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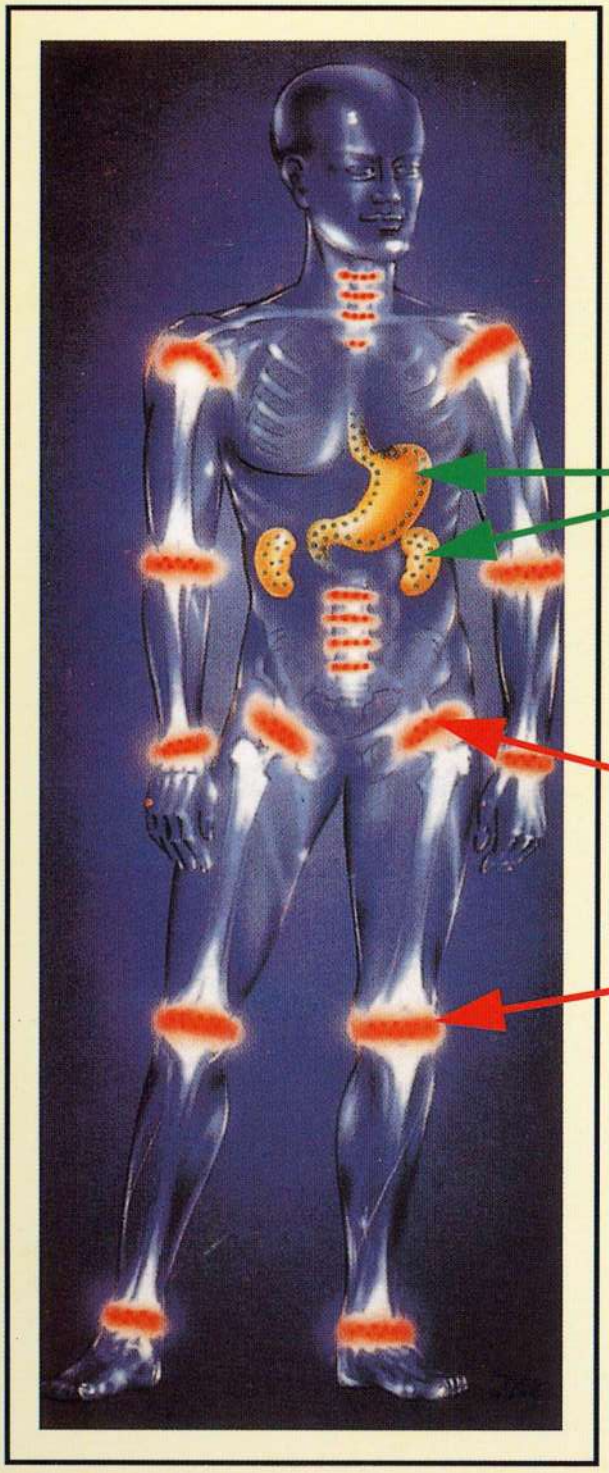

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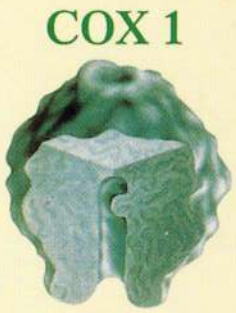


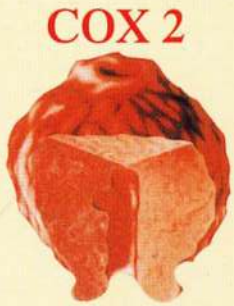


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- 腸胃副作用低
- 每日服用一次，投與方便
- 符合醫療的經濟性

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# 目 錄 Contents

## 病例報告

# Distal Renal Tubular Acidosis as an Initial Clinical Manifestation in a Patient with Systemic Lupus Erythematosus Associated with Sjögren's Syndrome – A Case Report

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We describe a 55 year old woman who presented with life threatening hypokalemic periodic paralysis (HPP) secondary to distal renal tubular acidosis (RTA), extensive investigation led to the diagnosis of systemic lupus erythematosus (SLE) associated with Sjögren's syndorme. She had heavy proteinuria and a decreased creatinine clearance (Ccr). Renal biopsy disclosed tubular-interstitial nephritis without any glomerular changes. After treatment with corticosteroid and K+ supplement, she had a clinical remission, an increase in Ccr and recovery from systemic acidosis. It is likely that distal renal tubular acidosis in this patient is a manifestation of SLE associated with Sjögren's syndrome.

Key words: hypokalemic periodic paralyis, distal renal tubular acidosis, systemic lupus erythematosus, Sjogren's syndrome

## Introduction

The hypokalemic periodic paralysis is a heterogenous group of disorders in which an acute onset of weakness is associated with a decrease in total body and serum levels of potassium[1].

Hypokalemic periodic paralysis has been described in patients with potassium-wasting renal tubular acidosis (RTA)[2]. RTA is a syndrome of disordered renal acidification, either primary or secondary, resulting in hyperchloremic metabolic acidosis and excessive renal loss of potassium[3].

Sporadic case of secondary distal renal tubular acidosis is associated most commonly with sutoimmune diseases, such as Sjogren's syndrome and systemic lupus erythematosus, and it occurs more frequently in women than men[4]. We report here a case of SLE associated with Sjögren's syndrome with distal RTA complicated by hypokalemic periodic paralysis and commented on the occurence of RTA and predominant interstitial nephritis in SLE associated with Sjögren's syndrome.

## Case Report

Patient Chou, a 55 year old female, was admitted with chief complaint of bilateral lower legs muscle soreness followed by progressive muscle weakness for 10 days. She had difficulty in getting up from bed and standing up from sitting position in addition, she could not breathe well. Progressive dyspnea developed and required mechanical ventilator support on the day of admission. An arterial blood sample PH: 7.095, $PCO_2$: 33.2 mmHg, $PO_2$: 196 mmHg, $HCO_3$-: 10.3 mEq/L. Serum chemistries were as follows: sodium, 142 mEq/L; potassium, 1.2 mEq/L; chloride, 120 mEq/L; calcium, 7.7 mg/dL; phosphorous, 3.6 mg/dL; anion gap: 11.7 mEq/L. Routine urinalysis showed a PH of 7.2; specific gravity: 1.013; 4 + protein; 3 to 5 RBC/HPF; 12 to 15 WBC/HPF. Distal renal tubular acidosis with hypokalemic periodic paralysis was impressed. The past history showed hypertension without regular treatment for 10 years, nontoxic goiter for one year and intermittent symmetric swelling of bilateral parotid gland for 3 years. Computer tomography of parotid gland showed symmetric swelling with irregular contrast enhancement, suggestive of sialoadenitis. After admission, the immunological evaluation showed the following: positive ANA with Fiax Index: 2.71-speckle type with SSA(+) & SSB(+), elevated IgG anticardiolipin antibody: 28.7 GPL unit/min (normal ≦ 15 GPL unit/min), hypergamma globulinemia (IgG/A/M: 1960/465/93); negative VDRL, rheumatoid factor, LEcell, anti-DNA & cryoglobulin; leukopenia, lymphocytopenia, hemolytic anemia and a normal platelet count (Hgb: 8.1 gm%, WBC: 3700/$mm^3$, absolute lymphocyte count: 910/$mm^3$, platelet: 274000/$mm^3$). Heavy proteinuria (daily urine protein: 3.9

gm) with renal insufficiency (Creatinine: 1.8 mg/dl and Ccr: 49 ml/min) were noted in renal function evaluation. There were no malar rash, no oral ulcer, no photosensitivity, no focal or diffuse neurological sign, no chest pain, no pleural effusion, no hair loss; but Raynaud phenomenon, arthralgia, severe dry eyes (with Schirmer's test: od. 4 mm/5min, os. 2 mm/5min) and dry mouth were present. SLE associated with Sjögren's syndrome was impressed. Renal biopsy was performed and disclosed the focal mild duplication of capillary wall. The tubules showed moderate atrophy and contain some fuscinophilic casts. Focal mononuclear cells infiltration in the interstitium were also seen. There was no active glomerular lesion. In immunochemistry stain, only nonspecific immunofluorescence of C3 on arterial wall was noted. After treatment with prednisolone 0.5 mg/Kg /Day and slow-K supplement, patient got great improvement with recovery of muscle power, extubation by hospital day 3. Six months later the Ccr increased to 78 ml/min and the 24 h urinary protein excretion was 300 mg.

## Disscussion

Acute hypokalemic periodic paralysis (HPP) is characterized by acute reversible generalized muscular weakness and absent deep tendon reflexes, usually sparing the facial, bulbar, and respiratory muscles. Sensation and consciousness are unaffected[5]. The underlying mechanisim of HPP is excessive potassium loss from the gastrointestinal tract or kidney or redistribution of potassium into cells, resulting in decreased resting membrane potentials which block the action potential[6].

Renal tubular potassium wasting is a feature of renal tubular acidosis (RTA). Proximal RTA is due to disordered bicarbonate reabsorption in proximal nephrons, and the distal type is due to impaired proton secretion in distal nephrons [7]. Distal RTA usually is a sporadic disorder which may develop as a primary disease, or secondary to a predisposing cause; eg, an autoimmune disease, amphotericin B or lithium therapy, renal transplantation or nephrocalcinosis[8].

The prevalence of immunologic disorders such as SLE and Sjögren's syndrome in adults with

distal RTA is controversial. Morris has claimed that adult distal RTA is primarily a disorder of women usually occurring in association with immunologic disorders[9,10]. Wrong and Feest, however, found that only 27% of their 70 cases of distal RTA had immunologic disorders[11]. Detection of immunologic disorders in patients with distal RTA depends on how intensively patients without obvious SLE or Sjögren's syndrome are evaluated. Since RTA is a syndrome of abnormal urine acidification, their underlying etiologies are important for treatment and prognosis. Treatment of HPP in distal RTA includes correction of the hypokalemia and acidosis, as well as treatment for the underlying diseases[3].

Impaired tubular function in SLE is most often present in patients with acute glomerulonephritis or nephrotic syndrome [12,13]. In contrast, our patient has symptomatic distal RTA but not any glomerular changes in renal biopsy, the association of renal insufficiency with predominant tubulointerstitial damage warrants explanation. Glomerular and tubulointerstitial abnormalities in SLE are usually comparable, but occasionally interstitial nephritis may occur in the absence of significant glomerular involvement[14]. It is assumed that the tubulointerstitial damage is a sequel to the deposition of immune complexes. IgG and C3 are most commonly present in the deposits and they are found along the basement membranes of peritubular capillaries, within the interstitium and along the tubular basement membrane[15]. Clinically, the tubulointerstitial involvement may contribute to the development of renal failure and to tubular dysfunction, marked by impaired maximal concentration ability, reduced fractional urinary excretion of $\beta_2$ microglobulin, and a renal tubular acidifying defect (recognized as secondary distal renal tubular acidosis)[14,16]. Despite the frequency of interstitial involvement in lupus nephritis, only a few cases of isolated or predominant tubulointerstitial nephritis have been reported in patients with systemic lupus erythematosus. Most of the patients with predominant interstitial nephritis are distinguished by clinically active lupus, positive test for ANA and DNA binding, benign urine analysis, and a predominant interstitial inflamma-

tion with only mild glomerular damages[17].

It would seem that RTA in our patient was related to Sjögren's syndrome rather than SLE because of the predominant interstitial nephritis. Chronic inflammatory kidney disease is a frequent manifestation of systemic lupus erythematosus and Sjögren's syndrome. Whereas in SLE glomerular damage is prevailing, renal involvement of Sjögren's syndrome is characterised by inflammatory infiltration of the interstitium[16]. We put forward the hypothesis of simulataneous primary Sjogren's syndrome as the prevailing associative factor for the rare occurrence of isolated interstitial nephritis in SLE. In primary Sjogren's syndrome chronic interstitial nephritis and RTA are relatively common[18]. The pathogenesis of interstitial nephritis in Sjögren's syndrome is not well understood. A role for deposited immune complexes has been suggested by some and for cell mediated immunity by others. A possible role for hypergammaglobulinemia in the renal tubular damage has also been proposed[19].

Circumstantial evidence from the literature seems to support the association of clinical overt RTA with primary Sjögren's syndrome rather than with SLE. Thus, Sjogren's syndrome may accompany SLE either as a distinct entity or, more commonly, as secondary Sjögren's syndrome similar to the one commonly observed with rheumatoid arthritis.

This case highlight the attribution of clinically overt laboratory findings, such as RTA, to a defined disease is of diagnostic and therapeutic importance. We suggest that adults with documented distal RTA should be closely evaluated for associated autoimmune diseases.

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# 全身性紅斑狼瘡合併史格蘭症候群以遠端腎小管性酸血症爲臨床表現——一病例報告

劉迺順　賴寧生

嘉義榮民醫院內科

一位55歲婦女因全身肌肉酸痛無力與呼吸困難送至本院，初步診斷爲遠端腎小管性酸血症導致的低血鉀性週期麻痺，經初步的緊急處理及後續的實驗檢查顯示患者亦爲全身性紅斑狼瘡合併史格蘭症候群的病人，其有明顯的蛋白尿及下降的肌酸酐廓清速率，但腎臟切片只顯示出腎小管間質腎炎，並無任何腎絲球病變。使用類固醇及鉀離子治療後，病人臨床症狀逐漸的改善—酸血症，腎功能及蛋白尿亦慢慢恢復正常。本文指出全身性紅斑狼瘡和史格蘭症候群可能以遠端腎小管性酸血症爲最初的臨床表現。

關鍵詞：低血鉀性週期麥麻痺、遠端腎小管性酸血症、全身性紅斑狼瘡、史格蘭症候群

# Mononeuritis Multiplex in a Patient with Adult-onset Dermatomyositis

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A 39-year-old man suffered from dermatomyositis for 5 years. He experienced progressive weakness and difficulty in dorsiflexion of the left big toe in recent one year. Successive drop of third to fifth fingers of the right hand ensued 7 months later. Electromyography and nerve conduction velocity tests revealed that the affliction is compatible with mononeuritis multiplex. In addition, pulmonary tuberculosis was complicated in this patient. But no evidence of malignancy, cutaneous or systemic vasculitis was noted. Clinically, mononeuritis multiplex is a rare complication in patients with adult-onset dermatomyositis.

Key words: adult-onset dermatomyositis, mononeuritis multiplex, common peroneal nerve, ulnar nerve

## Introduction

Neurologic complications in adult-onset dermatomyositis (DM) are not commonly reported in the literature[1-3]. Mononeuritis multiplex as a neurologic manifestation in these patients is extremely rare. We herein describe a patient with adult-onset DM complicated with interstitial pulmonary fibrosis and mononeuritis multiplex.

## Case report

We encountered a 39-year-old male who was diagnosed as

dermatomyositis (DM) in July, 1990. The initial presentations were polyarthritis, fever, proximal muscle weakness of upper and lower limbs, heliotrope facial rash. Laboratory tests revealed leukocytosis (white blood cell: 18500/$mm^2$, normal: 4800-10800/$mm^2$), anemia (hemoglobin:10.0 g/dl, normal: 12-14 g/dl), Westergren erythrocyte sedimentation rate (ESR) of 123 mm/hr (normal: 0-20 mm/hr), C-reactive protein (CRP) of 10.5 mg/dl and rheumatoid factor of 497 IU/ml. Antinuclear antibodies (ANA) and antibodies to extractable nulcear antigens (ENA) were negative. Serum creatine kinase (CK) was 514 mg/dl (normal < 168 mg/dl), lactate dehydrogenase 330 mg/dl (normal < 213 mg/dl) and aspartate aminotransferase 50 mg/dl (normal < 40 mg/dl). Serologic test for HIV was negative. Electromyographic test showed myopathic pattern and nerve conduction studies were normal. The muscle biopsy proved the diagnosis of DM. For fear of the association of malignancy, careful physical examinations, nasopharygeal, and tumor markers detection including carcinoembryonic antigen (CEA), alpha fetoprotein (AFP), prostate specific antigen (PSA) and CA 19-9 were surveyed but showed negative or normal values. He was treated with prednisolone 60 mg/day in combination with azathioprine 100 mg/day for 2 months. The serum creatine kinase (CK) level fell gradually and the proximal muscle weakness improved. Finally, prednisolone was tapered to 20 mg per day and azathioprine was discontinued. The patient discharged in good condition in September, 1990. After then, he was regularly followed-up in our clinic on variable dose of prednisolone 10-30 mg/day. Unfortunately, dry cough with progressively exertional dyspnea developed in July, 1994. On auscultation, bilateral basal rales were audible. Roentgenogram of chest showed diffuse fine reticular pattern and transbronchial biopsy revealed fibrosis in the interstitium of lung. One course of intravenous cyclophosphamide 500 mg was given but without definite improvement.

He began to feel a tingling sensation over the dorsum of the left foot in May, 1996. Then, progressive weakness, difficulty in dorsiflexion of the left foot and numbness over the dorsum of both feet ensued (Fig. 1). There was no trauma or compression history

could be traced in this period. Neurological examination demonstrated failure in dorsiflexion of the left big toe and decreased pinprick sensation over dorsum of the feet. The blood chemistry studies revealed unremarkable, including plasma sugar and serum CK level. The blood cell count showed leukocytosis (white blood cell: 11700/ $mm^2$) and mild anemia (hmoglobin: 10.6 g/dl). CRP was elevated to 8.1 mg/dl and ESR was 172 mm/hr (normal: 0-20 mm /hr). ANA, antibodies to ribonucleoproteins and ENA were all negative. Tumor markers including CA 19-9, CEA, AFP, CA 12-5 and PSA were all negative. Nerve conduction studies disclosed no response in bilateral peroneal nerves. Needle electromyography studies showed fibrillations and positive sharp waves in a multifocal distribution and diminished recruitment in the muscles innervated by the left common peroneal nerve, but not in the muscle by the L5 spinal root. According to these distinctive nerve dysfunctions and electrodiagnostic findings, bilateral common peroneal neuropathy

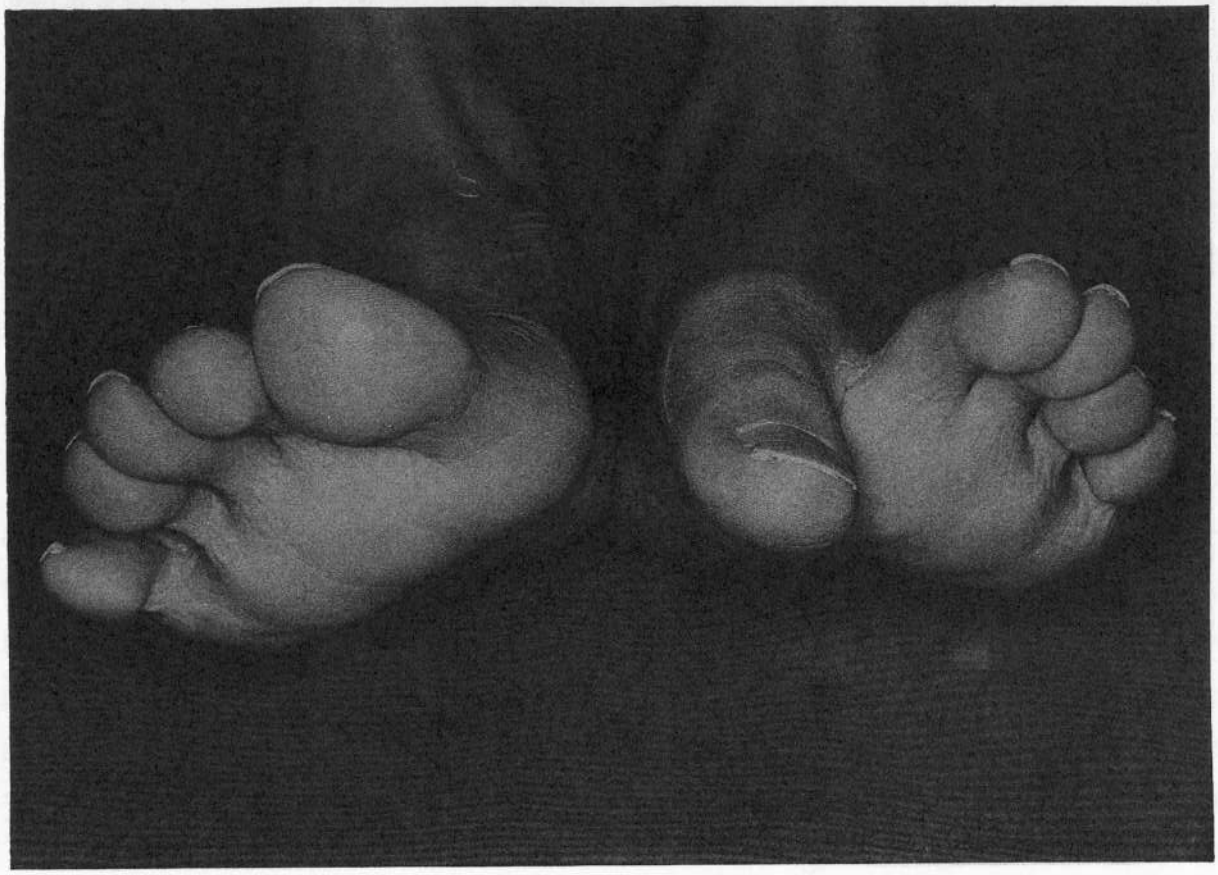

Fig. 1 Drop of left big toe on foot extension was found in May, 1996