

### Sarcoidosis in childhood: a report of three cases

Sirs,

Paediatric sarcoidosis has traditionally been divided into 2 distinct groups: 1. sarcoidosis with the triad of arthritis, uveitis, and a cutaneous eruption, associated with NOD2 mutation, that includes familial form (Blau syndrome) and sporadic form, and 2. sarcoidosis of the "adult type" which is not associated with NOD 2 mutation, but with frequent involvement of the lungs and mediastinal lymphnodes, fever and hypercalcemia (1-4). Here we described 3 patients with sarcoidosis to show the diversity of manifestations and the diagnostic complexity of these conditions.

The first case was a 4-year-old Caucasian boy who began suffering from arthritis of the wrists and ankles when he was 9 months old. At 3 years of age, he presented with arthritis in both knees, morning stiffness and weight loss. On physical exam polyarthritis of large and small joints was found along with synovial cysts in the wrists and ankles. Laboratory exams demonstrated an elevated erythrocyte sedimentation rate of 56 mm in 1<sup>st</sup> hour. The patient was initially diagnosed with juvenile idiopathic arthritis. After 2 months the patient began with daily fever, of 2 to 3 peaks per day. After 3 months, a disseminated papular skin rash appeared and a skin biopsy revealed non-caseating granuloma suggestive of sarcoidosis (figure). At this time a diagnosis of intermediate uveitis in both eyes was made. Genetic studies revealed a mutation of the CARD15 gene which is indicative of Blau syndrome. With pulsetherapy of methylprednisolone and infliximab the fever subsided and a significant improvement of the cutaneous rash and arthritis was observed.

The second case was a 2-year-old non-Caucasian girl who initially manifested a non-pruritic, diffuse maculopapular rash at 4 months of age. At the age of 11 months she presented arthritis and limitation in interphalangeal joints, wrists, ankles and right knee and synovial cysts in the wrists and ankles. After 1 year, bilateral ocular hyperemia began to manifest. Skin biopsy revealed a focal and nodular non-caseating granulomatous dermatitis. Ophthalmologic exam revealed bilateral anterior uveitis.



**Fig. 1.** Blau syndrome: disseminated papular skin rash.

These findings led us to suspect Blau syndrome and the diagnosis was confirmed by genetic studies. Non-steroidal anti-inflammatory drug, prednisolone and methotrexate therapy was started with improvement of the cutaneous rash. However, the wrist and ankle synovial cysts persisted.

The third case was a 5-year-old Caucasian girl who initially developed a disseminated nonpruritic papular rash when she was 1 year old, that evolved progressively into pustules. Four years after the initial clinical picture, she attended our clinic with persistent erythematous cutaneous lesions with desquamative centres located on the face, elbows, buttocks and lower limbs. A thoracic computer tomography revealed nodules in the right superior lobe and apical region, with an absence of mediastinal lymphadenomegaly. An abdominal ultrasound revealed retroperitoneal lymphadenomegaly. A skin biopsy showed evidence of non-caseating granulomatous dermatitis. Mantoux test and search for acid-alcohol-resistant bacillus were negative; ophthalmologic exam was normal. The patient was treated with methotrexate 10 mg/week (0.5mg/kg/week). Genetic analysis resulted negative for CARD15.

Diagnosis of sarcoidosis must be suspected in cases with skin granuloma, synovitis,

lung involvement and lymphadenomegaly (third case), or in the presence of rash, arthritis and uveitis as in Blau syndrome or in sporadic form (first and second case) which should be confirmed through genetic testing (5). Corticosteroids, methotrexate and anti-TNF agents have been used as treatment (6).

To summarise, early onset of granulomatous skin, joint and eye involvement should prompt a search for NOD 2 mutation. In both Blau syndrome and in sporadic form, systemic features may be present. "Adult type" sarcoidosis can start at a very young age.

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