Purpura fulminans in invasive meningococcal disease; importance of early recognition and treatment

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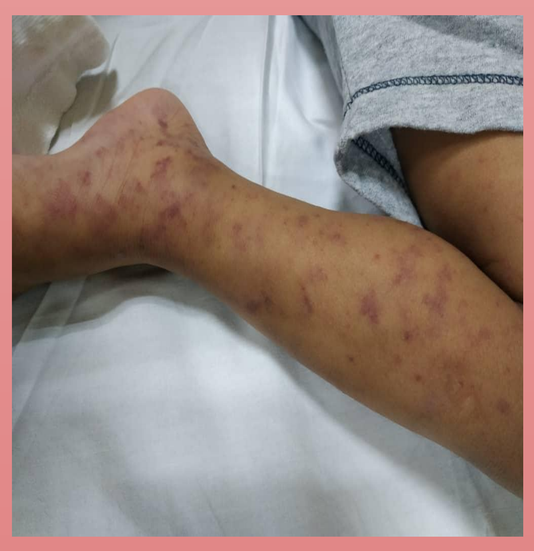
Introduction

Invasive meningococcal disease (**IMD**) is a life threatening condition requiring immediate medical care.It is defined as dissemination of meningococci (***Neisseria meningitidis***) into blood stream, which may present with meningitis alone or meningococcemia with or without meningitis.

Case Report

We report a case of a 2 year-old boy with no underlying comorbid, presented with 3 days history of fever, cough, coryza, vomiting and diarrhoea. There was a sudden onset of generalized rashes consisting of mixed petechial, purpuric and ecchymosis over the trunk and bilateral lower limbs. Clinically, he appeared septic and lethargic with poor perfusion but was normotensive. There was no evidence of meningism. Venous blood gas showed compensated metabolic acidosis, thrombocytopenia and deranged coagulation profile. Blood culture showed *Neisseria meninigitidis.* He was treated with intravenous ceftriaxone and subsequently changed to amikacin and meropenam. Vancomycin was also been given for total 1 week duration.He developed purpura fulminants over his upper and lower limbs with clear demarcation. He underwent disarticulation of right little and right finger at mcpj, right index finger at pipj, left index finger at pipj, left middle finger at dipj and left little finger at pipj and bilateral below knee amputation. He was discharged after 10 weeks. Contact tracing was done and antibiotic prophylaxis was given to contacts.



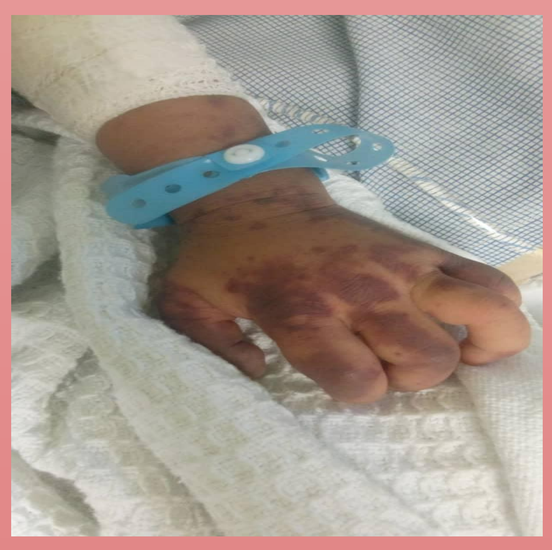


Figure 1 and Figure 2 **: Generalized rashes consisting of mixed petechial, purpuric and ecchymosis over bilateral limbs at presentation. Purpura fulminans over the dorsal surface of the hands.**

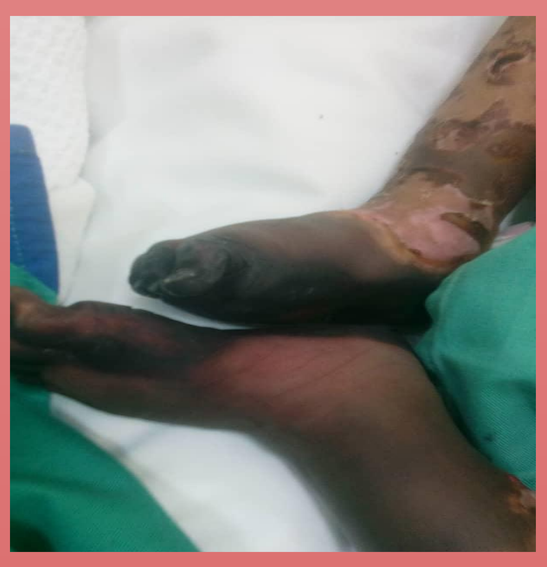


Figure 3 : **Gangrene at tips of all toes right and left lower limbs**

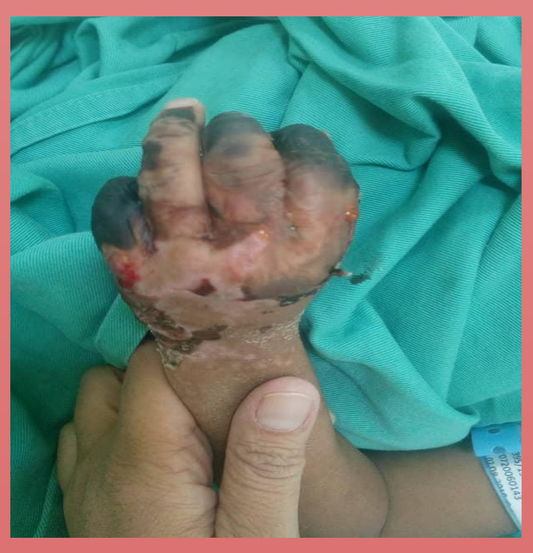


Figure 4 **: Demarcation level of left index finger at PIPJ**
Demarcation level of left middle finger at DIPJ
Demarcation level of little finger at PIPJ

Discussion

Meningococcemia is characterized by an abrupt onset of fever and a petechial or purpuric rash, which may progress to purpura fulminans, and is often associated with the rapid onset of hypotension, acute adrenal hemorrhage (the Waterhouse–Frider- ichsen syndrome), and multiorgan failure.

Globally, the incidence of IMD is 500,000 cases every year. Death occurs in 6-10% of IMD cases and sequelae in 4.3-11.2% of cases. Common sequelae were hearing loss, deafness, seizure, amputation and skin scarring.

The classic laboratory diagnosis of meningococcal disease has relied on bacteriologic culture while PCR offers more rapid diagnosis. Treatment using IV ceftriaxone / cefotaxime should be given as soon as meningococcal disease is suspected. Patients should be isolated and droplet precautions continued for 24 hours after administration of appropriate antibiotics.

Chemoprophylaxis should be given to contacts as soon as possible including close household, intimate, and childcare contacts within 7 days prior to disease onset and healthcare workers exposed to respiratory secretions. The quadrivalent polysaccharide vaccine that provides protection against serogroups A, C, Y, and W-135 is the only licenced vaccine providing at least 85% efficacy.

Conclusion

IMD requires prompt diagnosis and instillation of antibiotics at the point of contact in emergency department. Prevention of IMD with immunisation is of utmost importance to prevent mortality and morbidity. Immunisation should be in our National Immunisation Program.

Figure 5 **: Progressive purpura fulminans over the upper limbs.**

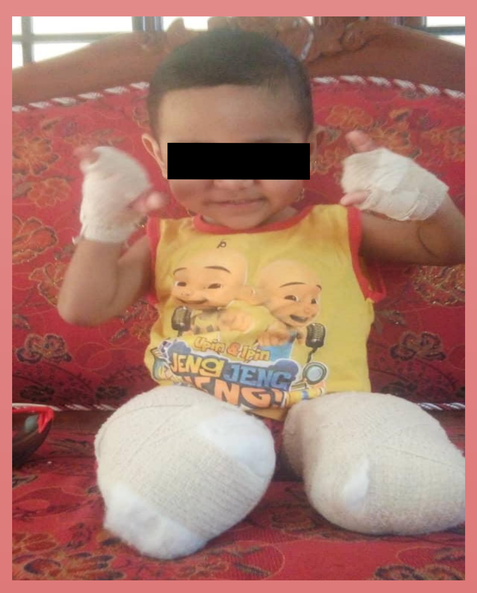


Figure 6: **Patient underwent disarticulation of right little and right finger at mcpj, right index finger at pipj, left index finger at pipj, left middle finger at dipj and left little finger at pipj and bilateral below knee amputation.**

References

Meningococcal disease. Nancy E, Bradley A, David S. Meningoccal disease. N Engl J Med 2001; 344:1378-1388.

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