A SPORADIC CASE OF LOFGREN SYNDROME IN A 32-YEAR-OLD NIGERIAN MAN, A RARE FINDING IN SUB-SAHARAN AFRICA: A CASE REPORT

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ABSTRACT Introduction: Lofgren Syndrome (LS), a phenotype of Sarcoidosis, is an acute inflammatory disease with pulmonary and extrapulmonary presentations. It is rarely seen in West Africans. Case summary: The index patient presented with fever, pain and swelling of the wrist and ankle joints bilaterally, subcutaneous swellings (erythema nodosum) over the shin and extensor surfaces of the forearms and radiographic evidence of bilateral hilar adenopathy. Laboratory results showed elevated serum calcium, Angiotensin-converting enzyme (ACE), Aspartate transaminase (AST), Alanine transaminase (ALT), Erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP). Treatment: The patient was placed on a non-steroidal anti-inflammatory drug (oral diclofenac) and oral corticosteroid (methylprednisolone) with significant pain relief within the first week of commencement of medications. Oral diclofenac was discontinued after 1 week, and oral methylprednisolone was tailed down after three weeks. Conclusion: Though rare amongst Sub-Saharan Africans, documented cases of Lofgren syndrome are increasing in number. The clinician practicing in sub-Saharan Africa should be open-minded and broaden his differential to include Lofgren syndrome, especially typical features are present.

KEYWORDS Erythema nodosum, Lofgren’s syndrome, Lupus pernio, Sarcoidosis

Introduction

Sarcoidosis is an inflammatory disease affecting multiple organ systems in the body. It is characterized by T-lymphocyte infiltration, granuloma formation and distortion of the micro-architecture of the organ involved. [1] The exact aetiology of sarcoidosis is not known. It was first observed in the 19th century by three independent scientists: Jonathan Hutchinson, who termed it ‘Mortimer’s Malady’, Ernest Besnier who called it ‘Lu-
of incidence being between 20 – 40 years. [1] In the USA, it is found to be more common in blacks than in whites. [8] There are relatively few studies on the clinical entity, Lofgren syndrome. [2] However, Grunewald and Eklund, in a study of 301 patients, found a fairly equal distribution between men and women (45 and 55 %), respectively.[9] Lofgren syndrome is frequently seen amongst Northern Europeans but very rarely amongst Africans. [1] It is rarely documented in West Africans despite some reports of Sarcoidosis in the region. There has been, at the time of this report, only one documented case of Lofgren syndrome in Nigeria. [10]

Case summary

A 32-year-old administrative executive came to the outpatient department complaining of fever, malaise, joint pains and nodular eruptions involving the lower limbs and arms, which started three weeks earlier. The fever started after attending a weekend party and consuming alcoholic beverages. It was intermittent with chill and no rigour. The joint pain began with the ankle joints with a severity of 8 on a scale of 1-10 and progressed over time to involve other joints – the knees, the elbows and shoulders – though to a less painful scale. The small joints of the hand were not involved.

The patient’s condition worsened significantly in the few days before presentation; the ankle joints were swollen and tender, and he could barely move around. This joint pain was accompanied by fatigue. He had no history of cough, breathlessness or any other respiratory symptoms. He is sexually active, admits to having unprotected sex, but with a faithful partner. He gave no history of dysuria and has never had penile discharge in his entire life. He also denies having passed loose stool prior to or during his illness. There is no family history of rheumatoid arthritis or any other connective tissue disease.

He was admitted to the outpatient department (OPD) of the hospital as his joint pain was considered very disabling. During the initial review, he was noted to have conjunctival injection; the temperature was 37.9 °C and his Blood pressure was 158/94mmHg. His ankle joints were swollen and markedly tender. He had multiple tender nodular eruptions over the shin and extensor surface of the forearm. There were no oral or genital ulcers.

He was started on low dose Ramipril, 5mg daily, by the admitting physician because of his suboptimal blood pressure. Samples were taken for investigations. The results of his complete blood count, blood chemistry, serum angiotensin-converting enzyme (ACE), erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP) are summarized in the table 1. The results showed elevated serum calcium, Angiotensin-converting enzyme, as well as elevated ESR and CRP. The plain chest radiograph done on admission showed bilateral hilar adenopathy (Figure 1), and the chest computerized tomography scan done subsequently confirmed this. (Figure 2)

He was started on a short course of oral corticosteroids (16mg of methylprednisolone daily for one week, then 8mg daily for two weeks) with significant improvement in a week near-complete resolution of symptoms after three weeks. He was seen a month after the onset of symptoms in the outpatient clinic for a complete resolution of symptoms.

Discussion

Sarcoidosis amongst Nigerians and West Africans remain a condition with limited information in the literature despite the high prevalence of Sarcoidosis amongst Afro-Americans. [11] This is the second case of Lofgren syndrome to be reported in Nigeria.

Diagnosing sarcoidosis is quite complex as there is no single specific definitive investigation that clinches the diagnosis. It requires clinical and radiological correlation, exclusion of alternative diagnosis, and sometimes histological findings of non-caseating granuloma. [12] There are, however, specific clinical scenarios where a presumptive diagnosis can be made with radiological diagnosis and biopsy is not considered necessary; Lofgren syndrome is one such case. [5, 13] Diagnosis of Lofgren’s syndrome is quite straightforward when the characteristic triad (Bilateral hilar lymphadenopathy, Polyarthritis, and Erythema nodosum) are present. [14] All these are seen in this index case.

If the disease deviates from the classic course or fails to resolve within the expected time, a definitive diagnosis with biopsy may be needed. [12] In this case, the joint pain improved remarkably within three months of oral corticosteroid use with no need for biopsy. Bilateral hilar lymphadenopathy is almost invariably present in patients with acute sarcoid arthritis; fever and erythema nodosum are present in 90% and 60% of the cases, respectively. [15] In this patient, the fever, and multiple, tender subcutaneous nodules, all of which disappeared within three weeks of the commencement of oral corticosteroid. Diagnosis of Lofgren’s syndrome is made based on classical clinical manifes-
Table 1 Shows the laboratory parameters of the study subject.

| TEST                      | AT PRESENTATION | 2 WEEKS LATER | REFERENCE RANGE          |
|---------------------------|-----------------|---------------|--------------------------|
| **Serum Electrolytes**    |                 |               |                          |
| Na⁺                       | 137mmol/L       |               | 135-145mmol/L            |
| K⁺                        | 3.8mmol/L       |               | 3.5-5mmol/L              |
| Cl⁻                       | 100mmol/L       |               | 95-110mmol/L             |
| HCO₃⁻                     | 24mmol/L        |               | 20-31mmol/L              |
| Urea                      | 6.5mmol/L       |               | 1.7-9.1mmol/L            |
| Creatinine                | 98mmol/L        |               | 53-115mmol/L             |
| Calcium                   | 3.5mmol/L       |               | 2.10-2.55mmol/L          |
| **Full Blood Count**      |                 |               |                          |
| WBC                       | 8,350/mm³       |               | 4,000-11,000/mm³         |
| HB                        | 13.9g/dl        |               | 12-16g/dl                |
| PCV                       | 39%             |               | 36-46%                   |
| Platelet count            | 267,000/mm³     |               | 150,000-400,000/mm³      |
| **Liver function tests**  |                 |               |                          |
| AST                       | 42 IU/L         |               | <40IU/L                  |
| ALT                       | 46 IU/L         |               | <40IU/L                  |
| ALP                       | 250 IU/L        |               | 97-298IU/L               |
| GGT                       | 110 IU/L        |               | 7-50IU/L                 |
| Total bilirubin           | 10.1 micromol/L |               | 1.7-17.1 micromol/L      |
| Conjugated bilirubin      | 5.0 micromol/L  |               | 0-6.8 micromol/L         |
| Total protein             | 9.6g/dl         |               | 6.0-8.0g/dl              |
| Albumin                   | 4.4g/dl         |               | 3.5-5.2g/dl              |
| Globulin                  | 5.1g/dl         |               | 2-4g/dl                  |
| ESR                       | 99mm/hr         | 80mm/hr       | <18mm/hr                 |
| CRP                       | 52.5mg/L        | 45mg/L        | <3.0mg/dl                |
| Serum ACE                 | 10.2 nmol/ml/min| 70.6 nmol/ml/min| <40nmol/ml/min           |
similar to the findings, in this case, sarcoid arthritis is usually symmetrical; the ankles are involved in more than 90% of the cases; the knees, small hands or feet, wrists, and elbows are involved in 15% to 40%. Local pain, soft-tissue swelling, peri-articular tenderness, oedema, and joint effusion may be present. [15]

Erythema nodosum is a form of neutrophilic panniculitis whose aetiology is not completely understood; however, it has been linked to the deposition of immune complexes in the septal veins’ subcutaneous fat. Erythema nodosum is more commonly found in women [14], making our index case even a rare occurrence.

CRP or ESR level is elevated in more than 80% of patients with acute sarcoid polyarthritis. [15] Serum ACE tends to be elevated in 41% of all patients with sarcoidosis and 15% of those with LS and is used to monitor disease activity. It also connotes more persistent arthritis. [10] This patient’s initially normal level of ACE was likely because he was on Ramipril, an angiotensin-converting enzyme inhibitor (ACEI). The level, however, became elevated when the medication was discontinued.

This patient also had elevated serum calcium levels; hypercalcemia and/or hypercalciuria occur in about 10% of Sarcoidosis patients. It is more common in whites than African Americans and men. It occurs due to increased production of 1, 25-dihydroxyvitamin D by the granuloma itself. Using liver function studies, only 20–30% of patients will have evidence of liver involvement. The most common abnormality of liver function is an elevation of the alkaline phosphatase level, consistent with an obstructive pattern. In addition, elevated transaminase levels can occur. An elevated bilirubin level is a marker for more advanced liver disease. [18]

Treatment is mainly with Non-steroidal Anti-inflammatory Drugs (NSAIDs) along with bed rest. Steroids can be used in severe arthritis, hypercalcemia, and granulomatous skin disease. [19]

Conclusion

Though rare amongst Sub-Saharan Africans, Lofgren syndrome is now recognised to occur in this region, and documented cases are increasing. Therefore, the clinician practicing in sub-Saharan Africa needs to open his mind and broaden his differential to include Lofgren syndrome, especially if typical features are present.

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Conflict of interest

There are no conflicts of interest to declare by any of the authors of this study.

Authors’ Contributions

OJO was involved in the conception, design, literature search, drafting and approval of the manuscript. IA was involved in the design, literature search, drafting and approval of the manuscript. NTD was involved in the design, literature search, drafting and approval of the manuscript. OTI was involved in the design, literature search, drafting and approval of the manuscript.

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