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Case Report

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Thrombosis of the internal jugular vein, a rare entity: A case report and brief review of the literature

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ABSTRACT

Rationale: Thrombosis of the internal jugular vein is an infrequent and underdiagnosed pathology due to the absence of symptoms. If present, the symptoms are frequently manifested as a sensation of pain and cervical tension. Its etiology is variable, including trauma, central catheterization, and hypercoagulable states, among others.

Patient's Concern: A 41-year-old female, previously healthy, was admitted to the emergency room for worsening pain in the left cervical area of 5 d. Previously, she was treated for suspected acute pharyngotonsillitis yet without improvement.

Diagnosis: Physical examination revealed a 2 cm in length cervical mass of hard consistency that was painful on palpation and non-fluctuating. Ultrasound study showed thrombosis of the left internal jugular vein. A computed tomography scan revealed that the thrombosis occurred at the cervical portion of the left internal jugular vein as well as the left transverse sinus.

Interventions: Hospital admission and treatment with low molecular weight heparin at a dose of 1.5 mg/kg every 24 h.

Outcomes: The patient was discharged after 3 d of treatment with vitamin K antagonists.

Lessons: Venous thrombosis at the level of the internal jugular vein is an infrequent entity. Clinical suspicion is necessary for the diagnosis given the possibility of absence of symptoms.

KEYWORDS: Internal jugular vein; Thrombosis; Cervical thrombosis; Case report

1. Introduction

Thrombosis of the internal jugular vein (IJV) is a rare entity with significant relevance given the risk of pulmonary thromboembolism. Due to its location, its diagnosis is complicated, since the presentation may be asymptomatic or a slight feeling of tension in the cervical area[1]. In its etiology, several causes have been described, including cancer, central venous catheterizations, trauma, hypercoagulable states, and infections[1,2].

To raise clinicians' attention to this disease, especially in the emergency room due to the difficulty of the diagnosis in this clinical setting, we present a clinical case of a 41-year-old female with left IJV thrombosis and left transverse sinus thrombosis treated in the emergency department of our hospital.

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2. Case report

The patient provided informed consent for the publication of this case report.

A 41-year-old female with no relevant medical history was admitted to the emergency room for worsening pain in the left cervical area of 5 d. Previously, she was treated with analgesia (acetaminophen) and antibiotic therapy (amoxicillin-clavulanate) for the suspicion of acute pharyngotonsillitis given the location of the pain, yet without improvement. She did not have a fever during this period. The patient was taking hormonal contraceptives with estrogens and progestogens regularly.

On physical examination, a cervical mass of hard consistency was found in her left latercervical area, painful on palpation and non-fluctuating, and 2 cm in length. She did not present alterations in the oropharynx or the external auditory canal. At the cardiac and pulmonary levels, no pathological findings were observed.

For a better definition of the mass, an analytical study was carried out which highlighted a mild leukocytosis (12.4×1 000/μL, normal: 4×10^3-11×10^3/μL) without changes in the leukocyte formula, as well as a slight elevation of C-reactive protein (33.0 mg/L, normal: 0.0-10.0 mg/L). Coagulation study did not reveal any relevant results. Likewise, an ultrasound study was carried out showing the thrombosis of the left IJV with thickening of its wall and regional lymphadenopathy. Given these findings, a cranial and cervical computed tomography scan with intravenous contrast was performed to confirm thrombosis. This test showed thrombosis at the cervical portion of the left IJV as well as in the left transverse sinus. No other alterations were observed at the cranial, cervical, or pulmonary level (Figure 1).

Given the findings, treatment with low molecular weight heparin at a dose of 1.5 mg/kg every 24 h was started and admission to the vascular surgery department was decided. During admission, a study of possible associated thrombophilias was started, and a heterozygous mutation of Factor V Leiden was found. After 3 d of admission, no complications were observed, and the patient was discharged from the hospital maintaining the dose of low molecular weight heparin with subsequent initiation of vitamin K antagonists (acenocoumarol).

3. Discussion

IJV thrombosis is a rare entity, which accounts for less than 5% of all deep vein thromboses, thus its diagnosis is frequently incidental[3]. However, given medical advances such as hemodialysis, pacemaker implantation, and central catheter implantation, the risk of trauma to the IJV, subclavian vein, or brachiocephalic vein has increased, and so does the likelihood of inducing thrombosis[4]. Other related entities include neoplasms, intravenous drug abuse, trauma, hypercoagulable states, infections, and the use of hormonal contraceptives[1,2,5]. Regarding gender, the incidence of IJV thrombosis is higher in middle-aged women[1,2].

In a retrospective study of deep vein thrombosis that included 1 948 patients, only 1.5% had venous thrombosis at the level of the IJV. Furthermore, it should be noted that 72% of the cases were related to thrombosis at the level of the upper limb, which is different from the finding of our case[1]. Similar results were observed in another series of cases (n=210), with the occurrence of IJV thrombosis in isolation also rare[2].

Given the low prevalence of this disease, diagnostic suspicion is crucial, especially in the emergency room due to the difficulty of the diagnosis in this clinical setting, as in our case report. The clinical manifestations are highly variable, and IJV thrombosis is commonly presented as asymptomatic or as a sensation of pain and tension in the cervical area (50%)[6]. Secondary pulmonary embolism cases are described in the literature. However, no cases of associated neurological complications have been reported[5]. Based on the complementary tests, D-dimer could help to exclude patients with low risk of jugular vein thrombosis (sensitivity 96%,

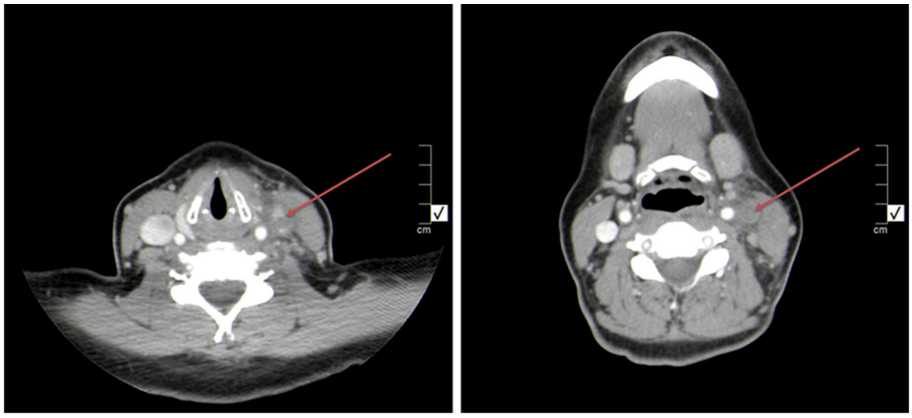

Figure 1. The cervical computed tomography scan with intravenous contrast of a 41-year-old female patient showing thrombosis (arrows) at the cervical portion of the left internal jugular vein.

specificity 61%). In our case, it was not performed due to the initial non-suspicious of the physician. Doppler ultrasound is an effective diagnostic approach (sensitivity 87%, specificity 94%), although the technique of choice is computed tomography (sensitivity 97%, specificity 94%), which favors the possible diagnosis of secondary neoplasia. Screening for tumor or coagulopathy is recommended since they are the causes more frequently related to venous thrombosis at the level of the upper limb and cervical than at the level of the lower limbs[5]. Our case presented the heterozygous mutation of Factor V Leiden, which is the most prevalent in Caucasians (3%-7% of the population)[5]. In these subjects, the annual incidence of venous thrombosis is 0.45%[7].

The treatment of choice is low molecular weight heparin or unfractionated heparin followed by oral anticoagulation based on vitamin K antagonists, as in our case. The presence of thrombophilia does not increase the risk of recurrence, although long-term anticoagulant therapy is recommended in these cases, requiring at least 3 months of treatment[8]. It should be noted that there are no clinical practice guidelines for venous thrombosis at the level of the IJV, being the management adapted from the guidelines for venous thrombosis at the level of the upper extremities[9].

In conclusion, since venous thrombosis at the level of the IJV is an infrequent entity, clinicians should be alert to the possibility of the occurrence of this condition in the absence of anysymptom. Its complications are variable, including some potentially serious ones such as pulmonary embolism. For this reason, clinicians must always assess this possible differential diagnosis, especially in those with risk factors, such as cervical trauma or neoplasms.

Conflict of interest statement

The authors report no conflict of interest.

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Authors' contributions

EEZ, MAAJ, and CALG developed the concept and design of this study. EEZ, MAAJ, and AMM defined intellectual content, conducted the study, acquired data, performed statistical analysis, and prepared and edited the manuscript. CGM, CALG, AMM, and MAAJ analyzed the data. All authors performed literature search and reviewed the manuscript.

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