,570/mm³), with normal liver function, normal renal function, and normal coagulation tests. The chest X-ray revealed complete collapse of the left lung resulting in left-deviation of the mediastinal structures (Fig. 1). There was no active infiltration or lymph node enlargement. Computed tomographic venography showed delayed enhancement of the left internal jugular vein (Fig. 2). The right common femoral vein was punctured for venography. The collapsed left lung resulted in the innominate vein's being pulled leftward, leading to severe kinking and

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stenosis of the internal jugular vein at the level of insertion of the innominate vein (Fig. 3). Percutaneous transluminal angioplasty was performed. Even after serial balloon dilatation, a stenotic lesion was still observed and the pressure

gradient was 9 mmHg; thus, stent insertion was indicated. The inserted stent was expanded fully, which decreased the pressure gradient to 3 mmHg and improved the facial edema.



Figure 1. Chest radiography shows collapse of left lung with ipsilateral traction of mediastinal structures. Focal fibrotic change and mild bronchiectasis was seen in right upper lung.

DISCUSSION

Internal jugular vein stenosis can develop with various mechanical injuries. The most common cause is the previous placement of central venous catheters. Glisson traction [5], carotid endarterectomy [6], and shiatsu massage [7] can also result in internal jugular vein thrombosis. The presenting symptom is usually edema distal to the stenosis, which is dependent upon the site and chronicity of the lesion and the collateral system. Venography is mandatory for diagnosis and intervention. As restenosis after transluminal angioplasty of a central vein can reach 75% [8], stent placement is usually indicated. When endovascular treatment fails, surgical repair can be performed.

In this case, complete destruction of an entire lung caused a marked shift of the innominate vein to the left, resulting in stenosis of the internal jugular vein. Stent insertion after angioplasty successfully improved the edema.

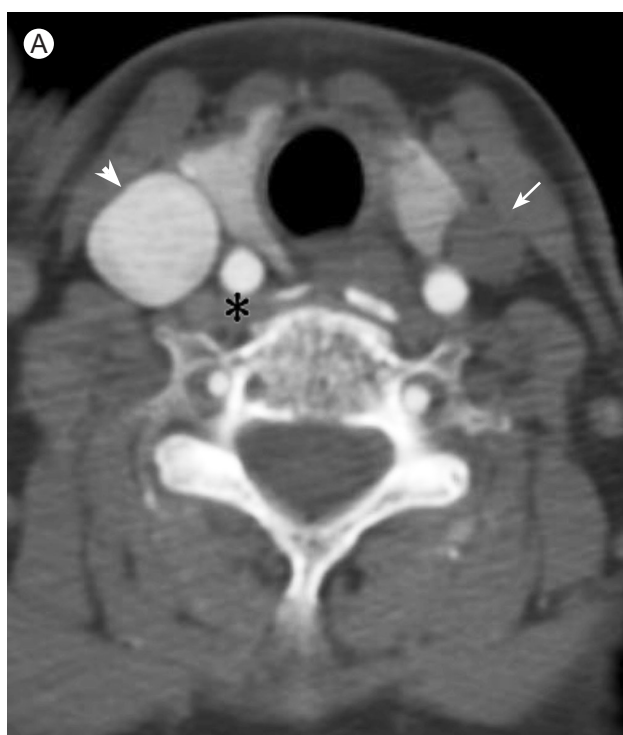


Figure 2. Computed tomographic angiography. The left internal jugular vein (arrow) was not enhanced during arterial phase, compared to enhanced right internal jugular vein (arrowhead) (A). The delayed left internal jugular vein (arrow) was observed during late venous phase (B) (* carotid artery).



Figure 3. The venography shows retraction of left innominate vein to left side, leading to severe kinking and stenosis of internal jugular vein at the level of insertion to innominate vein (A). Among the multiple collateral veins from left internal jugular vein, anterior jugular vein (arrow, B) is most prominent, connected to contralateral jugular vein.

Conflict of interest

No potential conflict of interest relevant to this article was reported.

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