Unexpected Venous Thrombosis in the Superior Vena Cava

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PRESENTATION
A 77-year-old woman with chronic heart failure, Horton disease, and dementia was referred to our hospital for acute abdominal pain. Rectal squamous cell carcinoma stage T4N3M0 treated by palliative radiotherapy alone had been diagnosed 6 months earlier. The patient’s World Health Organization performance status was grade 4, and physical examination revealed abdominal distension without bowel sounds. No sign consistent with superior vena cava syndrome was found.

ASSESSMENT
Because abdominal pain was concomitant with a clinical occlusive syndrome, a thoraco-abdominal contrast-enhanced computed tomography scan was performed. The abdominal symptomatology was explained by 2 findings. First, right hydronephrosis secondary to neoplastic infiltration of the pelvic ureteral duct was identified. Moreover, there was a malignant bowel occlusion due to the rectal cancer. Also, a recto-vaginal fistula was diagnosed.

Incidentally, a filling defect consistent with venous thrombosis extending from the superior vena cava to the right atrium was noted (Figures 1-3). No other thrombus was seen on computed tomography scan.

DIAGNOSIS
Upper-extremity deep vein and superior vena cava thrombosis are uncommon. When the superior vena cava is obstructed, blood flows through a collateral vascular network. The severity of the symptoms depends on the degree and the onset rapidity of narrowing superior vena cava. Generally, signs and symptoms related to obstruction of the superior vena cava are progressive over several weeks. Isolated intravascular thrombosis is rare. Malignant conditions accounted for two-thirds of cases. Obstruction caused by thrombosis accounts for one-third of cases, reflecting the increased use of intravascular devices, such as central venous catheters, port systems, pacemakers, or defibrillator leads. Multiple pathophysiologic mechanisms contribute to the hypercoagulability associated with cancer. The association between cancer and excessive blood coagulation is well recognized. Locoregional invasion or extrinsic compression by adjacent pathologic processes involving the thorax also can explain symptoms. The most common malignant causes are lung cancer and lymphoma. Finally, a history of thoracic radiotherapy can cause superior vena cava obstruction.

Figure 1 Contrast-enhanced computed tomography of the chest in axial view, showing a filling defect consistent with thrombosis in the right atrium (arrow).
Many treatments have been proposed in case of superior vena cava thrombosis and aim to prevent progression of thrombosis and reduce the risk of pulmonary embolism and recurrence. The severity of symptoms is important in determining the urgency of intervention. Recommendations are derived from data of patients with lower-extremity thrombosis.1

In case of an intravascular device inserted by the superior vena cava, it should be removed if possible.3 Percutaneous placement of an intravascular stent is a possible intervention that does not require a tissue diagnosis, and it is a useful procedure in case of severe symptoms that require prompt treatment, such as intracranial hypertension or respiratory failure. Generally, angioplasty is performed in preparation for stent placement. When extensive thrombosis is present, catheter-directed thrombolysis should be performed.1,2,6

Surgical bypass grafting is used infrequently to treat the superior vena cava syndrome because of its morbidity.2

The mainstay of treatment of acute thrombosis is anticoagulation. In case of neoplasia, anticoagulation therapy should be continued as long as the cancer remains active if the thrombotic event was not related to a central venous catheter.2

In patients with chemosensitive tumor such as lymphoma and small-cell lung cancer, the clinical response to chemotherapy is rapid.

**MANAGEMENT**

The decision-making process was difficult because of the advanced phase of the cancer.

Usual treatments for malignant bowel obstructions depend on the level of obstruction, the presence of single or multiple occlusive levels, the extent of the cancer, associated comorbidities, and the performance status of patients.7 At this time palliative medical treatment was preferred and aimed at reducing symptoms, and providing the highest level of comfort possible became the priority of care.

In this patient no history of thoracic radiotherapy was related, and clinical examination ruled out superior vena cava syndrome. Moreover, there was no intravascular device inserted. The thrombosis did not induce complete occlusion of the superior vena cava, and this explains why the patient was essentially asymptomatic.

We could not perform an invasive procedure owing to the patient’s condition, asymptomatic presentation, and poor prognosis.1 Twice-daily subcutaneous enoxaparin was started, associated with palliative care to prevent superior vena cava syndrome.

**References**