Thrombosis of Internal Jugular Vein in Nephrotic Syndrome Presenting as Neck Pain

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Sir,

Thrombosis is a known complication of nephrotic syndrome. It has most commonly been described in deep leg veins, inferior vena cava and renal veins [1]. We report a 6-y-old boy, a diagnosed case of steroid dependant nephrotic syndrome who failed to go into remission despite 4 wk of oral prednisolone @ 2 mg/kg/d. Kidney biopsy showed features of Focal segmental glomerulosclerosis. Pulse cyclophosphamide therapy was planned but prior to its initiation the child started complaining of dizziness and neck pain. Doppler ultrasound demonstrated right internal jugular vein (IJV) thrombosis. The child was immediately started on LMW Heparin. Over the next one wk the pain subsided and subsequent dopplers were normal. The child at 2 mo follow up has had no fresh complaints and is on oral warfarin.

Children with nephrotic syndrome are prone to multiple complications due to the disease itself and due to drugs including steroids, diuretics, antihypertensives, blood and blood products, albumin and antibiotics. The overall incidence of thromboembolic events in patients with nephrotic syndrome in a series was 20.4 patients/1000 patient-years [2]. In non pediatric studies, patients with membranous nephropathy, MPGN and Minimal change disease were found to be at risk of venous thromboembolism and the rates have ranged from 8-44%. The median time to diagnosis of thromboembolism in patients with nephrotic syndrome has been reported to be 70.5 d after the diagnosis. In our patient the duration was 14 mo. Risk of deep vein thrombosis has been associated with the use of central venous catheters (45%) [2] not being forthcoming in our

patient. Age of onset of greater than or equal to 12 y is an independent predictor of thromboembolic complications [2].

Multiple mechanisms responsible for the increased risk include an increase in the prothrombotic factors such as factor VIII and fibrinogen levels and a concomitant decrease in the Protein C, Protein S and Antithrombin III levels. In a study conducted in Bulgaria the major iatrogenic risk factor for thrombosis was identified as the use of furosemide [2] which was also used in our patient at pharmacologic doses.

In the past contrast venography was considered the standard diagnostic test but has been replaced by ultrasonography which is a non invasive and easily available modality. [3] The findings on USG are a dilated and incompressible vein and an intraluminal clot [4]. Despite this complication being common, there is no evidence to support routine anticoagulation prophylactically. Also IJV is a rare site to be involved in this process. Because IJV thrombosis has subtle and non specific clinical findings it is often missed. We emphasize that a potentially life threatening complication can be diagnosed early by clinical suspicion on complaint of neck pain and confirmed by USG Doppler and early institution of therapy can prove life saving.

References

1. Singhal R, Brimble KS. Thromboembolic complications in the nephrotic syndrome: pathophysiology and clinical management. *Thromb Res.* 2006;118:397-407.
2. Lilova MI, Velkovski IG, Topalov IB. Thromboembolic complications in children with nephrotic syndrome in Bulgaria (1974-1996). *Pediatr Nephrol.* 2000;15:74-8.
3. Kerlin BA, Blatt NB, Fuh B, et al. Epidemiology and risk factors for thromboembolic complications of childhood nephrotic syndrome: a Midwest Pediatric Nephrology Consortium (MWPNC) study. *J Pediatr.* 2009;155:105-10.
4. Albertyn LE, Alcock ML. Diagnosis of internal jugular vein thrombosis. *Radiology.* 1987;162:505-8.

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