

## RENAL VEIN THROMBOSIS WITH INFRAHEPATIC INFERIOR VENA CAVA EXTENSION IN A CASE OF ANTI dsDNA ANTIBODY NEGATIVE LUPUS NEPHRITIS

### General Surgery

**Dr Abhishek Shetty\***

Junior resident, Dept of General Surgery, Dr VM Govt Medical College, Solapur.  
\*Corresponding Author

**Dr Riddhima Dubhashi**

Junior resident, Dept of General Surgery, Dr VM Govt Medical College, Solapur.

### ABSTRACT

Systemic Lupus Erythematosus (SLE) is a chronic autoimmune disease of unknown cause that can affect virtually any organ of the body. Anti dsDNA antibody has been considered as a marker of renal disease. Hence elevated levels are expected in patients with Lupus Nephritis (LN). But in a subset of these patients anti dsDNA antibody is negative and this heralds the development of burned out LN (stage 5 LN) which predisposes patients to thrombosis. Prophylactic anticoagulation plays an important role in the management of such patients. We describe a case of a 19 year old female with lupus nephritis and renal vein thrombosis that had extended into the inferior vena cava. Her serology was strikingly significant for the absence of anti dsDNA antibody. The factors that predispose to the development of venous thrombosis in patients with Lupus Nephritis are discussed. In conclusion, negative anti dsDNA antibodies heralds the development of stage five Lupus Nephritis which predisposes to thrombosis. Guidelines for prophylactic anticoagulation as per serum albumin levels are also discussed.

### KEYWORDS

Renal Vein Thrombosis, anti dsDNA, prophylactic anticoagulation, Lupus Nephritis

### INTRODUCTION

Systemic Lupus Erythematosus (SLE) is a chronic autoimmune disease of unknown cause that can affect virtually any organ of the body. Immunologic abnormalities, especially the production of a number of antinuclear antibodies (ANA), are a prominent feature of the disease. Most patients with SLE will have clinical evidence of kidney disease, usually an abnormal urinalysis, at some point in the course of their disease. The dominant features of Lupus Nephritis (LN) are proteinuria, urinary sediment changes with microhematuria and erythrocyte casts, hypertension and progressive renal dysfunction. Also, advanced stages of LN predispose to thrombus formation in major vessels. A subset of these patients have negative Anti dsDNA ANA profiles which can be useful in determining their need for prophylactic anticoagulation.

### Case Presentation

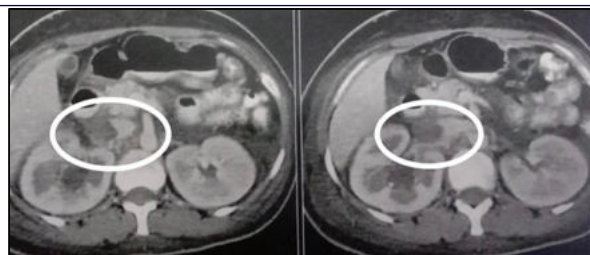
A 19 year old female resident of Barshi, Solapur presented to the OPD with complaints of fever since the past two days. She is known to have a significant past history. Six months earlier she had developed a rash over the face which aggravated on exposure to sunlight. She had received multiple sessions of intermittent haemodialysis subsequently. She presently complains of bilateral lower limb swelling the progress of which has been indolent. She has complained about development of oral ulcers and tingling numbness in bilateral upper limbs resistant to over the counter medications. Examination was significant for butterfly shaped scar on the face which spared the tip of the nose and bilateral lower limb pitting edema upto the groins. She is not dialysis dependent currently.

Investigations are shown in the table below

**Table 1: Relevant Investigations Are Given Here In**

| Investigation                    | Value                                              |
|----------------------------------|----------------------------------------------------|
| Haemoglobin                      | 8.6g/dl                                            |
| WBC                              | 8000/ul                                            |
| Platelets                        | 205000/ul                                          |
| Serum creatinine                 | 2.6mg/dl                                           |
| Serum albumin                    | 1.1gm%                                             |
| Sodium                           | 136meq/lit                                         |
| Potassium                        | 3.9meq/lit                                         |
| Urine protein                    | +++                                                |
| Urinary albumin creatinine ratio | 2337 (>2200 signifies nephrotic range proteinuria) |

A contrast enhanced CT scan of the abdomen revealed the presence of a filling defect in the right renal vein and the infrahepatic segment of the inferior vena cava suggesting thrombosis.



**Figure 1:** Filling Defect Visualised In The Right Renal Vein And The Infrahepatic Segment Of The Inferior Vena Cava

The figure on the left shows a filling defect extending in the Inferior Vena Cava and the figure on the right shows it's origin from the right Renal Vein

ANA profiling was done and as observed in the given table, absence of anti dsDNA antibodies is strikingly significant.

**Table 2: Antinuclear Antibody Profile**

| Antigen             | Titre |
|---------------------|-------|
| RNP/Sm              | +++   |
| Sm                  | +++   |
| SS-A native         | +++   |
| Ro-52 recombinant   | +++   |
| SS-B                | 0     |
| dsDNA               | 0     |
| Nucleosomes         | +     |
| Ribosomal P protein | +++   |
| Control             | +++   |

### DISCUSSION

Several factors predispose to the development of venous thrombosis in patients with Lupus Nephritis.

The important ones are Anti phospholipid antibody syndrome and Class V Lupus Nephritis.

Antiphospholipid Antibody syndrome: A subset of patients with SLE develop antiphospholipid antibodies (anticardiolipin, anti beta2 glycoprotein and lupus anticoagulant) which are responsible for multiple arterial/venous thrombosis [1].

Class V Lupus Nephritis called Membranous Lupus Nephropathy presents with clinical features similar to Primary Membranous Nephropathy which is placed under the spectrum of Nephrotic syndrome. The reason for thrombosis is loss of antithrombin 3 in urine.

### A Note On Anti dsDNA Antibody Negative Lupus Nephritis

There is a well-recognized association between the presence of high titre anti-dsDNA antibodies and active glomerulonephritis. Titers of anti-dsDNA antibodies often fluctuate with SLE disease activity [2].

Therefore, in a known case of Lupus Nephritis, a decreased (or zero as in this case) titre of anti dsDNA antibody becomes clinically significant as it heralds the development of burned out lupus (class V Lupus or Membranous Lupus Nephropathy) as opposed to the more active class 3 or class 4 forms [3]. This translates clinically as a normal or mildly elevated serum creatinine, increased proteinuria, hypoalbuminemia and subsequently increased tendency towards thrombosis like in this patient. Nevertheless, renal biopsy is indicated in such cases to confirm the diagnosis.

In such cases, prophylactic anticoagulation should be dosed as per the patient's albumin levels. At serum albumin levels between 2g/dl-3g/dl aspirin 75mg OD will suffice whereas at albumin levels less than 2g/dl, low molecular weight heparin like enoxaparin 20mg OD should be initiated with low dose warfarin and INR maintained between 1.5-2.5. This should be continued till the disappearance of nephrotic syndrome and rise in albumin levels greater than 3g/dl [4].

### CONCLUSIONS

In patients with Systemic Lupus Erythematosus, low or absent titres of anti dsDNA antibodies marks the development of Membranous Lupus Nephritis as opposed to the other active forms of nephritis. Due to increased frequency of thrombosis of major vessels, such patients require prophylactic anticoagulation which should be dosed as per the patient's albumin levels.

### REFERENCES

1. Giannakopoulos B, Passam F, Ioannou Y, Krilis SA: How we diagnose the antiphospholipid syndrome. *Blood*. 2009, 29:985-94. 10.1182/blood-2007-12-129627
2. Swaak AJ, Groenwold J, Bronsveld W: Predictive value of complement profiles and anti-dsDNA in systemic lupus erythematosus. *Ann Rheum Dis*. 1986, 45:359-66. 10.1136/ard.45.5.359
3. Donadio JV Jr, Burgess JH, Holley KE: Membranous lupus nephropathy: a clinicopathologic study. *Medicine (Baltimore)*. 1977, 56:527-36. 10.1097/00005792-197711000-00007
4. Rostoker G, Durand-Zaleski I, Petit-Phar M, Ben Maadi A, Jazaerli N, Radier C, Rahmouni A, Mathieu D, Vasile N, Rosso J, et al. Prevention of thrombotic complications of the nephrotic syndrome by the low-molecular-weight heparin enoxaparin. *Nephron*. 1995, 69:20-8. 10.1159/000188355