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Case Report

CASE REPORT

A case of pseudo-pseudo Meigs' syndrome

Omnya Ahmed*, Tamir Malley and Joanne Kitchen

Rheumatology Department, Royal Berkshire Hospital, UK

*Correspondence address. Rheumatology Department, Royal Berkshire NHS Foundation Trust, Craven Road, Reading RG1 5AN, UK. Tel: 01183227969; E-mail: omnyaeahmed@doctors.org.uk

Abstract

Here we report a case of a patient with systemic lupus erythematosus presenting with pseudo-pseudo Meigs' syndrome (PPMS): a triad of pleural effusion, ascites and raised CA-125. There have only been nine other cases reported in the literature. To our knowledge, this is the first to have an oesophago-gastro-duodenoscopy and liver biopsy as part of the diagnostic work up. Its mechanism of action is not yet fully understood but PPMS is a treatable condition that is responsive to immunosuppression. It is therefore important to consider it in patients presenting like this, where alternative diagnoses, including malignancy, have been ruled out.

INTRODUCTION

Pseudo-pseudo Meigs' syndrome (PPMS) is a newly emerging manifestation of systemic lupus erythematosus (SLE), characterized by the presence of pleural effusion, ascites and raised CA-125 levels [1]. It has been described mostly in patients without a known prior diagnosis of SLE and often presents with painless, gradual onset, mild to moderate ascites.

CASE REPORT

A 44-year-old woman with known SLE/Sjogren's overlap syndrome (positive antinuclear antibody titre 1:1280 homogenous pattern, positive dsDNA, positive Ro antibody) was admitted under the acute medical team with a 2-week history of increasing abdominal distension and nausea. Her clinical features of Lupus prior to presentation were: malar rash, non-scarring alopecia and inflammatory arthritis, with no previous serositis. She has a past medical history of hypothyroidism and a previous caesarean section. Her regular medications are methotrexate 25 mg once per week (for treatment of her synovitis), folic acid 25 mg once per week, hydroxychloroquine 400 mg once per day, prednisolone 3 mg once per day and levothyroxine 175 μg once per day. She is a non-smoker with occasional alcohol consumption. Physical examination was remarkable for abdominal distension and shifting dullness. Vital signs were all within normal limits.

Initial laboratory results were as follows: erythrocyte sedimentation rate 74 mm/h (3–9 mm/h), albumin 27 g/L (38–51 g/L), alkaline phosphatase 107 IU/L (35–104 IU/L), alanine aminotransferase 253 IU/L (<34 IU/L) and bilirubin of 4umol/L (<21 umol/L). The full blood count, renal function, C-reactive protein, clotting, amylase, ferritin and bone profile were all normal. Her dsDNA level was 17 (0–20 IU/mL) and C3 and C4 levels were low. The antiphospholipid screen was negative. Urinalysis was normal. ECG and abdominal X-ray were unremarkable. Chest X-ray showed a small right-sided pleural effusion (Fig. 1).

An abdominal ultrasound confirmed moderate ascites. Further investigations included a viral and autoimmune liver screen which was normal. Doppler ultrasound demonstrated normal forward flow in the portal vein and all hepatic veins were patent, ruling out Budd–Chiari syndrome. Echocardiogram was normal.

Diagnostic abdominal paracentesis was carried out. Fluid analysis revealed a white cell count of 151/mm^3 with 90% lymphocytes. The Serum-Ascites Albumin Gradient (SAAG) was 0.6 g/dL, suggesting an exudative ascites. No organism was cultured and no acid fast bacilli or malignant cells were visualized on microscopy. *Mycobacterium tuberulosis* polymerase chain reaction performed on ascitic fluid was negative.

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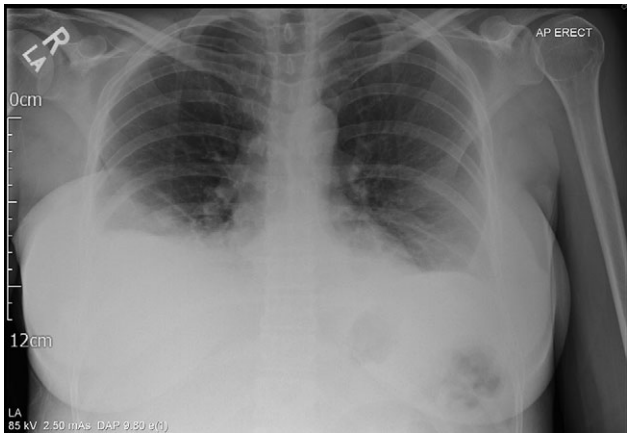

Figure 1: Chest X-ray showing right-sided pleural effusion.

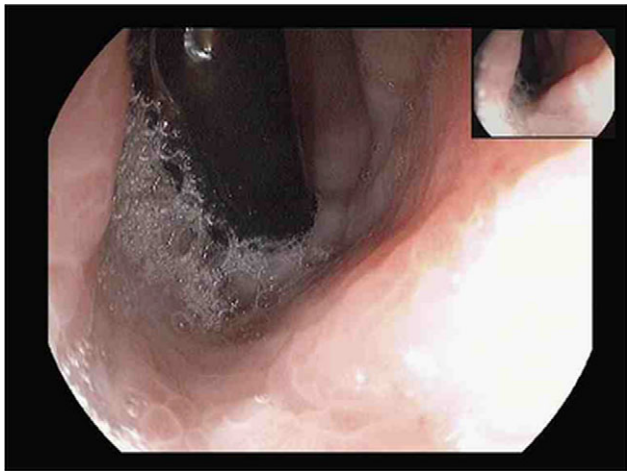

Figure 2: OGD image demonstrating 'snake-skin' appearance of the stomach lining, suggesting the presence of portal hypertensive gastropathy.

Further tests were carried out to look for underlying malignancy. CA-125 was elevated at 227 U/mL (0–35 U/mL). CA19-9 and carcinoembryonic antigen were negative. Computed tomography (CT) scan of the head was normal. CT chest–abdomen–pelvis showed pleural effusion and ascites but no signs of malignancy. A transvaginal ultrasound showed normal ovaries and uterus. Oesophago-gastro-duodenoscopy (OGD) demonstrated a 'snake-skin' appearance of the stomach lining, suggesting the presence of portal hypertensive gastropathy (Fig. 2). A subsequent liver *Fibroscan* showed no signs of cirrhosis. Finally, a liver biopsy was performed. This showed non-specific low-grade hepatitis without fibrosis. Systemic infection or a drug reaction were suggested as possible aetiologies.

After extensive investigation the diagnosis of PPMS was made. The patient's methotrexate was stopped on admission due to deranged liver function tests. She was then started on 500 mg per day of intravenous methylprednisolone over 3 days followed by 50 mg azathioprine and 40 mg oral prednisolone. Her ascites subsequently improved during her hospital stay and she was discharged.

At follow up 2 months later there was no evidence of pleural effusion or ascites on examination. Her liver function was normal and ESR was 39. CA-125 was not repeated. Her azathioprine was titrated up to 150 mg and she was advised to continue on 10 mg prednisolone.

DISCUSSION

PPMS is a newly emerging manifestation of SLE, characterized by the presence of pleural effusion, ascites and raised CA-125 level [1]. It was first described by Tjalma in 2005 [1]. Since then there have only been 9 cases reported in the literature, most of which did not have a prior diagnosis of Lupus [2–8].

When investigating ascites and elevated CA-125, ruling out malignancy is crucial. In SLE, other differentials to consider include lupus nephritis complicated by nephrotic syndrome, protein-losing enteropathy (PLE) and lupus peritonitis. Although our patient had low albumin, there was no pitting oedema or proteinuria to suggest nephrotic syndrome. In PLE, one would expect significant peripheral oedema and sometimes a history of diarrhoea [9]. The history was not in keeping with acute lupus peritonitis either which ordinarily presents with painful ascites. It is also associated with bowel wall thickening on imaging which was absent in our case. A thorough clinical assessment can therefore exclude alternative aetiologies, thus leading to the diagnosis of PPMS.

To our knowledge, our case is the only one where an OGD and liver biopsy were performed as part of the assessment. The signs of portal hypertension on OGD may very well be related to the mechanisms underlying PPMS. The liver function tests began to improve after withholding methotrexate and before starting steroids, indicating a drug-reaction is the most likely cause. Nevertheless, so little is known about the mechanisms leading to PPMS that we cannot completely rule out low-grade hepatitis as contributing to the syndrome.

The underlying pathophysiology of PPMS is still unclear. Lee *et al.* [7] published the first case of PPMS with high ferritin levels >2000, suggesting severe uncontrolled inflammation could be the cause. Local inflammation of the peritoneum is certainly supported by the exudative nature of the ascites, which has been reported consistently throughout the literature. In the one case where peritoneal biopsy results were reported, histology did indeed reveal marked inflammation and lymphoplasmacytic infiltrate [6]. Interestingly, the histology reports showed no evidence of small vessel vasculitis, further differentiating PPMS from lupus peritonitis where inflammation and consequent increased permeability of the microvascular circulation is what causes fluid and protein to leak into the peritoneal cavity [10].

However, in the case presented here and two others in the literature [5, 8], ferritin levels were reported as normal. This does perhaps suggest that a more complicated pathogenic mechanism may underlie PPMS. It is therefore plausible that portal hypertension could contribute to ascites formation, albeit only partly as one would expect transudative ascitic fluid if this were the only cause.

PPMS is managed by treating the underlying SLE with standard immunosuppressive regimes. A good response was reported in all cases in the literature, with resolution of the ascites and pleural effusions, and normalization of CA-125.

In conclusion, PPMS is a rare but increasingly reported complication of SLE. It should be considered once malignancy and other alternative causes have been excluded, even in the absence of a prior known diagnosis of lupus. To our knowledge, this is the first case presenting with deranged liver function, and the first to have an OGD and liver biopsy as part of the diagnostic work up.

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CONFLICT OF INTEREST STATEMENT

The authors have no conflicts of interest to declare.

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ETHICAL APPROVAL

Not required.

CONSENT

The patient provided written informed consent for their information and images to be published.

GUARANTOR

Omnya Ahmed.

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