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## CASE REPORT

### Disseminated Tuberculosis in a Nigerian Adolescent with Linear IgA Bullous Dermatositis: A Case Report and Review of Literature

*Tuberculose Disséminée chez un Adolescent Nigérian Présentant une Dermatose Bulleuse à IgA Linéaire : Rapport de Cas et Revue de la Littérature*

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#### ABSTRACT

Linear IgA bullous dermatosis (LABD) is an auto-immune disease affecting young children and adults, characterized by the linear deposition of IgA at the basement membrane zone with resultant complement activation and a cascade of immune reactions. There is a loss of adhesion at the dermo-epidermal junction and subsequent blister formation. It is a rare disease that has a good prognosis with adequate therapy. However, the underlying depressed immunity associated with the disease may expose them to such infections as tuberculosis. We report the case of an 11-years-old Nigerian female adolescent with LABD, diagnosed at the age of four years but defaulted on follow-up, who developed disseminated tuberculosis (pulmonary, lymph nodes, abdominal and pericardial effusion) seven years after the appearance of the initial blistering skin lesions. She commenced anti-tuberculosis drugs, steroids, and a tube pericardiostomy for the pericardial effusion. Dapsone was initiated for the LABD during the continuation phase of anti-tuberculosis therapy, with subsequent disappearance of the skin rash within two weeks. **WAJM 2022; 39(6): 646–650.**

**Keywords:** Linear IgA, bullous dermatosis, disseminated Tuberculosis, adolescent.

#### RÉSUMÉ

La dermatose bulleuse linéaire à IgA (DLB) est une maladie auto-immune affectant les jeunes enfants et les adultes, caractérisée par le dépôt linéaire d'IgA dans la zone de la membrane basale, avec l'activation du complément qui en résulte et une cascade de réactions immunitaires. Il y a une perte d'adhérence à la jonction dermo-épidermique et une formation ultérieure de vésicules. C'est une maladie rare qui a un bon pronostic avec un traitement adéquat. Cependant, l'immunité déprimée sous-jacente associée à la maladie peut les exposer à des infections telles que la tuberculose. Nous rapportons le cas d'une adolescente nigériane de 11 ans atteinte de la LABD, diagnostiquée à l'âge de quatre ans mais en défaut de suivi, qui a développé une tuberculose disséminée (pulmonaire, ganglions lymphatiques, épanchement abdominal et péricardique) sept ans après l'apparition des lésions cutanées vésiculeuses initiales. Elle a commencé à recevoir des médicaments antituberculeux, des stéroïdes et une péricardiostomie par sonde pour l'épanchement péricardique. La dapsone a été initiée pour la DLB pendant la phase de continuation du traitement antituberculeux, avec une disparition de l'éruption cutanée en deux semaines. **WAJM 2022; 39(6): 646–650.**

**Mots clés:** IgA linéaire, dermatose bulleuse, tuberculose disséminée, adolescent.

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## INTRODUCTION

Linear IgA dermatosis is a chronic auto-immune, subepidermal blistering disease due to linear deposition of immunoglobulin A (IgA) at the dermo-epidermal junction of the skin.<sup>1</sup> It characteristically presents as clear or hemorrhagic vesicles or bullae that arise on normal skin.<sup>2</sup> The age of onset of the lesions is from six months to ten years,<sup>3,4</sup> with a slight male preponderance (male to female ratio 1.2:1).<sup>5</sup> There have been reports (mostly in adults) of association with infections, connective tissue disorders, drugs, malignancies, hypothyroidism, and inflammatory bowel diseases.<sup>3</sup> Worldwide, the epidemiology of linear IgA disease in childhood varies. The incidence rate ranges between 0.2 and 2.3 cases per million, with a slight male preponderance (2:1).<sup>6,7</sup> Aboobaker *et al* reported 25 new cases in three years in South Africa.<sup>8</sup>

The pathogenesis causing the loss of self-tolerance to target antigens at the lamina lucida, the sublamina densa, or both remains unknown.<sup>1,9</sup> However, there is evidence of humoral and cellular immune response involvement together with activation of complements, proteolytic enzyme release and inflammatory cells recruitment suggesting the auto-immune basis.<sup>9,10</sup> Linear IgA bullous dermatosis (LABD) results from IgA auto-antibodies directed against a proteolytic fragment of bullous pemphigoid (BP) 180 antigen, a 97 or 120kD type II glycoprotein, alongside other components of dermo-epidermal junction.<sup>9,10</sup> Indeed, the BP180 protein, typically the non-collagenous 16A region, is the common target of cellular and humoral immune responses in some linear IgA dermatosis patients.<sup>10</sup> A hypothesis of the pathogenesis is a cytokine-stimulated production of IL8 and GM-CSF by keratinocytes and expression of endothelial cell adhesion molecules that leads to chemotaxis of neutrophils at the site of IgA binding.<sup>1</sup> Subsequently, neutrophils bind to IgA using its Fc receptors and release proteolytic enzymes from the proteolytic fragment of the BP180 (collagenase and elastase) which are likely to be responsible for basement membrane zone separation at the lamina lucida.<sup>1</sup> Consequently, there

is blister formation at this zone. Immunodeficiency, particularly those affecting IgA and IgG activity, may also play a central role in increasing the predisposition of patients with this disorder to infections.<sup>1</sup> The role of IgA as a first-line defense in preventing bacterial and virus adhesion to epithelial cells is likely affected and can lead to infections, particularly respiratory infections.

Typically, the bullae or vesicles appear on the thighs, lower abdomen, genital areas, buttocks and face, particularly in young children with no specific reasons identified for these areas of preference. The bullae are either discrete or arranged in a herpetiform pattern called the cluster of jewels sign. Sometimes, the bullae occur at the edge of the annular lesion giving “a string of pearl” arrangement.<sup>6</sup> Lesions are often itchy and burning, and mucosal involvement may be noticed. This disorder has also been reported in association with the use of some drugs viz vancomycin, amiodarone, depot sulfonamide, cycloserine, and immunomodulators<sup>11,12</sup> which may indicate a causal relationship. This relationship would have been considered in the index subject if LABD occurred after the commencement of anti-tuberculosis therapy in the child.

Diagnosis of LABD is by histopathology for evidence of subepidermal blister formation with neutrophils predominance along the dermo-epidermal junction or basement membrane zone.<sup>5</sup> Direct immunofluorescence studies showing a linear and homogenous IgA deposition along the basement membrane zone is the gold standard as it rules out its close differentials of dermatitis herpetiformis and bullous pemphigoid diseases.<sup>2</sup>

Most children will require treatment to reduce the severity and duration of the bullous eruptions. Generally, patients with LABD respond well to dapsone treatment. Other useful drugs include prednisolone, mycophenolate mofetil, tetracycline, niacinamide, intravenous immunoglobulin and rituximab.<sup>1,13</sup> Dapsone at a daily dose of 100–150mg suffices in clearing skin lesions, with rapid response usually within three days of treatment.<sup>14</sup> There may be a need to

add other medications depending on the severity of the disease, particularly prednisolone. The steroid decreases inflammation, stabilizes lysosomal membranes and suppresses neutrophils, lymphocytes and antibody production.<sup>15</sup> Once a good response is achieved, the dapsone dosing may be reduced to a maintenance level of 50mg on alternate days.<sup>14</sup> Remission usually occurs within two to four years, although it may persist until puberty.<sup>16</sup> Side effects of dapsone include hemolysis, agranulocytosis, methaemoglobinaemia and peripheral neuropathy. These side effects must be closely monitored following its administration to children.<sup>5</sup> A drug-induced disorder can be managed merely by withdrawing the offending agent.<sup>17</sup>

We report a child with possible linear IgA dermatosis who had disseminated tuberculosis more than six years after initial blistering skin lesions first appeared.

## CASE REPORT

An 11-year-old female presented, in 2020, to the Emergency Paediatrics Unit of Unilorin Teaching Hospital with three months history of painless, progressively increasing bilateral neck swelling, a month history of cough, and three weeks history of progressive abdominal swelling. The neck swelling started discharging fluid three weeks before presentation. The cough was productive of whitish sputum but no haemoptysis. She had an associated history of significant weight loss, low fever, drenching night sweat. In the preceding two weeks before admission, she had developed dyspnoea, orthopnoea, easy fatigability and paroxysmal nocturnal dyspnea. There was no history of contact with an adult having chronic cough or weight loss.

She had a previous history of itchy, bullous skin rash, which has been recurrent since 2013 at four years (Figure 1a). She had been diagnosed and treated as a Linear IgA bullous disease case but defaulted from the clinic after the initial rapid improvement. A similar rash developed on admission, probably because the treatment causes suppression and does not cure the LABD. She had no history of drug administration before the onset of rash

at first presentation. There was no history (diarrhoea alternating with constipation, abdominal cramps and pain, bloody stool) suggestive of inflammatory bowel disease. Before the recent presentation, she had used antibiotics procured across the counter and herbal concoctions with no resolution of symptoms. There was no family history of a similar disease.

At presentation, she was acute on chronically ill-looking, small for age, weight was 20 Kg (58% of expected) and height of 116 cm (stunted), had bilateral neck swelling with a bull neck appearance, not pale, anicteric, and the axillary temperature was 38.2°C. She had generalized lymphadenopathy (bilateral, painless, matted submandibular lymph nodes measuring 8cm x 6cm, with discharging sinus on the left side; supraclavicular lymph nodes measuring 4cm x 2cm bilaterally; and axillary lymph nodes measuring 4cm x 2cm bilaterally), and bilateral pitting pedal oedema up to the knees.

Respiratory system examination revealed intercostal recessions, respiratory rate was 92 breaths/minute, haemoglobin oxygen saturation (SpO<sub>2</sub>) was 68% in room air and 82% on 4L/min of oxygen, and the trachea did not deviate. On the left hemithorax anteriorly, tactile fremitus was reduced, percussion notes were dull, and the breath sounds were reduced. She had tachycardia (PR-120bpm), diffuse apex beat, and distant first and second heart sounds with S3 gallop rhythm. The abdomen was uniformly distended, with ascites demonstrable by fluid thrill. She had a widely distributed blistering rash with small vesicles all over the body, including the perioral and periorbital areas, sparing the palms, soles and mucosa. Healing annular lesions were seen around the chest with a jewel-like appearance. There was post-inflammatory skin hypo- and hyper-pigmentation from previous bullous eruptions. About two weeks into admission, new eruptions were multiple, tense bullae with small vesicles clustered around the thighs and lower abdomen were noted (Figure 1b). Other systemic findings were non-contributory. An initial assessment of LABD with Disseminated Tuberculosis (pulmonary, pericarditis with effusion, abdominal and lymphadenitis) to exclude lymphoma was made.

denitis) to exclude lymphoma was made.

Chest X-ray showed cardiomegaly with patchy lung infiltrates on the left (Figure 2), echocardiography revealed massive pericardial effusion with markedly reduced left ventricular systolic dysfunction (LVEF- 30%). An emergency pericardiostomy tube was inserted, and she commenced furosemide, spironolactone and hydrochlorothiazide (for heart failure). The SpO<sub>2</sub> improved to 94% on 2L/min within 24 hours of the tube

insertion, and the ascitic fluid and pedal oedema resolved within 72 hours of tube insertion.

Sputum GeneXpert was positive for tuberculosis (rifampicin sensitive) and lymph node histology revealed giant cells, caseous necrosis and lymphocytes (Figure 3). A biochemical study of the pericardial fluid revealed an exudative effusion. The intensive phase of anti-tuberculous therapy with rifampicin, isoniazid, pyrazinamide and ethambutol



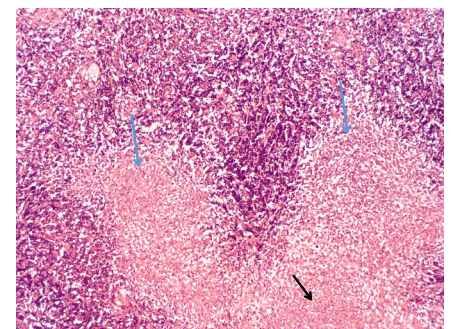
**Fig.1a: The Bullous Eruption at Age Four Years.**



**Fig.1b: The Child at 11 years with a Pericardiostomy tube *in situ*, and the new Bullous Eruptions.**

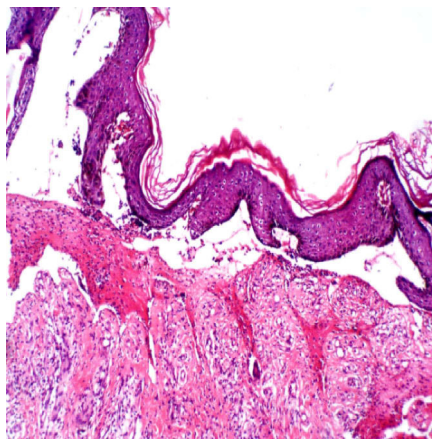


**Fig. 2: Chest X-ray showing Massive Cardiomegaly and Bilateral Patchy Infiltrates.**



**Fig. 3: Section shows lymph node tissue with distortion of the architecture by multiple foci of granulomas composed of epithelioid macrophages surrounded by an outer rim of lymphoid cells and necrotic cores. Few multinucleated giant cells are seen at the periphery. Haematoxylin-eosin stain x100 (Blue arrows granulomas, black arrow shows a central necrotic core).**

was started in addition to oral prednisolone on day 12 post-admission. Skin biopsy of a bullous rash on the thigh showed subepidermal blisters with moderate neutrophils seen scattered at the dermo-epidermal junction and in the fibrin material at the floor of the blister (Figure 4). Other areas show a perivascular distribution of lymphocytic cells. Direct immunofluorescence (DIF) was not done due to its unavailability in our centre. Serological testings for HBsAg, anti-HCV and HIV were negative. Haematological parameters were normal, and stool analysis was normal.



**Fig. 4: Subepidermal Blisters with Moderate Neutrophils scattered at the Dermoepidermal Junction.**

The tube pericardiostomy drained about two litres of serosanguinous fluid over six weeks. She was on rifampicin and isoniazid for the continuation phase of tuberculosis therapy while prednisolone has been discontinued. Dapsone was commenced for the treatment of LABD during the continuation phase of anti-tuberculous drugs. Lymph nodes did not significantly reduce in size until 12 weeks of therapy. The rash cleared completely within two weeks of commencement of dapsone. Written consent and assent were obtained from the mother and child, respectively prior to reporting the case.

## DISCUSSION

The mean age at first presentation of the index case at four years old is similar to the reported mean age of presentation from Africa and Kuwait.<sup>18,19</sup> The common

skin disorders of childhood in Africans are usually atopic dermatitis, eczema and infections, such as scabies and candidiasis.<sup>20,21</sup> Although immunofluorescence was not accessible to confirm the diagnosis, the diagnosis was based on the exclusion of the two close differentials of chronic blistering in childhood. Bullous pemphigoid, which is very rare in children and rarely occurs before age eight years, and dermatitis herpetiformis associated with gluten hypersensitivity but extremely rare in Nigerian children. This patient had no gastrointestinal symptoms and a normal finding on stool examination. Toxic epidermal necrolysis (TEN) is also a diagnostic consideration. It is also an immune-related disorder characterized by widespread erythema and bullous lesions with the detachment of the epidermis and mucous membranes.<sup>22</sup> However, TEN is an acute life-threatening hypersensitivity disorder following exposure to drugs and increasing severity following repeated exposure.<sup>1</sup> Moreover, the jewel-like skin lesion appearance in LABD is absent in TEN. The patient was first seen at the age of four years and treated with dapsone, to which she responded swiftly within two weeks of commencement though, after that, she was lost to follow up. In a resource-poor setting like Nigeria, the diagnosis was premised on the presence of the characteristic itchy vesiculobullous rash on otherwise normal skin, the histopathologic finding of subepidermal blisters with neutrophilic infiltration, and prompt response to dapsone treatment.

More than six years after the initial presentation, she presented with disseminated tuberculosis. The cases of LABD previously reported were in apparently healthy children.<sup>14,23,24</sup> Although there are few reports of LABD complicated by pulmonary tuberculosis in an adult,<sup>25,26</sup> there was a paucity of reports of LABD with tuberculosis in children. Disseminated tuberculosis was the reason for returning to our centre after defaulting from follow up. The myriad of immunologic abnormalities in LABD, especially for IgA, are vital in mucosal protection by preventing the adhesion of bacteria and viruses to the mucosa. However, in tuberculosis, the immunity

is T-cell mediated, with the production of T-killer cells, while it appears that LABD is mediated by IgA from B cells suggesting a coincident occurrence with tuberculosis rather than a complication. Furthermore, this patient had been diagnosed seven years earlier and had a dramatic response to dapsone therapy as expected for LABD. Hence, the sequence of events further supports a coincident occurrence and not a causal relationship between the two disease entities.

The child was treated for Disseminated TB with standard drugs in line with the National guidelines. However, there appeared to be a slow response during the intensive phase, while the pericardial effusion resolved after about six weeks of drug commencement. There was no significant regression in the size of the peripheral enlarged lymph nodes. However, within two weeks of commencement of dapsone for the treatment of LABD, there appeared to be a faster regression of the lymph nodes. This patient had prednisolone mainly for the pericarditis with massive effusion and not the LABD.

## CONCLUSION

Linear IgA dermatosis is an autoimmune subepidermal chronic blistering disease that could occur in children. There is a need for close monitoring of children diagnosed with LABD as the attendant immunodeficiency of the disease may pose a risk for secondary infections. In TB endemic areas, TB is a life-threatening infection that may occur in patients with LABD.

## REFERENCES

- 1 Zone JJ. Clinical spectrum, pathogenesis and treatment of linear IgA bullous dermatosis. *J Dermatol.* 2001; **28**: 651–653.
- 2 Chaudhari S, Mobini N. Linear IgA bullous dermatosis: A rare clinico-pathologic entity with an unusual presentation. *J Clin Aesthet Dermatol.* 2015; **8**: 43–46.
- 3 De Simone C, Guerriero C, Pellicano R. Linear IgA disease and ulcerative colitis. *Eur J Dermatol.* 1998; **8**: 48–50.
- 4 Wojnarowska F, Marsden RA, Bhogal B, Black MM. Chronic bullous disease of childhood, childhood cicatricial pemphigoid, and linear IgA disease of adults: A comparative study demon-

- trating clinical and immunopathologic overlap. *J Am Acad Dermatol.* 1988; **19**: 792–805.
- 5 Genovese G, Venegoni L, Fanoni D, Muratori S, Berti E, Marzano AV. Linear IgA bullous dermatosis in adults and children: A clinical and immunopathological study of 38 patients. *Orphanet J Rare Dis.* 2019; **14**: 115.
  - 6 Fortuna G, Marinkovich MP. Linear immunoglobulin A bullous dermatosis. *Clin Dermatol.* 2012; **30**: 38–50.
  - 7 Bennett CN, Fong M, Yadlapati S, Rosario-Collazo JA. Linear IGA dermatosis. StatPearls [Internet]. 2021.
  - 8 Aboobaker J, Wojnarowska FT, Bhogal B, Black MM. Chronic bullous dermatosis of childhood – clinical and immunological features seen in African patients. *Clin Exp Dermatol.* 1991; **16**: 160–164.
  - 9 Hernandez M, Calebotta A, Saenz M. Linear IgA bullous dermatosis: An unusual presentation. *Pediatr Dermatol.* 2017; **34**: 184–185.
  - 10 Lin MS, Fu CL, Olague-Marchan M, Hacker MK, Zillikens D, Giudice GJ, *et al.* Auto-immune responses in patients with linear igA bullous dermatosis: Both autoantibodies and T lymphocytes recognize the NC16A domain of the BP180 molecule. *Clin Immunol.* 2002; **102**: 310–319.
  - 11 Garel B, Ingen-Housz-Oro S, Afriat D, Prost-Squarcioni C, Tétart F, Bensaid B, *et al.* Drug-induced linear immunoglobulin A bullous dermatosis: A French retrospective pharmacovigilance study of 69 cases. *Br J Clin Pharmacol.* 2019; **85**: 570–579.
  - 12 Waldman MA, Black DR, Callen JP. Vancomycin-induced linear IgA bullous disease presenting as toxic epidermal necrolysis. *Clin Exp Dermatol.* 2004; **29**: 633–636.
  - 13 Khanna N, Pandhi RK, Gupta S, Singh MK. Response of chronic bullous dermatosis of childhood to a combination of dapsone and nicotinamide. *J Eur Acad Dermatol Venereol.* 2001; **15**: 633–636.
  - 14 Mijinyawa M, Yusuf S, Mohammed A, Nalado A. Diagnosing linear immunoglobulin – A dermatosis of childhood in a resource-constrained area: Case report and review of literature. *Sahel Med J.* 2013; **16**: 124.
  - 15 Farley-Li J, Mancini AJ. Treatment of linear IgA bullous dermatosis of childhood with mycophenolate mofetil. *Arch Dermatol.* 2003; **139**: 1121–1124.
  - 16 Fernandes KDAP, Galvis KH, Gomes ACDMS, Nogueira OM, Felix PAO, Vargas TJDS. Linear IgA and IgG bullous dermatosis. *An Bras Dermatol.* 2016; **91**: 32–34.
  - 17 Selvaraj PK, Khasawneh FA. Linear IgA bullous dermatosis: A rare side effect of vancomycin. *Ann Saudi Med.* 2013; **33**: 397–399.
  - 18 Kharfi M, Khaled A, Karaa A, Zaraa I, Fazaa B, Kamoun MR. Linear IgA bullous dermatosis: the more frequent bullous dermatosis of children. *Dermatol Online J.* 2010; **16**: 2.
  - 19 Monia K, Aida K, Amel K, Ines Z, Becima F, Ridha KM. Linear IgA bullous dermatosis in Tunisian children: 31 cases. *Indian J Dermatol.* 2011; **56**: 153–159.
  - 20 Katibi OS, Dlova NC, Chateau AV, Mosam A. Prevalence of paediatric skin conditions at a dermatology clinic in Kwa-Zulu-Natal Province over a 3-month period. *SAJCH.* 2016; **10**: 1–5.
  - 21 Ogunbiyi A, Daramola OT, Alese OO. Prevalence of skin diseases in Ibadan, Nigeria. *Int J Dermatol.* 2004; **43**: 31–36.
  - 22 Downey A, Jackson C, Harun N, Cooper A. Toxic epidermal necrolysis: review of pathogenesis and management. *J Am Acad Dermatol.* 2012; **66**: 995–1003.
  - 23 Varo R, Fernandez-Luis S, Siteo A, Bassat Q. Suspected case of chronic bullous disease of childhood in a rural area of Southern Mozambique. *BMJ Case Reports.* 2017; 10.1136/bcr-2016-218315.
  - 24 Monia K, Aida K, Amel K, Ines Z, Becima F, Ridha KM. Linear IgA bullous dermatosis in Tunisian children: 31 cases. *Indian J Dermatol.* 2011; **56**: 153–159. doi: 10.4103/0019-5154.80406. PMID: 21716539; PMCID: PMC3108513.
  - 25 Morice C, Monsela G, Lafaurie M, Battistella M, Manciet JR, *et al.* Linear IgA bullous dermatosis complicating multi-organ tuberculosis at early stage of treatment. *Br J Dermatol.* 2013; **169**: 210–211.
  - 26 Pujol C, Alegre VA, Guillen C, Navarro R, Ruez R, Lidon J. Linear IgA dermatosis and pulmonary tuberculosis in an adult. Apropos of a case. *Med Cutan Ibero Lat Am.* 1988; **16**: 39–42.