Case Report

Erythrodermiaichtyosisformis congenital – a case report

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ABSTRACT

Non-bullous congenital ichthyosi-form erythroderma is an autosomal recessive congenital keratinization disorder. We present the only one registered case of congenital non-bullous ichthyosi formerythroderma in North Macedonia. Our patient now is a 29-year old man from Gostivar. He was born with low birth weight and a low Apgar score (5/7). After birth, the skin was so cracked, that there were bleeding in certain places. Furthermore, the entire body, especially the head, was covered with yellow-green scales of varying size, which were firmly attached to the substrate. There was no history of similar or same illness in the family. Little is known about the oral manifestations of this disorder. The prognosis is variable. The disease has a strong impact on the quality of life due to altered physical appearance, problematic symptoms and treatment restrictions.

Key words: *Congenital, Recessive, Non-bullous congenital ichthyosi formerthro derma,oral manifestations*

An ichthyosis is a heterogeneous group of hereditary and acquired forms of diseases. The name derives from the Greek word "ichthys" meaning fish and is a descriptive name for the group of genodermatoses with impaired keratinization, followed by dry skin and appearance of peels/squids of varying size, shape, and color. It usually manifests itself from birth and lasts until the end of life, so that it does not affect life expectancy, except in extremely severe forms.Nonsyndromicichthyoses,also known as autosomal recessive congenital ichthyosis (ARCI), this group consists of arlequinichthyosis, lamellar ichthyosis (LI), and congenital ichthyosiformerythroderma [1]. In the group of keratinopathicichthyosis, which are caused by to keratin mutations, epidermolyticichthyosis (EI) and superficial epidermolyticichthyosis are included. Ichthyosis covers more than 20 diseases, which are classified in the following basic clinical forms [2,3]:

- Ichthyosis vulgaris/ Ichthyosis simplex/ Ichthyosis vulgaris dominans
- Ichthyosis X-Conjuncta/ Ichthyosis vulgaris recessive/ X-linked recessive ichthyosis
- IchthyosisLamellariserythrodermiaIchthyosiformis congenital non bullosa
- IchthyosisEpidermolytica/ erythrodermiaIchthyosiformis congenital bullosa/ Hyperkeratosis epidermolytica/Ichthyosisbullosa
- Harlequin Foetus/ Ichthyosis congenital letalis

Erythrodermiaichtyosisformis congenital is an autosomal recessive genetic heterogeneous disease that occurs due to certain gene mutations. The incidence of moderate to severe Erythrodermiaichtyosisformis congenital varies between 200-400 cases every year. These premature newborns are often covered with a membrane that is friable. After the disappearance of the cellophane

lining appears a picture of ichthyosiformerythroderma, with hulls on the body and face, and larger limbs of the limbs. There is an ectropion that can persist throughout life, as well as hyperkeratosis of the palms and feet to varying degrees. Corneal white plaques on the skin cause flexor contractures of the limbs. Fingers are underdeveloped, intolerance to heat, alopecia, nail dystrophy, hearing. Erythema migrans over time may be less pronounced, but desquamation persists.

Nonbullous congenital ichthyosiformerythroderma (NBCIE) is an autosomal recessive form of inherited ichthyosis. The incidence of this disorder is about 1 in 300,000 births. Clinically, NBCIE appears as generalized erythroderma with fine white scales that gradually replace the collodion membrane. Other associations include ectropion, eclabium especially in babies born with Harlequin type ichthyosisscalp alopecia, decreased sweating with heat intolerance, and nail dystrophy [4, 5, 6]. Symptoms are different in each patient, so that two patients with the same type of Ichthyosis have different symptoms.

We present the only one registered case of congenital non-bullous ichthyosiformerythroderma in North Macedonia.

CASE REPORT

A 29 year old male patient from Gostivar was born with low birth weight and low Apgar score (5/10). After birth, the skin was so cracked, that there were bleeding in certain places. Furthermore, the entire body, especially the head, was covered with yellow-green scales of varying size, which were firmly attached to the substrate. A biopsy from his skin was taken then and was sent to University of Zagreb for pathological analysis. Pathohistological finding of a part of the skin of the thigh showed hyperkeratosis with focal parakeratosis. Stratum granulosum was present in places. Also, there was moderate acanthosis with preserved architectonics of the epidermis. In the upper dermis, there was an inflammatory infiltrate. Many sections of the blood vessels, hair follicles, and sweat glands in the dermis were seen. There was no family history of similar or same illness.

On examination, the nails were very fragile and were growing in downward direction. Dryness of skin and pruritus were noted. 4th and 5th fingers of the right arm had reduced function, flexon contractions were also noted in these fingers. Ophthalmologic examination revealed ectropion on the eyes, congenital chronic dacryocystitis, and conjunctivitis. Depressive symptoms like grief and sleep disturbance sometimes arise, due to its condition. The patient was using Topical emollients and topical keratolytic for dryness of skin.thepatiemt had undergone a surgery to correct the contractions of his arms two years ago, which was unsuccessful. No oral manifestations were present in the case.

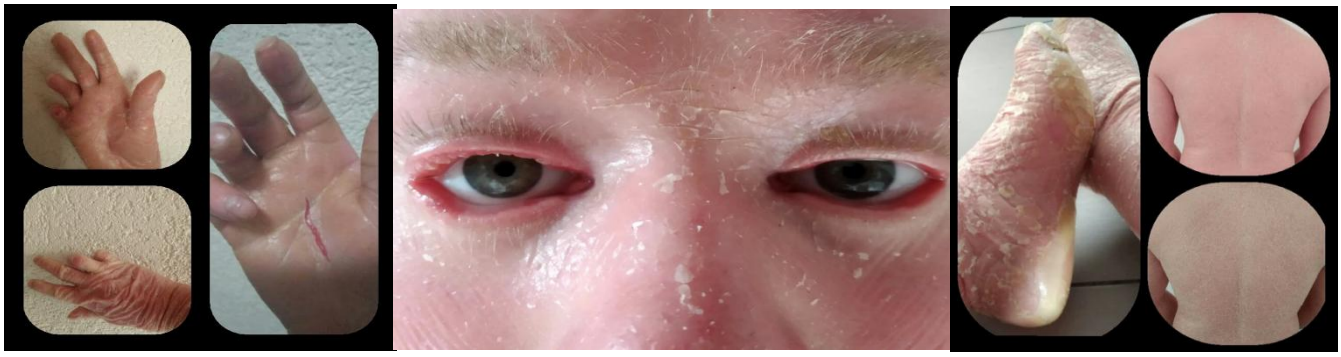

Figure 1: Clinical photos - Contractures on the fingers of patient's hands, Figure 2: Ectropion of the both eyes, Figure 3: Palmoplantarkeratoderma,contractures on the fingers of patient's legs on the left side of the picture.

An OPG was taken for routine dental examination. It revealed, endodontic treatment with teeth no 11, 12, 13,14 and 23. Missing teeth with teeth no 22,36,38,46, and 48. The teeth were extracted because of local pathology as sequelae to caries.The dental management was initiated with a preventive measures as the oral hygiene was compromised and patient was under high caries risk. Full mouth scaling and polishing was done followed by topical fluoride application. For the management of his skin problem, he was referred to the Clinic of Dermatovenerology.

DISCUSSION

Non-bullous congenital ichthyosiformerythroderma (NBCIE) is characterized by grey-white scales on an erythematous background, induced by the accelerated mitotic rate of the epidermis and disruption of the epidermal barrier. Palmoplantarkeratoderma, nail dystrophies, alopecia, ectropion and anhidrosis may accompany the disease. Lamellar ichthyosis is another form of autosomal recessive non-bullous ichthyosis which can be differentiated from NBCIE by the lack of erythroderma and the presence of characteristic large, dark-colored and plate-like scales. Recently, mutations in the genes ABCA12, TGM1, ALOXE3, ALOX12B, NIPAL4 and CYP4F22 have been determined in cases with NBCIE and⁄or lamellar ichthyosis. [4, 7-15]

New mutations associated with ichthyosis are presented in the literature [16,17]. Brown VL et al reported two NBCIE patients who have developed multiple aggressive nonmelanoma skin cancers, predominantly cutaneous squamous cell carcinoma. They climbed that NBCIE may be a risk factor for skin cancer development [18].Mutation analysis in the study within 45 cases by RajpopatSet all revealed that 52% of survivors had compound heterozygous mutations, whereas all deaths were associated with homozygous mutations. They concluded that compound heterozygotes appear to have a better survival advantage rate and with improved neonatal care and probably the early introduction of oral retinoids, the number of survivors is increasing [19].Glaucoma in patients with nonbullous congenital ichthyosiformerythroderma (NBCIE) is a rare entity. Ichhpujani P et al present a case of NBCIE with glaucoma and dwarfism. They concluded that the nonbullous congenital ichthyosiformerythroderma (NBCIE), glaucoma, and dwarfism can often occur together and need to be assessed and managed individually. Early diagnosis of this spectrum is very helpful for improvement of patient management and also for improvement of patient's quality of life. Dermatologists must cooperate with ophthalmologists and must get an ocular examination conducted for icthyoses patients [20].

There is limited information about the oral manifestations of this disorder. Oral and dental findings reported in itchthyosis patients have included gingivitis, periodontitis, enamel hypoplasia, high caries incidence, delayed primary and secondary eruption, bruxism, bifid teeth, the irregular morphology of teeth, alveolar ridging, fish mouth appearance, mouth breathing, xerostomia, and hyperkeratotic plaques on the tongue [1,3,21]. A case report by Choudhary R et al describes the dental management of a case of 5 years and 11-month-old child with NBCIE suffering from early childhood caries (ECC) under general anesthesia [22].Generally, the diagnosis of ichthyosis, including all types and subtypes, is based on: clinical picture, positive family history, pathohistological findings, and an electron microscopic finding. In certain types, prenatal diagnosis with genetic testing is also possible. Doctors often use genetic testing in order to help them in treating and monitoring the patient. Another reason for the need for genetic testing is if a person who has ichthyosis or a family member plans to form a family.

Hereditary ichthyoses are life-threatening illnesses, and therapy is symptomatic in order to alleviate the symptoms. The treatment is aimed at reducing hyperkeratosis by means of keratolytics and hydration of dry skin with emollients. Local treatment is carried out with the application of preparations containing urea 5-10% lotions or creams; salicylates 5-10% or combined with corticosteroids. Lacticum or lithic acid (citricum) 1-3% is used in creams; vitamin A-acid 0,05% (tretinoin). Corticosteroid creams are recommended for capturing the prevailing regions and erythrodermic forms. It is often necessary to swim in lukewarm water and skin care with neutral hydrating creams of vegetable origin and avoiding supposons or pH 7.In severe cases, systemic therapy with: corticosteroids at moderate doses of pednisolone is used temporarily. Oral retinoids (acitretinum-neotigason) can be used in severe forms of the disease, but are less tolerated than in the case of Lamellar Ichthyosis [23]. For some patients there is a marked improvement over time, but the disease often remains stable throughout life, with periods of exacerbation. The expected duration of life is normal. The disease has a strong impact on the quality of life due to altered physical appearance, troublesome symptoms and disease and therapy limitations.As a side effects of oral retinoid therapy, angular cheilitis and facial dermatitis may occur.

Patients with ichthyosis do not require any modification in their dental treatment most of the times. During dental treatment care must be taken to avoid manipulating the patient's skin, particularly in the perioral areas, since affected areas can be tender or friable.However, as a pediatric dentists one should be aware of the concurrent medical problem and its treatment, and also about possibility of hepatic toxicity with the use of retinoids, which can affect the choice of local anesthetic during dental treatment. Patient in our case report is a

person with special needs and our country is making efforts to employ such persons. He has been employed by the Ministry of Health recently.Teamwork and more serious management andtreatment are needed to resolve such severe cases of rare disease.

CONCLUSION

The prognosis of Erythrodermiaichtyosisformis congenital variable. The disease has a strong impact on the quality of life due to altered physical appearance, problematic symptoms and treatment restrictions.

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