Dyskeratosis Congenita: An Inherited Bone Marrow Failure Syndrome
May 01, 2012
By Shahnawaz Amdani, MD [1], Vivekananda Dasari, MD [2], Magda Mendez, MD [3], Harvey Sasken, MD [4], James Leach, MD [5], and Ernest Lieber, MD [6]

Abnormal pigmentation, nail dystrophy, and leukoplakia may signal dyskeratosis congenita.

A 57-day-old girl was brought to her pediatrician because of a scaly rash on her face and scalp. The diagnosis was seborrheic dermatitis; a salicylic acid/sulfur shampoo and topical hydrocortisone were prescribed.

The patient was seen again at 4, 6, and 10 months of age for the same rash. The diagnosis was amended to atopic dermatitis and the treatment was changed to 1% hydrocortisone ointment, to which there was minimal response.

At 1 year of age, the child was brought to the ED with fever and rash. This was the first time fever accompanied the rash. Laboratory test results—including a CBC, blood culture, and urinalysis and culture—were normal. The diagnosis was viral exanthema.

When the child was 13 months old, a whitish coating developed on her tongue and lips. The diagnosis was thrush. Treatment was prescribed but thrush recurred. She again presented at age 14 and 15 months with the same scaly rash. Again, the diagnosis was atopic dermatitis. Hydrocortisone treatment was continued.

At age 19 months, the patient was again brought for care because of worsening rash. This time, there were dark plaques with edema all over her body. The diagnosis was dermatosis and edema. The child was referred to pediatric dermatology.

Examination revealed poor dentition, hypopigmented macules on the child’s back and lateral chest, ichthyosiform rash on both lower extremities with fine scale, and spoon-shaped nail changes. A punch biopsy showed dermal fibroplasia, dermal melanophages, and hints of interface dermatitis—findings consistent with dyskeratosis congenita.

The child was referred for genetic, neurologic, hematologic, and dental counseling. A pediatric geneticist proposed the diagnosis of autosomal recessive form of dyskeratosis congenita.

The child is being followed regularly by dermatology, neurology, and hematology.

With X-linked inheritance, only males display symptoms. With autosomal dominant inheritance, one of the patient’s parents is affected. This was not the case with our patient; her parents had a 25% chance of having another child with dyskeratosis congenita.

About dyskeratosis congenita
In dyskeratosis congenita, abnormal skin pigmentation and nail changes are usually the first symptoms; these often become manifest before a child’s 10th birthday. These changes are followed by bone marrow failure, which occur before the patient reaches age 20. Up to 80% of affected patients show signs of bone marrow failure by age 30.1

Dyskeratosis congenita is 2 to 3 times more common in males than females because the main mechanism of inheritance is X-linked.2 Fewer than 1% of patients have autosomal recessive inheritance3 (as in our case). Telomere abnormalities have been reported in a few patients with other inherited bone marrow failure syndromes, including Fanconi anemia, Shwachman Diamond syndrome, and Diamond Blackfan anemia, but the degree of telomere shortening is usually not as profound as in dyskeratosis congenita.4 The primary cause of death (in 60% to 70% of cases) is from bone marrow failure and immunodeficiency resulting in fatal infections before third decade of life.5
Dyskeratosis Congenita: Take-home points

- Dyskeratosis congenita is an inherited bone marrow failure syndrome. In its classic form, it is usually characterized by the mucocutaneous triad of abnormal skin pigmentation, nail dystrophy, and leukoplakia (Figures 1-3).¹
- It is associated with a very high risk of aplastic anemia, myelodysplastic syndrome, leukemia, and solid tumors. Patients have very short germ line telomeres, and approximately half have mutations in 1 of 6 genes encoding proteins that maintain telomere function.
- Hematopoietic stem cell transplantation is the only cure for patients with severe bone marrow complications.⁶
- Rash and thrush are a very common presenting complaint in pediatrics. If patient presents with above mentioned triad (abnormal pigmentation, nail dystrophy, and leukoplakia), keep this entity in mind as a diagnostic possibility.

References
Source URL:

Links: