Ichthyosis Vulgaris and X-linked Ichthyosis: Simultaneous Segregation in the Same Family

Sir,

Autosomal dominant ichthyosis vulgaris (IV) and X-linked ichthyosis (XLI) share many clinical features. XLI has a reported frequency of 1 : 2000 – 6000 males, while IV has a frequency of 1 : 250 persons (1, 2). Several reports have stated clinical differences between the 2 types of ichthyosis in order to establish a differential diagnosis (3).

The 2 types of ichthyosis are due to different genetic defects. The most frequent molecular defect in XLI is a complete deletion of the steroid sulphatase (STS) gene (4 – 7), which is located on Xp22.3 (8). The STS gene codes for the STS enzyme (EC 3.1.6.2), which hydrolyses 3-beta-hydroxysteroid sulphates (9). Determination of STS enzymatic activity confirms XLI diagnosis and can be used to classify both types of ichthyosis (10). Autosomal dominant IV is the consequence of a keratohyaline alteration affecting the matrix protein of the stratum corneum (11). However, the gene defect in IV has not been identified.

We describe here a Mexican family segregating both types of ichthyosis.

PATIENTS AND METHODS

The propositus was a 9-year-old boy who showed a moderate degree of skin affection. The sample included a family in which 10 male members were affected by ichthyosis. Seven possible XLI carriers were also included. They were all informed about the details of the study and they agreed to participate. An STS assay was carried out in all subjects as described previously (12, 13). DNA extraction of peripheral blood and PCR amplification of the 5′ and 3′ ends of the STS gene were performed by conventional methods in all patients (14 – 15). Normal controls were included in each assay.

RESULTS AND DISCUSSION

Fig. 1 shows the family pedigree. The propositus was classified as an XLI patient through STS assay (0.00 pmol/mg protein/h) and DNA analysis (no amplification of both extremes of STS gene). It was stated that his grandfather presented a form of ichthyosis and we concluded by pedigree analysis that it probably corresponded to XLI. Thus, the maternal aunts of the propositus were considered as obligated XLI carriers, in fact the propositus mother (II-5), 2 aunts (II-4, II-8) and 1 sister (III-4) had an STS activity compatible with an XLI-carrier state (0.24 – 0.30 pmol/mg protein/h). Patients II-1 and II-2 had ichthyosis and STS activity compatible with XLI diagnosis (0.00 pmol/mg protein/h). In these cases, DNA analysis of the 5′ and 3′ ends of STS gene corroborated the diagnosis of XLI. These patients also had cryptorchidism, an associated finding of XLI, which was corrected surgically. Patients II-7, II-9, II-10, III-5 and III-9 had ichthyosis and normal STS activity (0.87 ± 0.15 pmol/mg protein/h) with normal amplification of 5′ and 3′ ends of STS gene. They were classified as IV patients. Individuals III-4 and III-6 were analysed and they presented a normal STS activity.

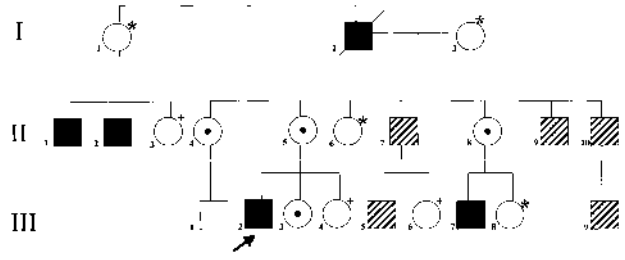

Fig. 1. Genealogy of the family simultaneously segregating X-linked ichthyosis (XLI) and ichthyosis vulgaris (IV). ■ XLI (no STS activity); hatched shading: IV (normal STS activity); circle with central black spot: XLI-carrier through STS activity; *STS activity not determined; +normal STS activity. Patient II-1 had unilateral cryptorchidism and II-2 had bilateral cryptorchidism.

Only 1 family has previously been described with both of these varieties of ichthyosis (16). The cases were analysed clinically, histologically and by electron microscopy, but the STS assay was not available and XLI diagnosis was not confirmed.

Although IV and XLI are being transmitted in the family described here, it is not possible to establish whether the segregation occurs through the same progenitor. Unfortunately, the IV gene defect has not yet been identified and we cannot discard this possibility. A more detailed study is necessary to test this hypothesis.

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Post-herpes Zoster Scar Sarcoidosis

Sir,
I read with interest the report by Corazza et al. describing a case of post-herpes zoster scar sarcoidosis (1).

Although histological findings followed patterns of cutaneous sarcoidosis, 2 questions remain concerning the diagnosis of scar sarcoidosis.

First, the patient had negative investigations for systemic sarcoidosis, whereas the previous report of sarcoidal granuloma in herpes zoster scars included bilateral hilar lymphadenopathy as a prominent radiological feature of sarcoidosis (2).

Secondly, sarcoidosis may account for granuloma formation, but "sarcoidal" granuloma formation in herpes zoster scars has also been reported in patients with chronic lymphocytic leukaemia (3).

Granulomatous tissue reactions encountered in the healing phase of lesions caused by herpes zoster virus depend on the patient's immune status. Such a hypersensitivity reaction may arise by the same mechanism in other diseases with immunological abnormalities.

I believe histopathological changes in scars, as mentioned by Corazza et al., should be reported as sarcoid-like granuloma and use of the term (scar) sarcoidosis should be restricted to cases fulfilling several diagnostic patterns of sarcoidosis.

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Response to the Letter by Barrazza

Sir,
We are grateful to Barrazza for having emphasized various aspects connected with the diagnosis of post-herpes zoster scar sarcoidosis. Scar sarcoidosis is often associated with systemic involvement, but it may occur in the absence of systemic symptoms or even precede them.

Even though previously reported cases of sarcoidal granulomas in herpes zoster scars have been observed in patients affected by chronic lymphocytic leukaemia (1, ref. 2 above), immunological abnormalities or lymphoproliferative disorders were not found in our patient. In this particular case, therefore, it is difficult for us to consider the granulomatous tissue reaction on the herpes zoster scar as depending on immunological abnormalities. Further reports will probably resolve this question.

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