

## Case 2: Native Bx

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56/M

내원 10년 전 혈압이 높다는 말을 들었으나 이에 대한 특별한 치료 없이 지냄.

09년 7월 시행한 건강 검진에서 Cr. 3.8 로 높게 측정되어서 타병원 내원 후 신장조직검사 권유 받았으나 환자 원하여 본원으로 전원.

09.7.20. 신장 조직검사 위해서 입원함.

### Past medical history

DM/HTN/hepatitis/malignancy/Tbc (-/+/-/-/-)

Drug history : none

Surgical history : none

Family medical history : none

Social history : alcohol/smoking (+ : current/-)

### Review of system

Cardiovascular	chest pain (-) syncope (-) palpitation (-) orthopnea (-)
Gastrointestinal	anorexia (-) nausea (-) vomiting (-) diarrhea (-) constipation (-) melena (-) hematochezia (-) dysphagia (-) abdominal pain (-) hematemesis (-) heartburn (-)
Urogenitalia	urgency (-) frequency (-) dysuria (-) polyuria (-) oliguria (-) hematuria (-) nocturia (-) flank pain (-) voiding difficulty (-)
Musculoskeletal	arthralgia (-) myalgia (-) back pain (-)
Neurologic	motor weakness (-) sensory change (-)
Skin	rash (-) urticaria (-) petechia (-) ecchymosis (-)

Physical examination

Initial V/S 138/87 mmHg-99/min-18/min-36.0°C  
Height/Weight 160.1 cm/60.4 kg BMI 23.56 kg/m<sup>2</sup>  
General not so ill-looking  
well oriented  
Eye yellow sclera (-) pale conjunctiva (-)  
Nose post nasal drip (-)  
Throat pharyngeal injection (-)  
tonsillar hypertrophy (-)  
Neck LN enlargement (-) neck vein engorgement (-)  
palpation of cervical LN (-)  
thyroid enlargement (-)  
Thorax normal chest contour symmetric expansion  
clear breath sound crackle (-) wheezing (-)  
percussion : resonant  
Heart regular heart beat  
murmur (-)  
Abdomen soft and flat  
normoactive bowel sounds  
tenderness (-) rebound tenderness (-)  
hepatomegaly (-) splenomegaly (-) palpable mass (-)  
Back & Extremity costophrenic angle tenderness (-)  
pretibial pitting edema (-)  
Urogenitalia genital ulcer (-)  
Neurologic motor weakness (-)  
sensory disturbance (-)  
gait disturbance (-)  
neck stiffness (-) Kernig's sign (-)  
Skin spider angioma (-) palmar erythema (-)  
gynecomastia (-) rash (-)

Initial laboratory data

CBC WBC 6,500/mm<sup>3</sup> Hb 11.5 g/dL plt 305 K/mm<sup>3</sup>

Chemistry

Ca/P (mg/dL) 8.9/3.4 glucose (g/dL) 182

**BUN/Cr (mg/dL) 39/4.0** protein/albumin (g/dL) 10.2/3.3

AST/ALT/ALP (IU/L) 23/16/96 total Bil 0.5

Electrolyte Na/K/Cl/tCO<sub>2</sub> (mEq/L) 134/4.6/104/21.3

Coagulation battery PT (INR) 88.9% (1.07) aPTT (sec) 25.0

UA : albumin TR, OB 1+, glucose 1+, wbc 3-5/HPF

Alb/Cr ratio : 43.5 mg/g

Dysmorphic RBC : inadequate RBC

C3/C4/CH50 : 50.1/3.5/16.0  
MPO-ANCA/PR3-ANCA (-/-)  
ANA (IF) : pos. homogeneous, 1:320  
Anti ds- DNA : 7.9  
Anti-Jo-1 (-) anti-U1RNP (-) anti-sm (-)  
Anti-SSA(Ro) (-) anti-SSB(Ra) (-)  
Anti-scl-70 (-) ANCA (-)  
**IgG 4380.0** IgA186.0 IgM57.0  
Ig G1 18.90  
Ig G2 19.10  
Ig G3 3.10  
Ig G4 0.18

U-protein 73.4mg/dL  
albumin,  $\alpha$ -2,  $\beta$ , and  $\gamma$  fractions -> tubular proteinuria

Initial problem list

- #1. azotemia
- #2. HTN
- #3. elevated IgG, tubular proteinuria

Assessment & plan

- A> azotemia d/t IgG4 related sclerosing ds
- P> kidney biopsy

Kidney biopsy

Severe interstitial fibrosis with dense lymphoplasmacytic infiltration, strongly suggestive of IgG4-related tubulointerstitial nephritis.

- Moderate tubular atrophy.
- Focal and global glomerular sclerosis (3/20).
- Moderate arterial intimal fibrosis.

MR, Cholangiography

R/O Autoimmune pancreatitis involving pancreas tail and extrapancreatic manifestation involving both kidneys and EHD.

09.7.25. PD 40mg start.

Azotemia 호전되는 추세로 퇴원.

## Review

IgG4-related systemic disease

### DEFINITION

- ✓ Autoimmune pancreatitis (AIP)
  - Yoshida et al. proposed in 1995
  - Elevation of serum IgG4 concentration and abundant IgG4-positive plasma cell infiltration of the pancreas
  - Also well known to be associated with various types of extrapancreatic organ involvement, and increased numbers of IgG4 positive plasma cells have been revealed not only within the pancreaticobiliary system but also in other organs
- > a new concept of IgG4-related systemic disease has been proposed and AIP is suggested to be the pancreatic lesion in this condition

### IgG4-related tubulointerstitial nephritis

- ✓ Sometimes associated with AIP, but there have been a few cases showing high serum IgG4 levels without notable pancreatic lesions.
- ✓ Seaki T et al. Intern Med 2007.
  - Investigated the results of laboratory and imaging studies of the kidneys in 7 patients with IgG4-related systemic disease, and examined the renal histology in four of them.
  - 4 had autoimmune pancreatitis
  - Six of the 7 patients showed some renal abnormalities.
  - In one patient, hydronephrosis was observed accompanied by retroperitoneal fibrosis
  - Another patient showed multiple low-density areas in both kidneys by CT
  - Four patients had tubulointerstitial nephritis
- ✓ Some AIP cases show several nodular lesions in the kidney that mimic metastatic tumors  
Rudnik L. et al. CMAJ 2006. & Murashima M. et al. Am J Kidney Dis 2007.
- ✓ Takahashi et al. Radiology 2007.
  - Retrospectively evaluate CT & MRI imaging renal findings in 40 patients with AIP
  - 14 (35%) had renal involvement (12 with parenchymal involvement and five extraparenchymal involvement)
  - Renal parenchymal lesions were mostly bilateral and multiple, predominantly involved the renal cortex.
  - 13 patients with renal involvement underwent a follow-up
    - : 10 patients regressed (in 9, after steroid treatment) but progressed in three patients without steroid treatment
- ✓ In some AIP cases, concurrence of a membranous nephropathy with IgG4-containing immune complexes.  
Simon J.W. et al. Am J Surg Pathol. 2006. & Uchiyama-Tanaka Y et al. Am J Kidney Dis. 2004
- ✓ Summary
  - ✓ IgG4 related TIN with AIP or without AIP
  - ✓ Pathology

- renal interstitial infiltration of lymphocytes and plasma cells, with fibrosis, tubular atrophy.
- immunohistochemistry : numerous IgG4-positive plasma cell
- ✓ The lesion vary from diffuse TIN to tumor-like masses according to the distribution patterns of the infiltrating cells.
- ✓ Steroid response : good
- ✓ Treatment
  - Prednisolone is usually initiated at 40mg/day for 1-2 months, and tapered by 5mg every 2-4 wk.
  - Some recommend a maintenance dose of 5-10 mg/day of prednisolone.