Case Report

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Left Upper Limb Deep Venous Thrombosis: A Rare Condition Becoming Common Nowadays

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Abstract

Deep venous thrombosis of the upper limb is a less common phenomenon than lower limb deep vein thrombosis. The commonest reasons are trauma secondary to sport or job related arm movements and arm positions, predisposing for upper limb deep venous thrombosis. In this case report, we will discuss the diagnosis and management of upper limbs deep vein thrombosis, along with review of literature.

Keywords: Deep vein thrombosis; Thoracic outlet syndrome; Upper extremity; Subclavian vein; Thrombectomy; Anticoagulation.

INTRODUCTION

Upper limb thrombosis generally involves the axillary or subclavian vein. It is a less common phenomenon when compared to lower limb phenomenon.[1] The risk factors for deep venous thrombosis (upper limb and lower limb) arise from the underlying components of "Virchow's triad": venous stasis, hypercoagulability, and injury to the venous intima. Other risk factors for upper limb venous thrombosis are: exogenous causes (like external compression of the vein by a solid tumor or the cervical rib or) and endogenous causes (like thrombophilia and pregnancy)[2], although these may occur spontaneously. In this case report, we will discuss a young female diagnosed with upper arm deep venous thrombosis and the successful management of upper limb deep venous thrombosis.

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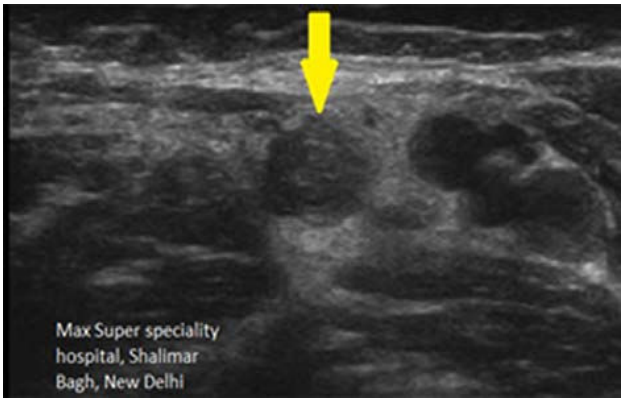
CASE

A 33 year old woman came to the emergency department of our hospital with complaints of left arm heaviness from the last 10 - 15 weeks. At the beginning, she ignored it thinking it might be due to long work duration in sitting posture (desk job) at her IT office. She took "over the counter" pain medications from a local pharmacy but it was not

relieved. She describes the pain originating over the left side of her neck and extending through out the left upper limb, restricting the daily activities. She is also finding it difficult to lift heavy weights. This pain has restricted her from attending her zumba classes which she used to attend on a regular basis. Her vitals were stable. An electrocardiography study was one which came out to be normal. On



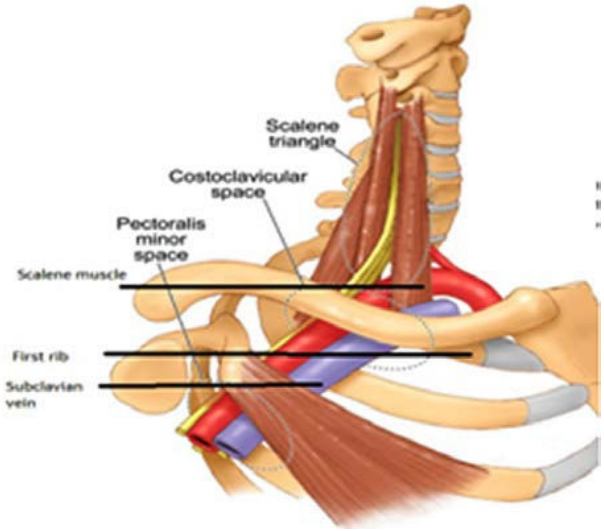
examination, the patient was found to have a swollen left arm when compared to the right arm, which was warm to touch. Duplex ultrasound was done which revealed an occlusive thrombus in the axillary vein, extending into the subclavian vein. In addition, there was a complete cessation of venous flow in arm abduction. The patient was then sent for computed tomography angiography with 3D reconstruction. Based on the patient's history, patient age, physical examination finding and supporting imaging study, the patient was diagnosed with "venous thoracic outlet syndrome".

The patient under went an attempt for thrombolysis, but the thrombus was too occlusive to traverse. The patient was taken up for left first rib resection and scalenectomy. The patient was discharged on anticoagulation therapy following surgery. Repeat venogram 10 days post decompression, showed a patent subclavian vein with tight stenosis. Patient was taken for endovascular venoplasty with a noncompliant

balloon. Angiogram after the ballooning demonstrated a patent subclavian vein. For the further follow up's, venous duplex demonstrated a widely patent subclavian vein. The patient recovered well with no signs of deep venous thrombosis.

DISCUSSION

The patient was diagnosed with upper extremity deep venous thrombosis (UEDVT). There are various differentials like acute coronary syndrome, cervical spondylosis along with UEDVT. UEDVT accounts for approximately 1 - 4% of all deep vein thrombosis. With an increase in use of peripherally inserted central catheter lines, central venous catheters, the incidence of UEDVT has been increasing. In young, healthy patients who report UEDVT, the most common primary cause is venous thoracic outlet syndrome (VTOS). In



VTOS, the subclavian vein is compressed within the costoclavicular space, which is bounded within the clavicle, first rib and the costoclavicular ligament.[3] This causes formation of scar tissue inside of the vein, leading to decrease in blood flow through the vein. This leads to the formation of blood clots, causing symptoms to the patient.[4] The classical symptom of presentation is edema with dilated subcutaneous collateral veins over the arm, shoulder, and chest, cyanosis of the extremity, aching pain while exercising. The right upper extremity is commonly affected, due to the reason that the majority of patients are right handed, many patients have a history of vigorous exercise or heavy activity involving the upper extremities.[5]

Imaging must be done to confirm the diagnosis of UEDVT. The initial test for diagnosis is duplex ultrasound, majorly because of its high sensitivity and specificity. Contrast venography is indicated in patients who demonstrate the pathology on duplex ultrasound and for patients for whom endovascular intervention is planned.[6]

The treatment of UEDVT is controversial mostly because of lack of literature evidence and overall,

due to the rarity of the disease. The treatment for VTOS is mostly anticoagulation and symptomatic treatment. However, these therapies can lead to significant disability, recurrent thrombosis, and persistent symptoms.[7] Many authors support catheter directed thrombolysis followed by a 6 month course with anticoagulation.[8] These therapies have short term benefits, but unfortunately, not the definitive treatment in such patients. Many authors also support early surgical intervention for removal of the first rib.[9] However, early surgical intervention is still controversial.

As evidenced in this case report, surgical intervention with anticoagulation therapy can be helpful in relieving the symptoms and improvement of life.

CONCLUSION

Upper extremity deep vein thrombosis is becoming more common nowadays due to lifestyle changes, especially in computer and desk jobs personnels (for a long time). Early diagnosis can prevent mortality and morbidity. Anticoagulation therapy remains a mainstay. Surgical intervention is necessary in patients not responding to medical treatment or in patients with progressed disease.

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