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Case Report

Case of 1 ½ Year Old with Meningococcal Meningitis with Waterhouse-Friderichsen Syndrome

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Abstract

In this case we present a child with a one snd half year old child with Meningococcal meningitis with Waterhouse -Friderichsen syndrome who came with rashes with prodromal symptoms and developed ever increasing purpuric rashes all over the body and then developed hypotension rapidly succumbing.

Keywords: *Neisseria meningitidis; meningococcaemia; waterhouse-friderichsen syndrome; disseminated intravascular coagulation.*

Introduction

Neisseria meningitidis-induced acute meningococcal disease is an emergency and a fatal condition that has a high mortality rate. In patients with fulminant infection, a maculopapular petechial eruption, purpura fulminans, or an ecchymotic lesion are worrisome signs reflecting disseminated intravascular coagulation and hint at waterhouse - friderichsen syndrome. Here we describe a case of patient with Neisseria meningitidis-induced meningococcal disease with waterhouse-friderichsen syndrome. The importance of early identification of the characteristic skin lesion of meningococcaemia and timely institution of appropriate antibiotic therapy is emphasized.

Acute infections of the central nervous system still constitute a diagnostic and therapeutic challenge. Their course is severe, they usually co-exist with systemic infections, and are associated with high mortality. Neisseria meningitidis infections are a particular threat since they may occur epidemically or pandemically, rather than sporadically or endemically. Although up to 12 serological groups have been identified among N. Meningitidis strains, more than 90% of infections are caused by A,B,C,Y and W group isolates.

Clinical presentation of N. Meningitidis infection is similar to the case of other bacterial neuroinfectious. A common, albeit not pathognomonic symptom of meningococcal septicemia is purpuric rash, present in 10%-50% of cases. Aside from the rash, adrenal hemorrhages (waterhouse - friderichsen syndrome, WFS) can be observed in fulminant infections. In fatal cases, bacteriological diagnosis may not be straightforward due to postmortem replication and relocation of endogenic microflora.

Case Description

1 ½ year old child of non-consanguineous parents was born normal without any antenatal or postnatal complications was referred for loss of sensorium with small occasionally reddish patches on arm, legs and whole body. Child also history of cold since 2 days prior to this and went to local doctor for treatment. No history of bleeding disorder, congenital anomaly. Child's diet history was appropriate and immunized upto date without any bleeding complication during immunization. Developmental history was normal up to the recent problem. On physical examination, his temperature was 99 % F, blood pressure was 90/60 mm hg, respiratory rate was 34b/min. Capillary refilling time, no pallor, icterus, cyanosis, clubbing, lymphadenopathy. The child had reddish patches very minimal around 5 patches located in upper arm which is of 0.3 cm in the limbs and body and the child was clinically diagnosed to have meningitis. Clinical course of the baby was that the reddish purpuric patches increase in size and number all over the body and in pharynx and larynx within few hours and became larger patches. Child then developed hypotension within, and ultrasound showed adrenal hemorrhages. Child was intubated and collapsed soon after.

Investigations

White blood cell count was 26900 cells/cumm , with polymorphonuclear leucocytosis. cerebrospinal fluid culture shows meningococcal meningitis. CSF analysis revealed red blood cell count 6 cells/mm3, neutrophilic gram staining showed gram negative coffee bean diplococci suggestive of meningococcus and culture proven , glucose72 mg/dl and protein 12.6mg/dl. Random blood sugar is 143mg/dl. The c-reactive protein level is 42mg/dl. Chest x-ray was normal. MRI revealed signs of increased intracranial pressure and meningitis. The child was treated with third generation cephalosporins, IV fluids, vasopressors, hydrocortisone and was shifted to pediatric intensive care for ventilation.

Discussion

The mortality of WFS is approximately 20% rising to more than 50% when there is shock.in pediatric patients with an invasive meningococcal disease, third generation cephalosporin was suggested to be the antibiotic of choice for Neisseria meningitidis infection. Corticosteroids were considered for WFS due to adrenal insufficiency status. Hydrocortisone has been recommended. The attending physician were prescribed rifampicin chemoprophylaxis to prevent getting the infection.

References

1. Doherty s.. Fatal pneumococcal Waterhouse-Friderichsen syndrome. Emerg Med (Fremantle). 2001 Jun;13(2):237-9. doi: 10.1046/j.1442-2026.2001.00219.x. PMID: 11482865.

2. KINGERY FA. WATERHOUSE-FRIDERICHSEN SYNDROME. JAMA. 1965 May 10;192:569. PMID: 14284854.

3. Batista RS, Gomes AP, Dutra Gazineo JL, Balbino Miguel PS, Santana LA, Oliveira L, Geller M. Meningococcal disease, a clinical and epidemiological review. Asian Pac J Trop Med. 2017 Nov;10(11):1019-1029. doi: 10.1016/j.apjtm.2017.10.004. Epub 2017 Oct 28. PMID: 29203096.