Acquired thrombotic thrombocytopenic purpura in a patient with connective tissue disease with psoriatic arthritis

Irene S. Pakos[1], Shraddha Jatwani[2]

Background

Thrombotic thrombocytopenic purpura (TTP) can be a life-threatening microangiopathic hemolytic anemia syndrome caused by hereditary or acquired loss of ADAMTS13 activity. Autoimmune rheumatic diseases are associated with acquired TTP, most commonly involving systemic lupus erythematosus, systemic sclerosis, rheumatoid arthritis and antiphospholipid syndrome. We present a case of TTP in a patient with an overlap rheumatic syndrome with early treatment and a positive outcome.

Case

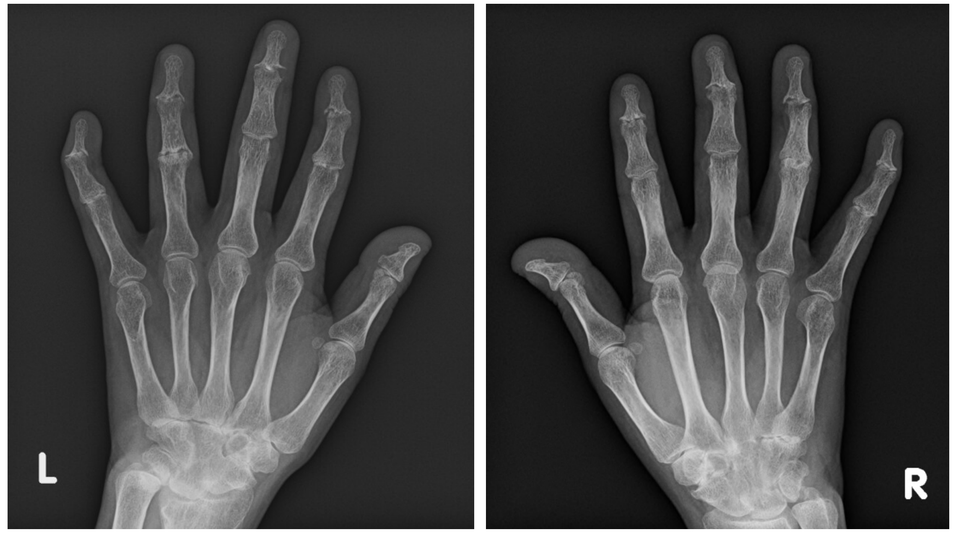
A 29-year-old Guatemalan woman presented with confusion, headaches, diffuse joint pains with intermittent swelling and morning stiffness, and intermittent abnormal uterine bleeding. Her medical history included rheumatoid arthritis, but she had not received any treatment in the past 3 years except for acetaminophen for joint aches.

Vital signs: T 36.8°C, HR 106, BP 92/60 mmHg, RR 16, SpO2 100% on room air
Neuro: confused and disoriented without focal neurological deficits, negative Brudzinki's sign, negative Kernig's sign
HEENT: Conjunctival pallor
Cardiovascular: regular rate and rhythm, no murmurs, radial and dorsalis pedis pulses +2, capillary refill <2seconds
Lungs: clear breath sounds bilaterally
Abdomen: soft, not distended,, not tender to palpation
MSK: telescoping of all DIPs of the bilateral hands, Heberden nodes present.

Hgb	7.3 gm7dL	INR	1.2
Platelets	17,000/mcl	LDH	756 IU/L
Total bilirubin	2.6 mg/dL	Haptoglobin	<8 mg/dL
Direct bilirubin	0.7 mg/dL	Fibrinogen	371 mg/dL
Cr	0.4 mg/dL	Coombs	negative
PTT	35 sec	ESR	64 mm/hr

Peripheral blood smear: severe thrombocytopenia, anisocytosis, large platelets, 4-5 schistocytes per high power field.

ADAMTS13	<3%	Anti-CCP	negative
ADAMTS13 inhibitor	7.7 BEU	Anti-centromere	> 8.0 (IA)
ANA	1:1280, centromere pattern	Anti-scl70	negative
RF, RF- IgA, RF-IgM	negative	HLA-B27	negative
Anticardiolipin Ab, beta-2 glycoprotein Ab, ds-DNA Ab, Smith Ab, RNP Ab, anti-SSA, anti- SSB, p-ANCA, c-ANCA: negative			



Radiographs of the bilateral hands showing diffuse periarticular osteopenia, severe erosions and joint space narrowing of the second through fifth digits and and the PIP joints of the fourth and fifth digits bilaterally. Diffuse joint space narrowing of the carpals is seen. Diffuse soft tissue swelling present as well.

Clinical course

- Patient received pulse steroids with methylprednisolone 80 mg daily and and started on daily plasma exchange (PLEX).
- ADAMTS13 level was found to be <3% and ADAMTS13 inhibitor was 7.7 BEU.
- After 12 days of daily PLEX, thrombocytopenia persisted, and the decision was made to treat with rituximab and to continue with PLEX with 1.5 x plasma volume exchange.
- After 4 weekly doses of Rituximab there was improvement in symptoms and stabilization of the platelet count.
- Patient was discharged on mycophenolate mofetil 250 mg twice daily and prednisone 70 mg daily.
- Outpatient follow up: found to have high titer of anticentromere antibodies. Anti-scleroderma 70 antibodies and HLA-B27 negative.
- History of Raynaud's phenomenon, in combination with an inflammatory state and the radiological findings displayed, suggested connective tissue disease with psoriatic arthritis.
- Patient continues on mycophenolate mofetil and the prednisone was tapered to a maintenance dose of 5mg daily. She has remained in remission.

Conclusions

- Due to the significant morbidity and mortality associated with the disease, the index of suspicion for the diagnosis of TTP should always be high and clinicians should be aware of the variations in presentation
- TTP can be associated with overlap rheumatic conditions.
- Early use of rituximab in plasma-refractory TTP and active treatment of the primary rheumatic condition can achieve and maintain remission.

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