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A Case of Epidermolysis Bullosa Dystrophica Dominant Associated with Megacolon

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=국문초록=

거대결장을 동반한 優性 營養障碍性 水疱性 表皮剝離症의 1例

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황영희 · 박상수 · 한혜기 · 국홍일

영양장애성 수포성 표피박리증은 만성 비염증성 기계적 수포성 질환으로 상염색체 우성 또는 열성으로 유전되며, 보통 신생아기부터 발생한다.

외상을 받기 쉬운 부위에 경미한 손상 또는 자연적으로 쉽게 수포를 발생함을 특징으로 반복적인 수포발생으로 이영양적 반흔, 피부위축, 손톱 발톱의 변형 및 소실, 합지증, 탈모증 등의 증상을 보이며 심한 경우 구강점막, 식도, 인두 등을 침범하기도 한다.

본 저자들은 특징적인 임상증상과 병리조직학적 및 전자현미경 소견상 전형적인 영양장애성 수포성 표피박리증으로 확진된 1예를 경험하여 보고한다.

Introduction

Epidermolysis bullosa dystrophica(E.B.D.) is a rare, chronic non-inflammatory mechanobullous disease of hereditary trait, which easily produces bulla by minor trauma or spontaneously.

Although the etiology of E.B.D. is unknown, a possible mechanism has been proposed that blisters might elevate levels of collagenase in tissue[1].

Classification of epidermolysis bullosa is made by distinguishing patterns of inheritance from clinical manifestations.

Hutchinson(1875) reported a case presumed to be E.B.D., but the first detailed description of one of the major mechanobullous diseases was that of Tilbury Fox(1879). It was so precise and clear that it was superior to most present-day description.

In our case report, we have described a case of E.B.D. associated with megacolon.

Report of Case

A 10-year old boy was first seen at the dermatologic department of Ewha University Hosptal in July 1980 because of erosive, hemorrhagic bulla and crusts formation on the entire body, cicatrical alopecia, absence of total finger and toe nails, complete fusion of fingers and toes.

He had extensive blistering at birth and

bullae had been precipitated by even minor trauma ever since. For several years he had taken supportive symptomatic treatment at many local clinics.

Past medical history made no explanation except for a few brief account on upper respiratory infections.

There was no family history of a bullous disorder and other hereditary skin disorders.

On physical examination, he was retarded in physical growth and development for his age. There was mental retardation too. The heart and lungs were clinically normal. When the patient was first seen, he had marked scarring, atrophy, and many denuded areas over the entire body including scalp.

There were no fingernails or toenails, mitten-like syndactyly of fingers and toes.

Laboratory findings; C.B.C. was normal limit except for hemoglobin. (Hb.; 10.0 gm/dl).

Urinalysis finding was within normall imit. Chest X-ray and esophagogram were normal.

Small bowel series and barium enema findings were that largely dilated fusiform segment is contained in remnant barium material, suggesting segmental dilatation of rectosigmoid colon, congenital or secondary megacolon.

Histopathologic findings; Light microscopic examination revealed subepidermal vesicles, dermal-epidermal separation, nonspecific inflammatory cells infiltration of dermis, and the PAS positive basement zone was poorly developed.

Immunofluorescence studies were no deposition of IgG, IgE, C 3. In electron microscopic examination of our case, there were large bulla cavity, basal lamina on top of the bulla, anchoring fibrils attached to basal lamina, half-desmosome. Basal cell degeneration and collagen degeneration also seen.

Comment

It is desirable to classify mechanobullous disease into dystrophic with scarring and non-dystrophic with non-scarring[2)3)4)].

Severin et al[5)]. classified the disease into simplex and dystrophic types.

Butterworth et al[6)]. classified them into simplex, dystrophic and lethalis.

Although etiology and pathogenesis of E.B.D are unknow, the possible causes are primary defect in vascular wall, and hereditary defect of elastic tissue in dermis[2)].

Severin et al[5)]. have implicated a vascular defect, deficient elastic tissue, and dysfunction of the hyaluronidase-hyaluronic acid system as the causes.

Blisters appeared to occur as a result of disintegration of the collagen of the upper dermis, somewhat less severe alteration extending to mid or lower dermis.

The marked degenerative changes of the dermal collagen found in epidermolysis bullosa dystrophica, which are accentuated by trauma, resulting in blister or erosion formation, suggest that abnormal collagen is present or that a collagenase-like substance may be active.

Kahl and Pearson[7)] found that most striking action of collagenase was observed, not against the dermal collagen fibrils, but against the basement membrane of the dermal-epidermal junction.

Eisen described that the level of collagenase in E.B.D. was six times greater than normal person. Lazarus[8)] found that patients with E.B.D. had antidenatured collagen antibodies.

It appears that increased local levels of collagenase are a secondary tissue reaction to chronic injury[6)].

Briggaman et al.[9)] postulated that an abse-

nce of anchoring fibrils is the primary structural defect in E.B.D. leading to disruption of the structural integrity of the structural integrity of the epidermal-dermal junction and subsequent blister formation.

There is no doubt that the major mechanobullous diseases are spread worldwide, but reliable data on incidence among various racial groups and subgroups are not available at this time[10].

The lesions usually appear from birth or in infant involving especially lower legs, hands, feet and lead to erosive and hemorrhagic bulla, secondary infection, pruritus and atrophic or hypertrophic scar formation and sometimes deformity of nails and cicatrical alopecia[3)10)11)].

Healing may be followed by milia, pigmentation, keloids. Dystrophic scarring, a hallmark of the disease, is most severe in sites of recurrent blistering and leads to a variety of functional impairments including mittenlike syndactyly of hands and feet, disfigurement of joint contractures[9)11)].

Hair and nails are commonly lost.

Frequently the mucosae of the eye, respiratory tract, esophagus, anus, and vagina are also affected. Associated congenital defects are common, especially in teeth, nails and hairs[5].

The nails may be absent or nearly so, but more often they are greatly thickened and claw-like.

Occasionally leukoplakia and squamous cell carcinoma may develop on mucous membranes in recessive type[2)12)].

In our case, he was noted to have blisters on hands and feet shortly after birth, which continued to develope new bullae and erosions at sites of trauma throughout infancy. He had taken only symptomatic treatments at local clinics.

Histopathologic findings of E.B.D.[2)6)7)8)] are dermal-epidermal separation, subepidermal vesicle, separation and decrease of collagen in granular layer, infiltration of nonspecific inflammatory cells on upper dermis, microscopic vesiculation in the collagen bundles. The blister fluid often contains fibrillar remnants and red blood cells. In the floor of the blister and in the adjacent dermal papillae, the collagen bundles appear fragmented and there may be extravasation of red blood cells accompanied by a cellular infiltration of his-,iocytes and monocytes[2].

A PAS stain is of little help in ascertaining the exact level of cleavage, since the PAS positive basement zone generally is poorly developed and the papillary dermis shows diffuse positive staining[6].

Most commonly, the primary defect, as seen by electron microscopy, between the basal lamina and anchoring fibrils in dominant dystrophic epidermolysis bullosa.

The basal lamina is found on top of the blister, probably as the result of a defect in the anchoring fibrils.

Treatment of E.B.D.[2)5)10)11)] is symptomatic as there is no satistactory method of preventing the development of blisters.

Protection of limited areas by bulky dressings or vaseline impregnated gauze is somewhat useful.

Splinting and exercise can decrease contracture, and plastic surgery may improve function.

Probably the most important effect is the control of secondary infection with local and systemic antibiotics. E.B.D. responds to some extent to corticosteroids, and locally applied corticosteroids are moderately effective in controlling activity, but too vigorous application, may result in dermal atrophy.

Antimalarial drugs and heparin have been

used in control of E.B.D. Vitamin A&D as ascorbic acid and 1-alpha tocopherol have been recommended.

In 1962, Price first repored that vitamin E given orally and topically resulted in improvement in a patient who had E.B.D[13].

Thereafter many reports said vitamin E has been shown to act as an antioxidant, to enhance the activity of some enzymes, and possibly to actact as an inducer of some microsomal enzymes[14)15)16)].

It is interesting to theorize that vitamin E inhibits this excessive collagenase, which destroying blisterproducing collagenase.

In our case of treatments, he had taken hygine whirl pool bathing weekly. Topical application of creams mixed in corticosteroid, antibiotics. systemic administration of corticosteroids, antibiotics and vitamin E.

We would continusely observe and treat the patient.

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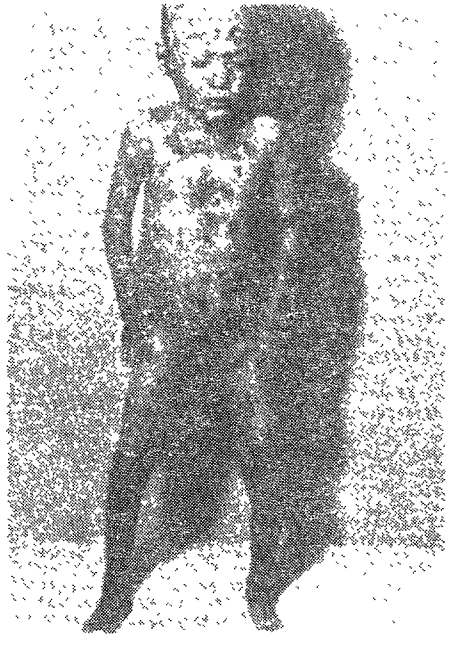

Fig. 1. Generalized erosive, hemorrhagic bullae and crusts formation on the entire body and atrophic and dystrophic changes of all extremities.

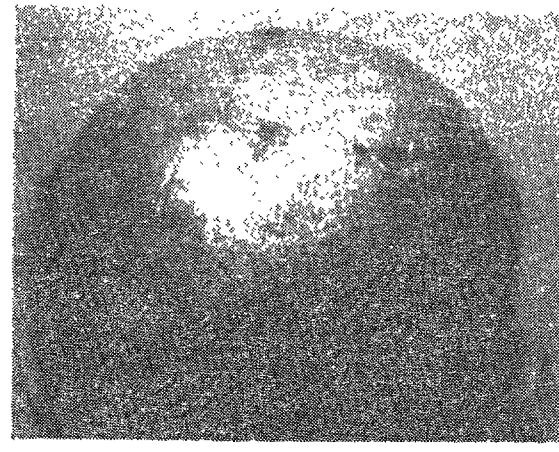

Fig. 2. Cicatrical alopecia resulted from repeated blistering on the scalp.

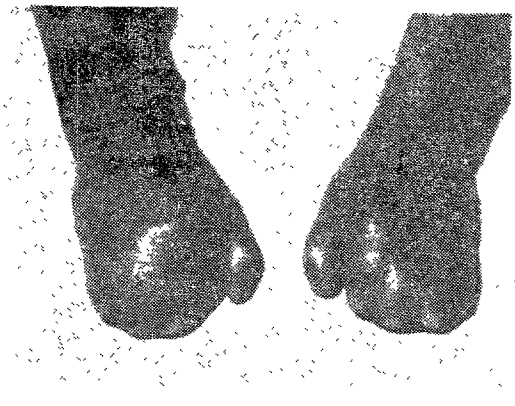

Fig. 3. Mitten-like syndactyly of the both hands, absence of total finger nails.

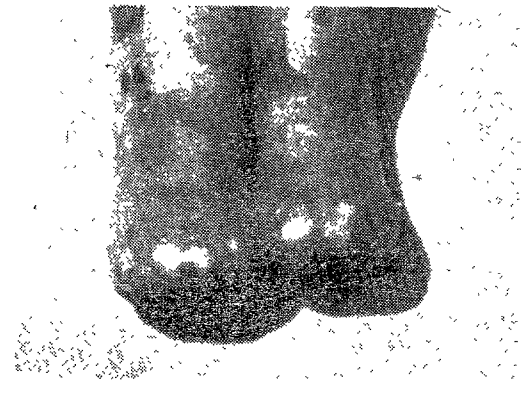

Fig. 4. Mitten-like syndactyly of the both feet, absence of total toe nails.

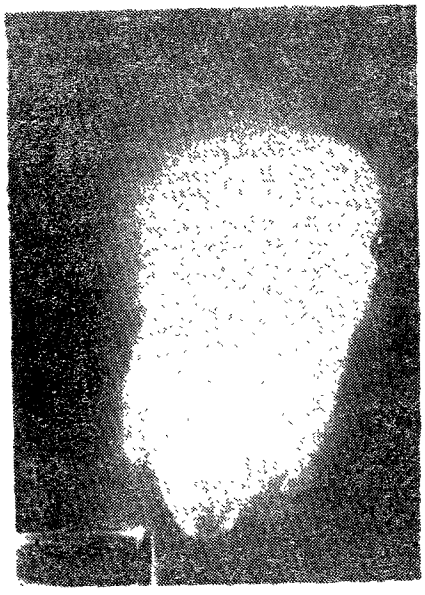

Fig. 5. Small bowel series shows fusiform dilatation of rectosigmoid colon suggesting megacolon.

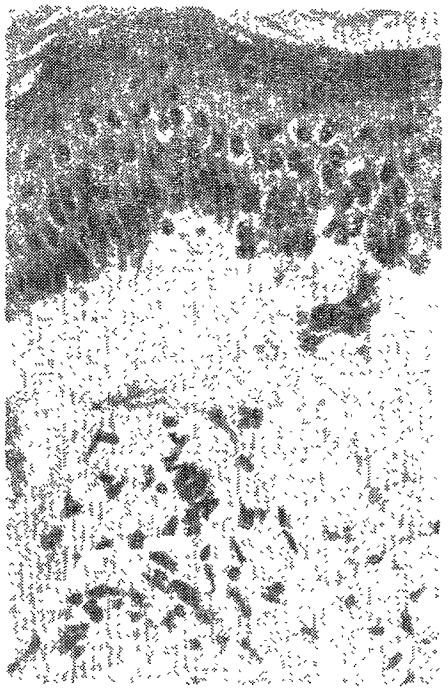

Fig. 6. Histologic examination shows subepidermal vesicles, degeneration of basal cells and dermal-epidermal separation.

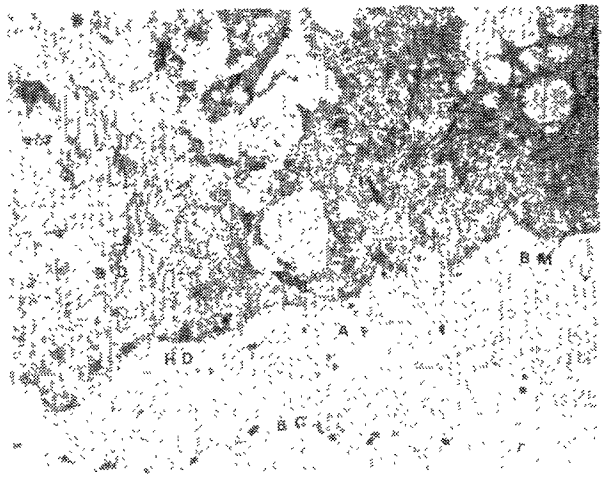

Fig. 7. There were large bulla cavity, basal lamina, half-desmosome, anchoring fibrils, vesicles. (BC; Bulla Cavity, AF; Anchoring fibrils, HD; Half-desmosome, BM; Basement Membrane, V; Vesicles, BD; Basal cell degeneration.)