Case Report

Dengue Fever with Sever's Disease: A Case Report

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Abstract

This report discusses a case of an 11-year-old boy diagnosed with dengue fever and Sever's disease. The boy reported to the Paediatric Outpatient Department (OPD) of Mugda Medical College Hospital, Dhaka, Bangladesh, with fever, lower limb pain, and abdominal symptoms. He was eventually found to have a positive dengue NS1 antigen and clinical signs consistent with calcaneal apophysitis. Though musculoskeletal symptoms like bodyache, and joint pain are associated with dengue fever, this rare combination was diagnosed incidentally. Atypical manifestations of dengue, termed as 'expanded dengue syndrome' which involves isolated organ complications like neurological, hepatic, renal, or cardiovascular issues. They may arise from severe shock, underlying conditions, or co-infections, and can mimic diseases like malaria or enteric fever, making the clinical decision more difficult and mislead the physician's initial impression[1]. Severe back pain in dengue fever which is known as break-bone fever is not uncommon. But in this case calcaneal apophysitis or Sever's disease was observed with heel pain pose a diagnostic dilemma as it persisted after subsidence of dengue symptoms. So far reported Sever's disease has not been found as association or musculoskeletal complications in dengue related illness in our country ever before.

Keywords: *Dengue fever, Sever's disease, Calcaneal apophysitis*

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INTRODUCTION

Dengue fever is a viral illness with varied systemic manifestations. This vector-borne infection caused by a single-stranded RNA virus of the genus *Flavivirus*, which belongs to the family *Flaviviridae*[2]. Clinical presentations of dengue can range from being entirely asymptomatic to mild symptoms such as fever, myalgia, and rash, or severe complications like hemorrhagic fever and shock. Approximately 20% of cases are asymptomatic, while the disease may manifest with varying severity, from mild to severe forms, across its broad clinical spectrum. Recent studies have highlighted atypical presentations of dengue. Pothapregada et al. identified unusual manifestations in their study population, including lymphadenopathy, biphasic fever, hepatitis, febrile diarrhea, refractory shock, altered mental status, portal hypertension, cholecystitis, acute respiratory distress syndrome, myocarditis, and pericardial effusion [3] While arthralgia and myalgia are common, specific musculoskeletal complications such as Sever's Disease which is also known as calcaneal apophysitis has not been reported yet. Sever's Disease, typically observed in athletically active children usually aged between 8 and 15 years, results from repetitive stress on the calcaneal growth plate. Calcaneal apophysitis or Sever's disease, is a frequent musculoskeletal issue in children, accounting for 2% to 16% of cases seen in sports clinics. This condition is generally recognized as self-limiting[4]. There are no documented cases or studies explicitly reporting a connection between dengue fever and calcaneal apophysitis (Sever's disease). Calcaneal apophysitis typically unrelated to viral infections like dengue.

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Most available literature focuses on risk factors and management of each condition independently.This case illustrates a usual presentation of dengue fever that coincides with Sever's disease, underscoring the need for detailed musculoskeletal evaluation pediatric patients, specially who are athletically active.

CASE SUMMARY

An 11-year-old boy, hailing from Madartek area of Dhaka City, presented to the Paediatric Outpatient Department (OPD) at Mugda Medical College Hospital, Dhaka, Bangladesh, with complaints of high-grade, intermittent fever for three days, accompanied by lower limb pain, and vomiting. His mother reported a history of occasional lower limb pain associated with limping during athletic activities, for which no prior medical consultation was sought, but occasionally used to take Tab. Paracetamol as OTC drug. The boy is a student of class two and belongs to a low socioeconomic group. He is athletically active. On examination, the patient appeared ill-looking, febrile (102°F), His heart rate was 105 beats/min with an antalgic gait. Squeeze test was done through mediolateral compression of the calcaneal growth plate to elicit pain (Fig. 1). This test was done to diagnose calcaneal apophysitis. Standing tiptoe aggravated the heel pain. No other abnormalities were found in systemic examinations. Laboratory investigations showed mild thrombocytopenia (platelet count was 1,25,000/ mm^3), normocytic normochromic anemia with anisopoikilocytosis, positive dengue NS1 antigen, and an elevated level of C-reactive protein (48 mg/L). X-ray of the right ankle showed increased density and fragmentation of calcaneal apophysis with overlying soft tissue swelling (Fig. 2). Findings were consistent with Sever's Disease. Serial complete blood counts (CBCs) were conducted to track potential complications associated with dengue. The primary focus was on addressing dengue fever, followed by the management of Sever's Disease. Fever was controlled with paracetamol, while ibuprofen was used to alleviate musculoskeletal pain after dengue-related risks were treated. Bed rest and avoidance of strenuous physical activities were recommended to aid recovery. Physiotherapy and the use of supportive footwear were suggested to manage and prevent worsening of Sever's Disease. The patient was discharged with instructions to follow up as an outpatient to ensure symptom resolution and compliance with rehabilitation protocols.

Fig.1: *Procedure of squeeze test*

Fig. 2: *X- ray of right ankle anteropostreior and lateral view showing increased density and fragmentation of calcaneal apophysis with overlying soft tissue swelling. Joint spaces are normal Articular margins appear normal.*

DISCUSSION

Dengue fever with other symptoms commonly presents with musculoskeletal symptoms such as myalgia and arthralgia. However, Sever's disease, characterized by inflammation of the calcaneal growth plate[5], and has not reported in association with dengue. Other causes of heel pain in children include achilles tendonitis, calcaneal stress fracture, retrocalcaneal bursitis, calcaneal cysts, osteomyelitis, and plantar fasciitis, which can usually be differentiated by thorough clinical examination and

good radiological evaluation[5,6]. This case highlights the importance of considering less common causes of musculoskeletal pain like Sever's disease in other illnesses, particularly in athletically active pediatric patients. The positive squeeze test and localized heel tenderness helped differentiate Sever's disease from other potential differentials and finally Radiology helped in diagnosis[5,6].

CONCLUSION

This case underscores the need for a thorough musculoskeletal evaluation in athletically active paediatric patients presenting with localized limb pain. The association of dengue fever with Sever's Disease, though not yet found in our country ever before, may be underrecognized and warrants attention for appropriate diagnosis and management.

REFERENCES

1. World Health Organization (WHO). Comprehensive guidelines for prevention and control of dengue and dengue haemorrhagic fever. Revised and expanded edition. (SEARO Technical Publication Series No 60). New Delhi: WHO-SEARO; 2011.
2. Arshad H, Bashir M, Mushtaq US, Imtiaz H, Rajpar R, Alam MF, et al. Clinical characteristics and symptomatology associated with dengue fever. Cureus. 2022;14(6):e26677.
3. Pothapregada S, Kamalakannan B, Thulasingam M. Clinical profile of atypical manifestations of dengue fever. Indian J Pediatr. 2016;83(5):493-9.
4. James AM, Williams CM, Haines TP. Effectiveness of interventions in reducing pain and maintaining physical activity in children and adolescents with calcaneal apophysitis (Sever's disease): A systematic review. J Foot Ankle Res. 2013;6(1):16.
5. Hussain S, Hussain K, Hussain S, Hussain S. Sever's disease: a common cause of paediatric heel pain. BMJ Case Rep. 2013;2013:bcr2013009758.
6. Agrawal A, Agrawal R. Sever disease: A common but commonly undiagnosed cause of heel pain in growing children. Pediatr Oncall J. 2011;8:109-10.