PAPA syndrome

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Case presentation

45-year-old Middle Eastern man presented to the rheumatology clinic for evaluation of polyarthralgia. In childhood, he developed pain and swelling in his elbows and knees. He was diagnosed with polyarticular juvenile idiopathic arthritis and was treated with steroids but was never placed on DMARD's. By adolescence, he developed severe pustular acne involving the face, upper back, and chest. In his early 20s, he developed erythematous bumps and blisters on his lower extremities that rapidly progressed into large open sores and ulcerations which were severe enough to require skin graft. Skin biopsy revealed suppurative neutrophilic inflammation without evidence of an underlying bacterial infection. He was diagnosed with pyoderma gangrenosum and had good response to cyclosporine therapy. He developed end-stage renal failure from prolonged cyclosporine use requiring kidney transplantation. Genetic testing was positive for the pathogenic variant PSTPIP1 and was diagnosed with PAPA syndrome. Around the time of his diagnosis, his 4-year-old son developed pyoderma gangrenosum and was also diagnosed with PAPA syndrome. He had a good response to Anakinra and Canakinumab but was discontinued for recurrent respiratory tract infections thought to be secondary to severe immunosuppression as he was on transplant rejection prevention therapy with Tacrolimus and Mycophenolate. Doxycycline helped acneiform lesions. Pyoderma gangrenosum has remained quiescent. Plan to start Adalimumab given his ongoing joint pain

Discussion

PAPA syndrome (Pyogenic arthritis, Pyoderma gangrenosum and Acne) is a rare pyrin-related autoinflammatory disorder that affects the joints and skin. It has an autosomal dominant pattern of inheritance. PSTPIP1 gene is implicated. It is usually presents in childhood with oligo-arthritis. Skin manifestations which may include severe cystic acne, pyoderma gangrenosum, and pathergy develop in adolescence. Arthritis is usually responsive to glucocorticoids. Patients exhibit excellent responses to anti-TNF agents and interleukin 1 inhibitors.