CASE REPORT

An additional X chromosome

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A 35-year-old man presented with symmetrical inflammatory polyarthritis of the small and large joints and associated early-morning stiffness. He was assessed as having features in keeping with Klinefelter's syndrome. It is evident from the literature that there is a relationship between Klinefelter's syndrome and developing rheumatic conditions.

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A 35-year-old man presented with symmetrical inflammatory polyarthritis of the small and large joints and associated early-morning stiffness. He gave a history of leg ulcers 8 years ago. He had never been to school and never been sexually active.

Examination revealed a tall man with a normal blood pressure, pulse, respiratory rate and temperature, but with orbital hypertelorism, a prognathic jaw, an eunichoid stature and long arms. Other clinical findings were gynaecomastia (greater on the right), infantile genitalia, lack of secondary sexual characteristics, facial atrophy, hyperpigmented knuckles and generalised erythema nodosum. He was assessed as having features in keeping with Klinefelter's syndrome, with a possible underlying connective tissue disease (systemic lupus erythematosus (SLE), rheumatoid arthritis or Sjögren's syndrome).

His antinuclear antibodies were positive, with a titre of 320, but anti-double-stranded DNA antibody was negative. Anti-RNP (124 U/mL) and anti-SS-A (Ro) (112 U/mL) were strongly positive. Anti-SS-B (La), anti-smooth muscle antibodies, cardiolipin antibodies and antimitochondrial antibodies were negative.

His complement C3 was low (0.77 g/L) and C4 normal. He was rheumatoid factor negative. His angiotensin-converting enzyme level was high (72 U/L) (8 - 52).

The patient's testosterone level was low (<0.5 nmol/L) (5.6 - 25.2), follicle-stimulating hormone high (43 IU/L) (1.4 - 18.1), luteinising hormone high (28.7 IU/L) (1.5 - 9.3) and vitamin D low (34 nmol/L).

The full blood count was unremarkable, except for a low haemoglobin level (8.8 g/dL).

His C-reactive protein level was 71 mg/L, erythrocyte sedimentation rate 107 mm/h and ferritin 2 376 µg/L, with normal iron levels. Urea and electrolyte levels and liver function tests were normal.

Chromosomal studies were in keeping with Klinefelter's syndrome. A skin biopsy showed mild hyperkeratosis, and a dual-energy X-ray absorptiometry (DEXA) scan revealed osteopenia.

Discussion

We reassessed the patient as having Klinefelter's syndrome with SLE complicated by lupus panniculitis, although we could not prove it on skin biopsy owing to an inadequate specimen. His arthritis was treated with methotrexate and we also administered chloroquine, vitamin D and calcium. In view of the osteopenia we referred the patient to an endocrinologist for testosterone replacement, to which he responded well.

Klinefelter's syndrome was named after Henry F Klinefelter, who practised rheumatology at Johns Hopkins University School of Medicine, Baltimore, Maryland, USA. He was a medical student in the 1940s, when he contributed to the description of the syndrome.[1] Most patients with Klinefelter's do not seek medical attention and are therefore not diagnosed.[1] It is evident from the literature that there is a relationship between Klinefelter's syndrome and developing rheumatic conditions. Rovensky *et al.*[2] highlighted the strong association between Klinefelter's syndrome and rheumatoid arthritis, juvenile idiopathic arthritis, psoriatic arthritis, dermatomyositis/polymyositis, SLE, systemic sclerosis, ankylosing spondylitis, primary biliary cirrhosis and mixed connective tissue disease.

References

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