Posterior reversible encephalopathy syndrome and digital gangrene in a patient with granulomatosis with polyangiitis – a rare case report

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INTRODUCTION

Granulomatosis with Polyangiitis (GPA) is an antineutrophil cytoplasmic antibody (ANCA)-associated vasculitis (AAV), classically associated with the presence of proteinase 3 (PR3)-ANCA.[1] GPA has a wide range of clinical manifestations, with multiorgan involvement, particularly upper and lower respiratory tract, and kidneys. One of its rarest manifestations is digital ischemia or gangrene that accounts for <1% of cases.[2] Posterior reversible posterior leukoencephalopathy syndrome (PRES) is a syndrome characterized by headache, visual changes, confusion, and seizures, accompanied by distinctive neuroimaging features, which are usually reversible. Rare cases of its association with vasculitis, including GPA, have been described. Others conditions such as end-stage renal disease, immunosuppressive drug use and eclampsia are additional risk factors for the development of PRES.[3]

CASE REPORT

A 64-year-old female was referred for Rheumatology observation at an University Hospital due to a one-week history of a rapidly progressive decrease in strength and sensitivity of the left hand, and 2nd, 4th and 5th left toes, associated with pain, swelling, and digital discoloration. Over the last 18 months, she had been complaining of weight-loss (30% of total body-weight), recurrent fever, arthralgia, purpura in the upper and lower limbs, and progressive decrease of lower limbs' strength for which she underwent nerve biopsy showing vasculitis of the small vessels and was started on 10 mg of prednisolone daily. She denied Ear, Nose, Throat (ENT) and cardiorespiratory symptoms. Her background history consisted of bilateral breast implants at the age of 52 and there was no history of smoking, alcoholic habits or illicit drug consumption. On physical examination, she was emaciated, with muscular atrophy, and presented purpuric lesions on extremities, necrosis of the 2nd, 4th, and 5th left toes (Figure 1A-B), and necrosis of the 2nd to the 5th left fingers (Figure 1C-D). Cardiopulmonary auscultation and abdominal examination were unremarkable. Laboratory tests showed normocytic normochromic anemia (Hb 7.8 gm/dL), ESR 84 mm/hr, CRP 5.8 mg/dL, creatinine 3.71 mg/dL, active urine sediment with a 24-hour proteinuria of 1106 mg, and positive ANCA-PR3 (390.8 UQ). Other relevant autoimmunity screens and laboratory workup for infections were negative. One-week after hospital admission, she developed dyspnea and episodes of diffuse headache with associated confusion. Visual abnormalities and seizures were not observed. Chest X-Ray and computed tomography scan showed pulmonary infiltrates (Figure 2A-B), with subsequent bronchoscopy consistent with alveolar hemorrhage, and brain MRI revealed findings compatible with PRES (Figure 3A-B). The patient was diagnosed with GPA[4] and treated initially with IV methylprednisolone (one pulse of 1g daily, during three days), followed by oral prednisone (1mg/kg/day) and rituximab (two pulses of 1g). Given the presence of alveolar haemorrhage, plasmapheresis was additionally started. The patient showed significant improvement of renal and pulmonary function and complete resolution of neurolo-

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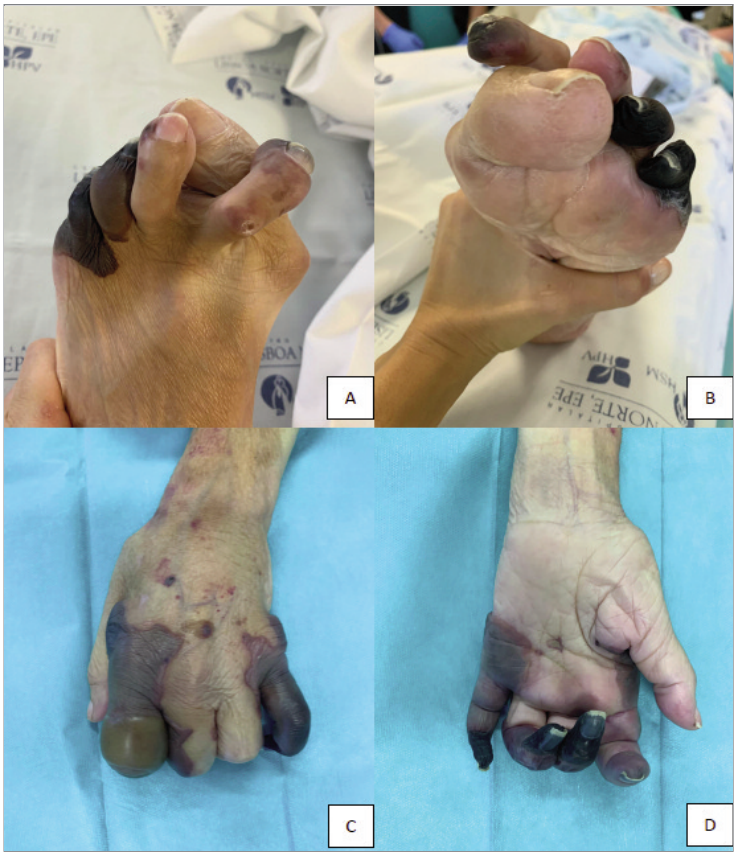

FIGURE 1. A and B) Dorsal view and plantar view of left foot showing necrosis of the 2nd, 4th, and 5th toes; **C and D)** Dorsal and palmar view of the left hand with necrosis from the 2nd to the 5th finger.

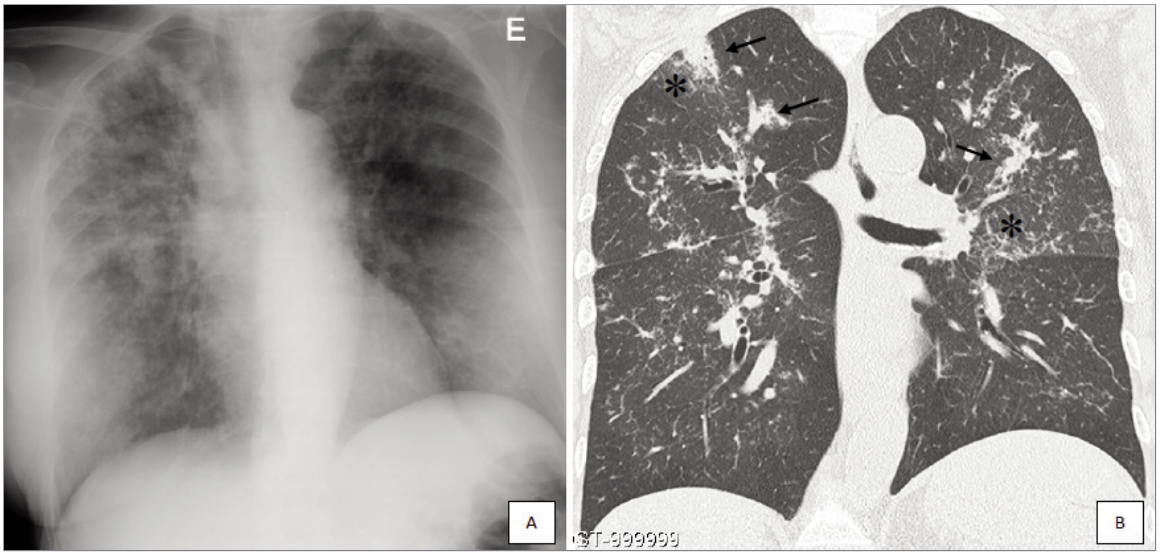

FIGURE 2. A) Chest postero-anterior radiograph showing diffuse bilateral alveolar infiltrates. The patient has bilateral breast implants; B) Chest Computed Tomography coronal image showing confluent peribronchovascular nodules with areas of consolidation (arrows) and surrounding ground-glass opacities (*). There were no signs of cavitation.

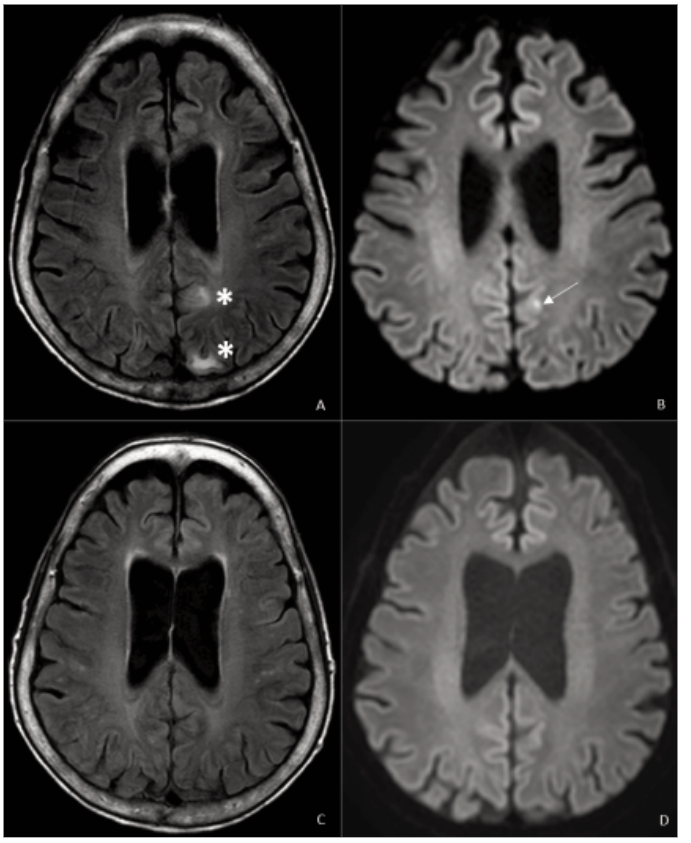

FIGURE 3. Brain MRI. Initial (A and B) and one month follow up (C and D) brain MRI. Hyperintense small parieto-occipital lesions (*) in T2 Flair (A), one with restricted diffusion (b1000) (white arrow), with no mass effect (B). The lesions resolved after one month (C and D).

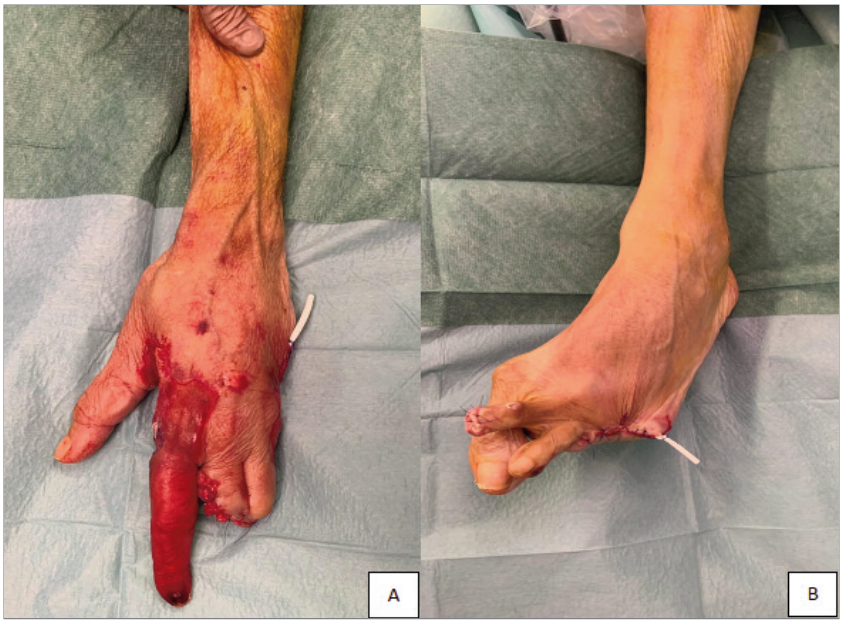

FIGURE 3. Amputation of the necrotic extremities A) partial amputation of 3rd and 4th fingers and total amputation of 5th finger of the left hand; B) partial amputation of 2nd toe and total amputation of 4th and 5th toes of the left foot.

gical symptoms; follow-up brain MRI demonstrated resolution of PRES signal intensities (Figure 3C-D). Unfortunately, digital gangrene was irreversible and the patient underwent amputation of the necrotic areas (Figure 4).

CONCLUSION

PRES and digital ischemia or gangrene are unusual manifestations of GPA, a disease itself quite rare. To the best of our knowledge, only 6 cases of GPA-associated PRES and 17 cases of GPA-associated digital ischemia or gangrene have been reported in the literature, none of which with patients presenting both features.[2,3] It is crucial that cases of AAV are treated at reference centers with multidisciplinary expertise in the management of these diseases.[5] In the present case, early diagnosis of GPA and appropriate targeted treatment could have improved disease progression and outcome.

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