

Epidermolysis Bullosa In Owo, Nigeria: A Report Of 3 Cases

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Abstract

Epidermolysis bullosa (EB) is an inheritable mechano-bullous skin disease that is very rare in Nigeria. There are difficulties with investigations and in reaching the final diagnosis in resource-limited rural areas. These cases are reported with the aim of drawing attention to the existence of EB in Nigeria and highlighting the diagnostic dilemma involved.

INTRODUCTION

Epidermolysis bullosa (EB) is a family of 23 genetic skin disorders manifested mainly by blistering which often follows mild trauma or at times occurring spontaneously. There have been a few reported cases from Nigeria. (1, 2) Since the condition is relatively uncommon, diagnosis is often missed and the prognosis unfavorable especially in rural settings where facilities for proper management may be lacking. This report is intended to alert physicians to the existence of this condition in remote geographical locations, highlight difficulties in diagnosis and management. This will aid in the future management and survival of the patients.

CASE REPORTS

CASE I

A.B. was a 4 hr-old male baby referred from a maternity centre on 19 August 1999 on account of peeling of the body noticed at birth. He was delivered at term by a booked 27 yr old primipara who was a nursery school teacher with secondary school education while the father was an artisan with tertiary education. There was no history of antenatal illness or premature rupture of membranes. The only drugs taken in pregnancy were haematinics prescribed by the nurses. Labour was not prolonged, liquor was greenish with some paste but baby cried soon after birth although he was weak. Examination showed a term neonate weighing 2.6 kg with dyspnoea and slightly increased antero-posterior chest diameter. There was widespread peeling of the skin in sheets involving the back, both arms and hands. The nails were intact. There were few blisters on the back and left upper arm. The ears were low set, and there was peeling of the skin

of the lower lip on light pressure. The total body surface area affected was estimated to be 27%. He was diagnosed to have birth asphyxia with meconium aspiration and peeling skin disease. The baby was admitted into the neonatal ward since the mother declined referral to the nearest teaching hospital for a dermatologist's review and management. The baby subsequently died within few minutes of admission.

CASE II

O.B. was a live term baby, with skin maceration at birth, brought from the labour ward to the Paediatric ward on 11 November, 2000 within 12 minutes of spontaneous vertex delivery. The mother was a 35 year old multipara with no history of any illness during pregnancy. On examination, the baby was active, pink in room air and with a birth weight of 2.2 kg. He has extensive peeling of the skin in all the limbs, bullae on the hands with some nails falling off. There was varus deformity of the legs, fore-foot abduction and spindle shaped fingers. The admission diagnoses were intra-uterine infection, staphylococcal scalded skin syndrome (SSSS), toxic epidermal necrolysis (TEN) and idiopathic drug reaction. The diagnosis was later reviewed as EB. By the fourth day, the blistering has spread to the lower limbs, anterior trunk with involvement of the soft palate and the tongue but the face was spared. There were milia scattered over the affected parts of the body but more pronounced on the legs. Fresh blisters were noticed in the central abdomen and about 35% of the body surface area was affected. Apart from mild toxic granulation of the neutrophils, blood examinations done including two blood cultures revealed no abnormality. The baby was managed with IV antibiotics, whole blood transfusion, savlon bath and silver

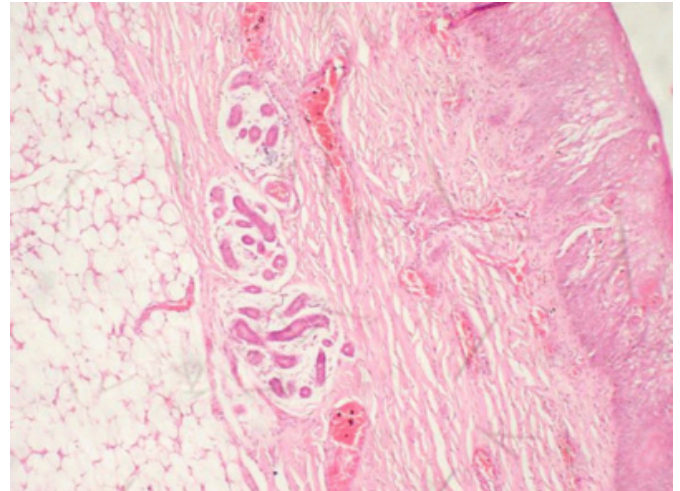
sulphadiazine cream to the denuded areas. On the twelfth day of life, the baby developed acidotic breathing, he no longer tolerated feed, had apnoeic attack and died. The parents declined post-mortem examination.

CASE III

O.F. was a live female baby sent from the labour ward on 24 September 2002 on account of desquamation of the skin on the four limbs more pronounced on the legs. She was a product of assisted breech delivery at 38 weeks. The mother was a 37 year old multipara community health worker with post secondary education while the father was a 42 year old secondary school teacher with university education. Haematinics were the only drugs taken in pregnancy. The liquor was meconium stained and Apgar scores were 6 and 8 at birth at one minute. Her birth weight was 2.1 kg, length 47 cm and OFC 35cm. The first sibling (Case II) died a few days after birth from similar condition 18 months earlier. Examination showed peeling in sheets of the skin of all limbs which was more on the legs with bullae on the hands and feet. Other systems were essentially normal, The admission diagnoses were staphylococcal scalded skin syndrome and intrauterine sepsis. She was treated with IV antibiotics and silver sulphadiazine dressing of the raw areas. By the second day, the blistering process had involved the fingers, with fresh blisters on the abdomen, lower chest, face and temporal aspects of the scalp. Blisters were noticed on the feet, soles, palate and buccal mucosa by the sixth day, yet she was sucking well. There were milia over the nose, abdomen and lower limbs. Routine blood tests, including HIV screening were negative. The diagnosis was subsequently changed to epidermolysis bullosa. Nasogastric tube feeding was commenced with 140 millilitres per kg body weight per day expressed breast milk. Two days later, she developed fever (Temp. 38.5 oC) with purulent discharge from the leg. The body surface area affected by the peeling was 38%. She was no longer tolerating feeds. She developed acidotic breathing and this was soon followed by apnoea and death. Postmortem examination did not reveal abnormalities in the internal organs. Skin biopsy sections confirmed epidermolysis bullosa. The epidermis was focally widened with severe vacuolisation and degeneration of cells of the mid epidermis. There was wide separation and loss of cohesion of the squamous epithelial cells. The dermis showed congested vascular channels and some degree of collagenisation (Figure 1).

Figure 1

Figure 1: Histology of the skin biopsy in EB: There is severe vacuolisation and degeneration of cells in the mid epidermis with wide separation and loss of cohesion of the squamous epithelial cells. Note the congested vascular channels and some degree of collagenisation in the dermis.



DISCUSSION

EB is a heterogeneous group of genodermatoses, characterised by fragility and blistering of the skin and mucosa that usually result from minor trauma. They are usually inherited in an autosomal dominant fashion and comprise of severe subtypes with lethal outcome in the first years of life as well as milder subtypes with localised blistering or minimal symptoms confined exclusively to nail or teeth abnormalities. (3) The commonest type worldwide is epidermolysis bullosa simplex (EBS) which accounted for over 90% of cases while junctional (JEB) and dystrophic (DEB) types are less than 10% and hemidesmosomal EB constituting much less than 1%. (4) The EBS has different subtypes. In a recent study in Scotland undertaken as part of the U.K. National Epidermolysis Bullosa Register in which clinical information on 130 (77%) of the 168 known Scottish epidermolysis bullosa simplex (EBS) sufferers was obtained, 3 subtypes of EBS consisting of Dowling-Meara (EBS-DM), Weber-Cockayne (EBS-WC) and Kobner (EBS-Kb) were recognized and they were seen in 5%, 42% and 53% of patients, respectively. The study suggested that EBS-Kb probably accounted for 95% of EBS as EBS-WC could be a milder variant of EBS-Kb rather than a separate disorder. (4)

EB has been known for over a century especially among Caucasians (3) but uncommon in Nigeria. Its apparent rarity in Nigeria led to the inappropriate diagnostic tags given to the three cases seen by us. Furthermore, limitation of diagnostic facilities made it impossible for us to actually

group any of these cases into any clinical type. However, since all the 3 cases seen by us died within a few days after birth, the outcome might suggest that they were of the severe subtypes which are known to have lethal outcome in the first years of life.⁽³⁾

Electron microscopic examination and immunofluorescent staining of fresh full thickness skin specimen taken from both lesional and perilesional areas, preferably freshly induced blisters, supported by DNA mutational analysis is still the gold standard for classifying epidermolysis bullosa, although it is relatively expensive, time consuming, and not readily available. ⁽⁶⁾ The use of second trimester fetal skin biopsy or the much earlier chorionic villus sampling for cytogenetic analysis ⁽⁷⁾ is invaluable in the prenatal diagnosis of EB. Unfortunately there was no information in the antenatal history suggesting easy bruisability or blistering in previous sibling or any known family member to warrant anticipatory management. Postmortem formalin-preserved skin specimen is an alternate diagnostic method in resource limited setting such as ours although the characterization of the disease may be poor. This was our last resort and had been very helpful in diagnosis and in counseling the affected couples.

Some cases of EB are known to be associated with extra-cutaneous anomalies including pyloric atresia, obstructive uropathy ^(5,8) muscular dystrophy ⁽⁹⁾, dilated cardiomyopathy ^(10,11), renal amyloidosis ⁽¹¹⁾ or osteoporosis ⁽¹²⁾, making EB a multi-systemic disease. Efforts therefore should be made to investigate the patient (including postmortem) for any associated anomaly. History of polyhydramnios with feeding difficulties, abdominal distention, non-bilious vomiting and large distended stomach on plain abdominal radiograph can suggest pyloric atresia while respiratory distress with significant cardiomegaly on chest radiogram, electrocardiography and echocardiography in an older child with blistering skin may indicate EB with dilated cardiomyopathy.

Management of EB is mainly supportive but may be daunting in a rural environment of a developing country. With extensive loss of protective skin in a neonate, infection is a major complication. Appropriate use of antibiotic is therefore essential. Dehydration with metabolic acidosis is another complication hence adequate daily maintenance of fluid should be ensured with additional given based on blood and urine osmolarity if these are measurable. Hypothermia is

another major complication in these cases. This could however be pre-empted by nursing the babies in warm cots. All these complications could have contributed either singly or in combination to the death of our patients. For instance the third patient had fever terminally with purulent discharge from the leg ulcer, dehydration and infection might have contributed to her demise.

Relief of pain is inevitable and its treatment should be considered to reduce the stress of the affected patients. Being a hereditary disorder, management is incomplete without affording the family genetic counseling. Adequacy of this requires accurate diagnosis of the disease utilising all investigative modalities including gene mapping, not only in the patient but also in other members of the family. The social counseling and support given to these couples so far had been extremely helpful in maintaining matrimonial harmony.

EB is very rare in Nigeria and poses a diagnostic challenge to attending clinicians. There could be difficulties with its investigations and diagnosis in resource-limited rural areas. However permission for histological examination even if postmortem should still be sort for in order to resolve the clue. Clinicians should also have a high index of suspicion in cases where there are blistering of the skin especially in the paediatric age group.

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