SAS Journal of Surgery ISSN 2454-5104
SAS J. Surg., Volume-2; Issue-4 (Jul-Aug, 2016); p-167-169
Available online at http://sassociety.com/sasjs/

Original Research Article

Internal Jugular Vein Thrombosis: A rare sequel of upper limb cellulitis

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Abstract: Upper extremity deep vein thrombosis (UEDVT) is very less common studied clinical entity. In comparison to lower extremity DVT, incidence of UEDVT is much less. Clinical importance of this entity is increased because of its fatal complication like pulmonary embolism. USG is the first investigation to be done because it is cheap and non-invasive. In this article we present a case of internaljugular vein thrombosis, which came to us with upper limb and neck cellulitis. USG neck revealed thrombus in left IJV extending to subclavian and axillary vein. Patient was managed conservatively with anti-platelets agent. DVT of upper limb due to IJV thrombosis is scarcely reported.
Keywords: UEDVT- Upper extremity deep vein thrombosis, DVT- Deep vein thrombosis, IJV- Internal jugular vein

INTRODUCTION

UEDVT is a clinical entity with increasing incidence and has potential for considerable morbidity and mortality. Now a days incidence of UEDVT has increased because of various invasive process of upper torso vein such as central venous cannulation for dialysis, for TPN etc; other causes include iv drugs abuse, infection, trauma and occult malignancy. UEDVT consists of only 10% from all cases of DVT[1].

Low hydrostatic pressure, smaller veins, less mobility restriction, more fibrinolytic activity and less in number; these are properties of upper limb vessel which make them less prone for deep vein thrombosis[2]. Subclavian vein is the most common site followed by axillary, brachial and rarely IJV. UEDVT also leads to life threatening complication like pulmonary embolism, airway edema etc. Very high clinical suspicion is required for diagnosis of it.

UEDVT consists of two types primary and secondary. Primary UEDVT is a rare, benign, idiopathic and sometimes associated with occult malignancy or anatomical variation. Secondary UEDVT is having a known cause, causes more complications and is difficult to manage in comparison to primary.

CASE REPORT

A 35 previously healthy male was admitted in our department with complains of neck and upper limb swelling for 15 days, fever and shortness of breath for 10 days. Patient also complained for onset of heaviness, pain and functional impairment of his left arm. Left upper arm was massively swollen. No h/o trauma, no h/o iv drug abuse was there. Patient was alcoholic and smoker for last 20 years.

On General examination; low grade fever (99.2 F) was there, pulse was 102 and bp was 102/68. Respiratory rate was 26/min with use of accessory muscle of respiration. No pallor, clubbing, cyanosis, Icterus or lymphadenopathy was there. On examination of left side of Neck showed swelling along anterior border of sternocleidomastoid muscle. On oral cavity examination, no abnormality was detected. On otoscopic and laryngoscopic examination, there was no abnormality.

In respiratory system examination; on inspection, decrease left side chest wall movement, trachea and apex were on their normal position.

On palpation chest expantion and vocal fremitus were slightly decrease on left side. Breath sound was also decrease on left side. On CVS, CNS and GIT system examination, no significant abnormality was there.

CBC showed HB- 13.8gm/dl; TLC-8410/mm3; Platelet-4.53lakh/mm3; ESR-85/hr. RFT,LFT, ECG were normal. CEA was 4.43 ng/ml (up to 2.4/ml).

USG Neck showed large thrombosis in left IJV extending in axillary vein with diffuse subcutaneous edema on left upper limb.

HRCT thorax showed area of consolidation and patchy opacity in peripheral part of lower lobe of left lung with Hypo-dense material in left subclavian and jugular vein with mild expansion s/o thrombus. A cystic mass 31x33mm was seen at the level of pancreas. A heterogeneous density lesion of 35x30x31 was seen arising from left lobe of liver and involving body of pancreas.

Patient was managed conservatively. Iv antibiotic, iv analgesic, iv fluid, LMWH and oral antiplatelet agents were given for management.

Fig-1. Showing upper limb

Fig 2. Showing engorged neck vein Cellulitis

DISSCUSSION

Long was the first who described IJV thrombosis as a consequence of peritonsillar abscess in 1912. (3)

UEDVT is classified as primary and secondary.

Primary UEDVT also known as effort thrombosis; is a rare and benign disease account for 1/3 of all UEDVT[4]. It is related either to effort thrombosis or idiopathic. It is also refer as *Paget Schrotter Syndrome*[5]. Usually occur in young and physically otherwise healthy person following vigorous upper extremity strenuous work like weight lifting. Anatomical variations like abnormalities of thoracic outlet results in axillo-subclavian compression and is followed by thrombosis. About 2 to 3% case of primary UEDVT is because of anatomical variation. These all causes micro-trauma to the intima and leads to activation of coagulation cascade. Idiopathic cases may be associated with occult cancer and hypercoagulable state. Prevalence of coagulation abnormality is also higher which includes heterozygous carrier of leiden factor, prothrombin G20210A mutation, deficiency of protein c and s, increase level of some coagulation factor[6].

Secondary UEDVT is more common and accounts for 2/3 of all cases, occurs in old persons with comorbidities. Main causes are:- Central venous catheterization, Surgery, Infection, Iv drug abuse, Neck massage, Malignancy, Oro-pharyngeal infections as lemierr's syndrome. High frequency of UEDVT is also associated with implantation of permanent pacemaker[7]. Hypercoagulable states are also a risk factor for secondary UEDVT. Association of thrombosis given by VIRCHOW:- Hypercoagulable state, stasis of flow and micro trauma.

Cardinal signs of UEDVT are:- pain, paraesthesia, weakness, swelling, pitting edema, discolouration and engorgement of superficial veins.

Clinical manifestation of IJV thrombosis , fever(83%); increased TLC(78%); cervical pain(66%); neck swelling(72%); sepsis(39%); pleuro-pulmonary complication(28%); svc syndrome(11%); chylothorax(6%) etc. Complication of IJV thrombosis may be septic emboli, pulmonary embolism, loss of vision, facial edema, increase ICT, intracranial thrombosis.

Diagnostic modalities for UEDVT are:- Contrast CT, MRI (provide better soft tissue differentiation) , USG (safe, non-invasive, cost effective and initial investigation) , Venogram contrast, d-dimer test etc. In septicaemia; patient with infected IJV thrombosis, culture from infection source and blood culture should be done. In uncomplicated cases coagulation and clotting disorder should be ruled out.

Treatment of underlying cause with antiplatelet agent is the choice of management. Sometime it requires surgical option like

thrombectomy, stenting etc. In non-specific management limb elevation, physiotherapy can be used.

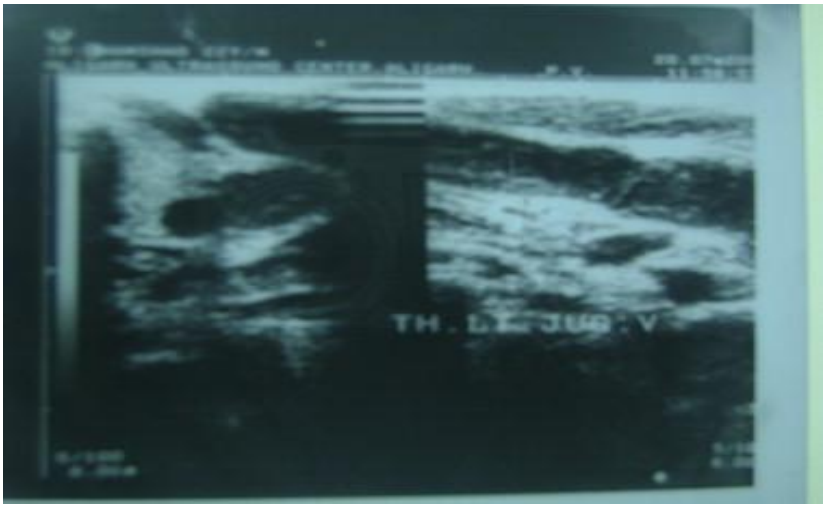

Fig 3. USG of patient

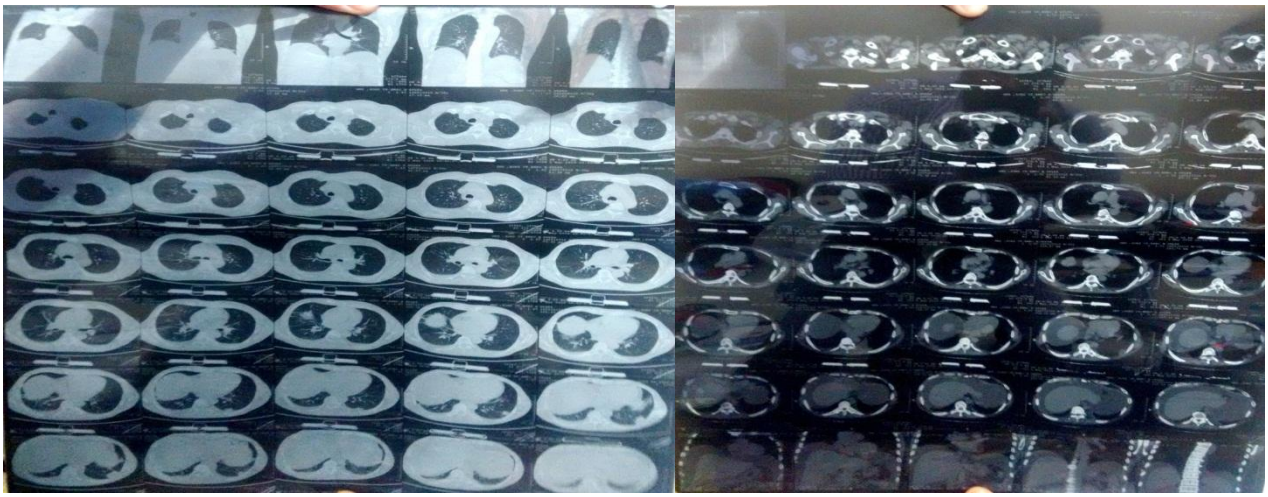

Fig 4 HRCT thorax of patient

CONCLUSION

In case of UEDVT; possibility of IJV thrombosis also should be kept in mind, although it is rare. This condition usually present as edema and cellulitis of upper limb and neck. Presence of risk factor with high suspicion and patient with clinical feature are required for diagnosis. Primary UEDVT has benign course, leads to less complication and easy to manage. On the other hand, secondary UEDVT has potential morbidity and fatal complication. IT is safe to treat patient with antiplatelets without any delay.

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