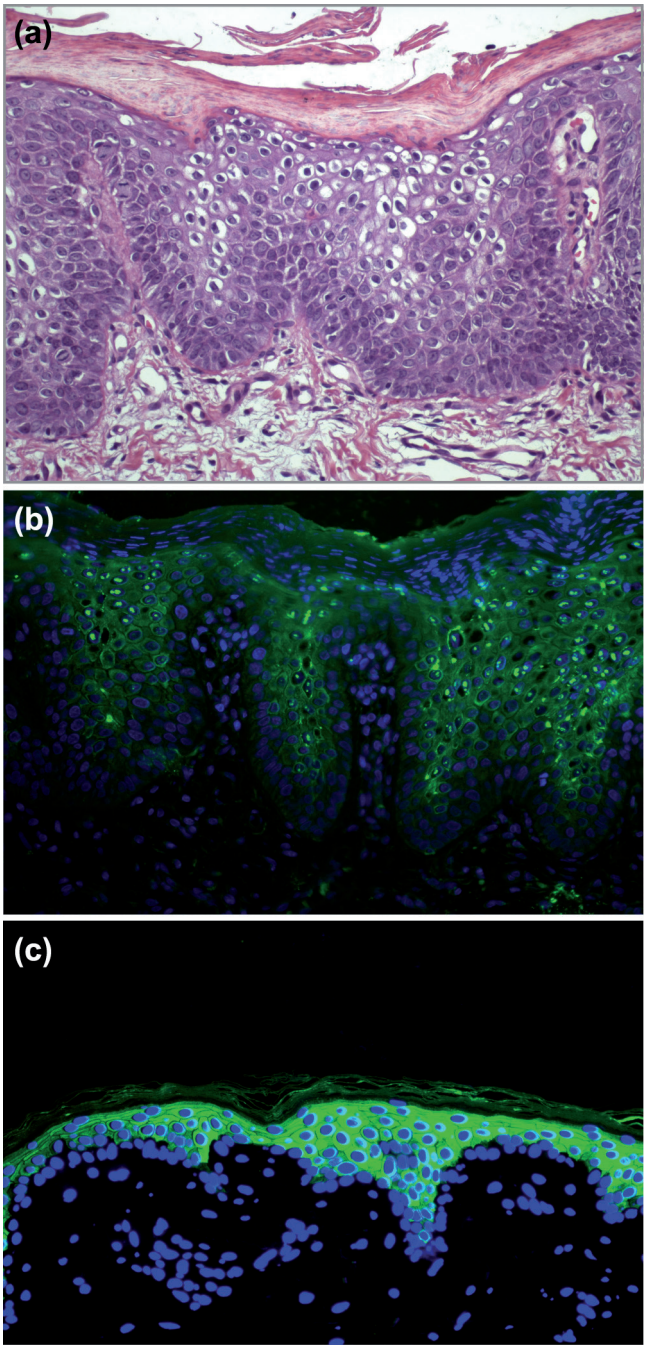


*Fig. S1*. Histopathological and immunofluorescence analysis of a skin biopsy in Case 2. Acanthotic and hyperkeratotic epidermis with a reduced granular layer and focal parakeratosis (a). Note the presence of cytoplasmic vacuolisation in several suprabasal keratinocytes (a). Immunofluorescence labelling for keratin 10 reveals a markedly reduced staining of suprabasal epidermis (b) as compared to normal control skin (c). Note the dotted nuclear labelling for keratin 10 of numerous suprabasal keratinocytes (b). (a) HE staining, original magnification X200(b, c), nuclear DAPI counterstaining, original magnification × 200.

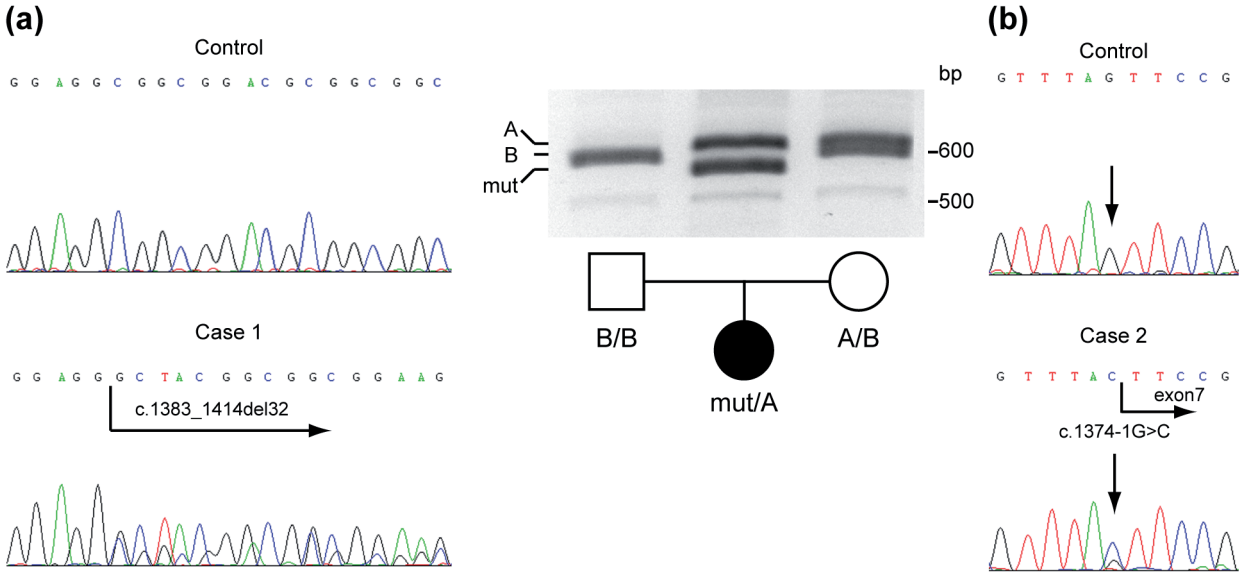


*Fig. S2.* Molecular analysis of the *KRT10* gene. (a) Case 1: sequence analysis of the genomic region spanning exon 7 and its intronic borders revealed the heterozygous c.1383_1414del32 frame-shift mutation (left panel). Length polymorphism analysis and gel electrophoresis of PCR amplified fragments encompassing exon 7 and flanking intronic borders. The family pedigree summarises allele segregation. Primers used to amplify the DNA are expected to generate a PCR product of 635 bp (allele A). This amplicon is shorter in the father, since he is homozygous for a known polymorphic in-frame variant c.1468_1479del12 (allele B). The mother is compound heterozygous for allele A and allele B. The proband inherits allele A from the mother, while the size of the other fragment (591 bp) demonstrates that the c.1383_1414del32 mutation arises *de novo* on the paternal allele in linkage with the c.1468_1479del12 polymorphic variant (allele mut) (right panel). (b) Case 2: sequence analysis of KRT10 intron 6/exon 7 border shows the heterozygous c.1374-1G>C mutation, which changes the obligate G of intron 6 acceptor site. A normal sequence is shown for comparison.

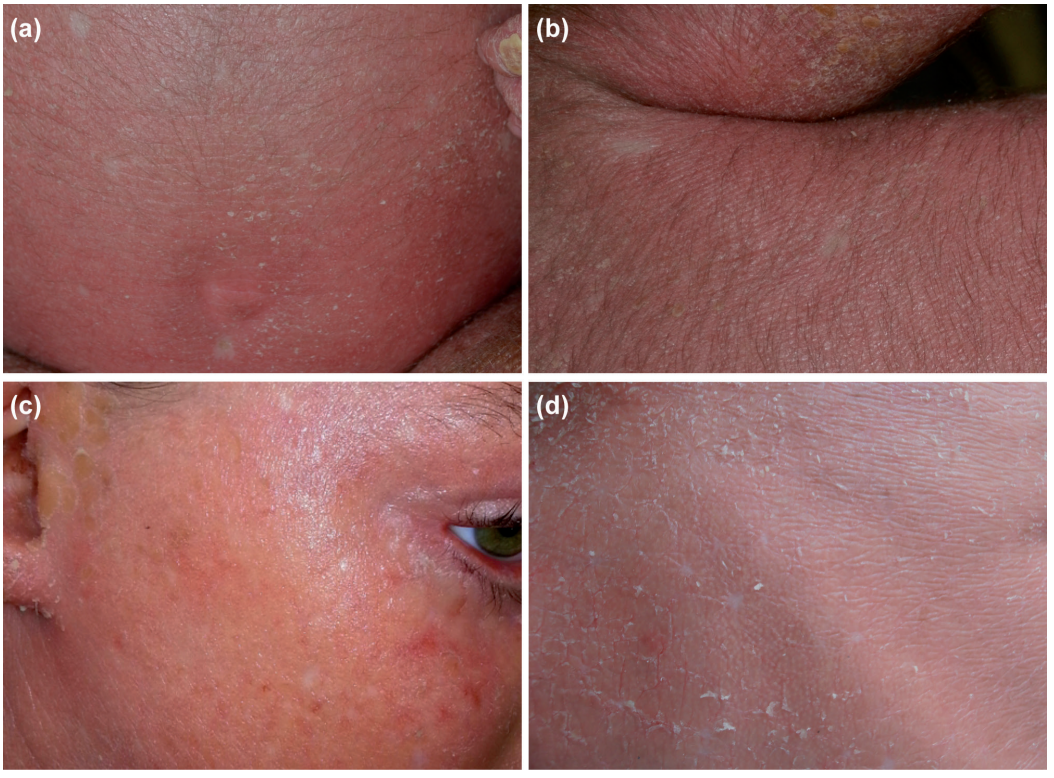


*Fig. S3.* Normal-appearing skin spots of the abdomen (a) and back (b) of Case 1. Similar spots of smaller size are also present on the face (c) and back (d) of Case 2. Also note the marked hypertrichosis of the back of Case 1.

Table SI. *Clinical findings in patients with ichthyosis with confetti (IC)**

| Case (Ref) | Age, years/Sex | Presentation | Age, years, at IC detection | Hyper-trichosis | Additional findings | Systemic therapy |
|---|---|---|---|---|---|---|
| 1. Camenzind, et al. (2) | 14/M | Ichthyosiform erythroderma | 8 | NR | None | Etretinate |
| 2. Camenzind, et al. (2), Brusasco, (6, S1) | 12/F | Ichthyosiform erythroderma | 10 | Yes | Pruritus, mild ectropion, PPK | Etretinate |
| 3. Marghescu, et al. (1) | 57/F | Ichthyosiform erythroderma | NR | NR | PPK, dystrophic nails | Etretinate |
| 4. Rufli, et al. (5), Burger, et al. (9) | 5/F | Ichthyosiform erythroderma | 8 | Yes | Pruritus, mild ectropion, PPK, hyperconvex nail plates, lack of dermatoglyphs | |
| 5. Torrelo, et al. (11) | 8/F | Ichthyosiform erythroderma | 6 | Yes | PPK, pruritus | Acitretin |
| 6. Krunic, et al. (7) | 32 | Ichthyosiform erythroderma | 10 | NR | Pruritus, PPK | |
| 7–16. Choate, et al. (8) | 18, 42, NR/5F, 5M | Ichthyosiform erythroderma | NR | NR | Not known | |
| 17. Present study (Case 1) | 3/F | Collodion then ichthyosiform erythroderma | 2.5 | Yes | Pruritus, PPK, growth retardation, psychomotor retardation | Acitretin |
| 18. Present study (Case 2) | 6/M | Collodion then ichthyosiform erythroderma | 5 | Yes | Pruritus, mild ectropion, PPK, ear deformity, growth retardation | Acitretin |

*At least 3 additional cases have been published with different diagnoses, but clinical and/or histopathological/ultrastructural features suggestive for IC (S2–S4).

*Supplementary references*

S1. Brusasco A, Cambiaghi S, Tadini G, Berti E, Caputo R. Unusual hyperpigmentation developing in congenital reticular ichthyosiform erythroderma (ichthyosis variegata). Br J Dermatol 1998; 139: 893–896.

S2. Hendrix JD Jr, Patterson JW, Greer KE. Skin cancer associated with ichthyosis:the MAUIE syndrome. J Am Acad Dermatol 1997; 37: 1000–1002.

S3. Arnold ML, Anton-Lamprecht I, Albrecht-Nebe H. Congenital ichthyosis with hypogonadism and growth retardation – a new syndrome with peculiar ultrastructural features. Arch Dermatol Res 1992; 284: 198–208.

S4. Elbaum DJ, Kurz G, MacDuff M. Increased incidence of cutaneous carcinomas in patients with congenital ichthyosis. J Am Acad Dermatol 1995; 33: 884–886.

NR: not reported; PPK: palmoplantar keratoderma.