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## **Membranoproliferative glomerulonephritis with abnormally large IgA deposits in cryptogenic liver cirrhosis**

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**Case Study:** Glomerular immunoglobulin A (IgA) deposits are often found in liver cirrhosis (LC). Although pathomechanism of IgA deposits in LC is unclear, chronic hepatic dysfunction can interfere with the elimination of immune complexes including IgA and IgG. In addition, abnormally large IgA deposits of glomeruli in LC may cause acute kidney injury, often in the form of acute nephritis syndrome.

A 73-year-old female visited the emergency department for abdominal distension. She performed breast conserving surgery due breast cancer 2 year ago. She continued to use tamoxifen. Her laboratory data on arrival were followings: serum creatinine, 2.19 mg/dL; serum albumin, 2.6 g/dL; platelet, 154000/uL; total bilirubin, 0.66 mg/dl, ALT, 46 IU/L; C3, 73 mg/dL; C4, 21 mg/dL; urine albumin-creatinine ratio, 6.77 g/g; urine RBC, 20~50/HPF. Hepatitis markers were negative. Cryoglobulin was normal. Several autoimmune antibodies were normal. Liver cirrhosis was confirmed by liver biopsy. Her symptoms were not improved although using of furosemide. The renal biopsy showed severely mesangial hypercellularity, double contours, and cellular crescent. Ultrastructural examination disclosed heavy subendothelial deposits and effacement of foot processes. Predominant mesangial IgA staining was shown. She received hemodialysis due to uncontrolled volume. We initiated high steroid therapy. Unfortunately, she died of septic shock 2 weeks after the therapy. The causal relationship between tamoxifen and LC or acute glomerulonephritis (GN) is unclear, however, glomerular injury like membranoproliferative GN (MPGN) with large IgA deposit is associated with LC. Mild IgA deposits in LC do not cause acute kidney injury (AKI), but acute proliferative GN with large IgA deposits can lead to AKI. A superimposed bacterial infection in LC may lead to acute GN. Therefore, if LC patients show signs of acute nephritic syndrome and nephrotic proteinuria, which can be usually seen in MPGN, a carefully therapeutic approach should be considered rather than immediate use of immunosuppressive agents.

Figure. Findings of renal biopsy (LM,EM, and IF)

