

A CASE OF DERMONECROSIS DUE TO NAJA KAOUTHIA ENVENOMING: SERIAL PROGRESSION OF WOUND INJURY AND HEALING

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INTRODUCTION

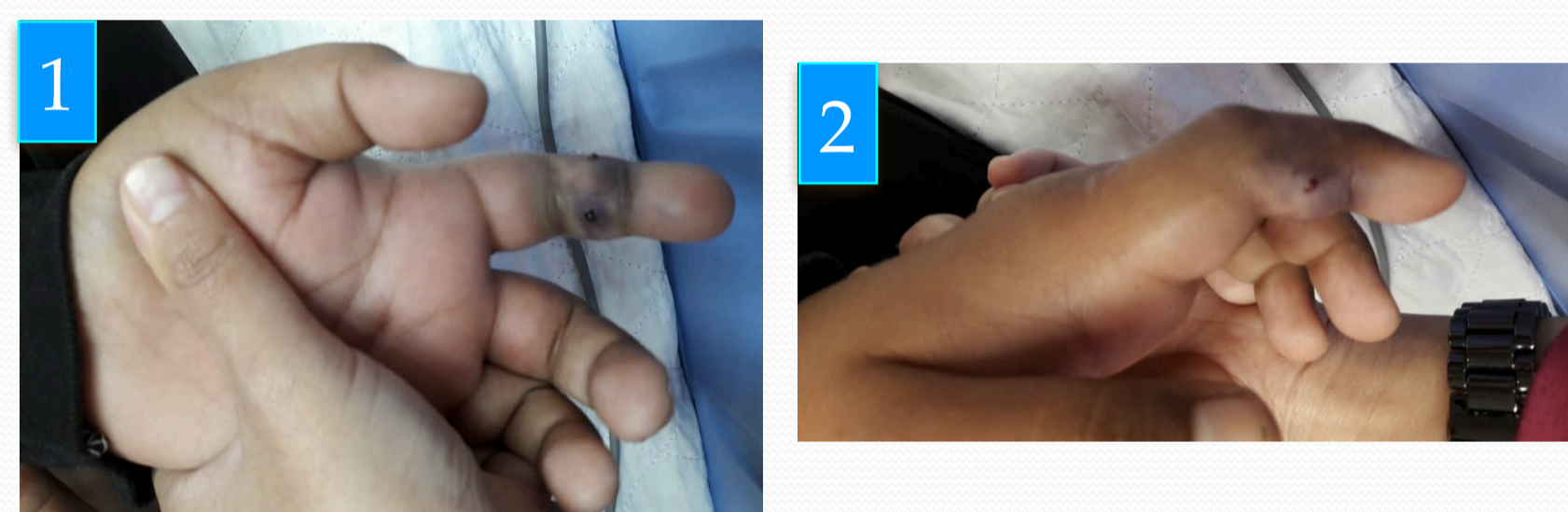
- Peninsular Malaysia has 2 venomous *Naja* species cobra
- Envenoming by the *Naja* species may cause paralysis from systemic neurotoxic effect and local envenoming that cause severe pain, local swelling and significant tissue necrosis (dermonecrosis)
- We presented a case to highlight the serial progression of dermonecrosis following envenoming by a *Naja kaouthia* snake.

CASE PRESENTATION

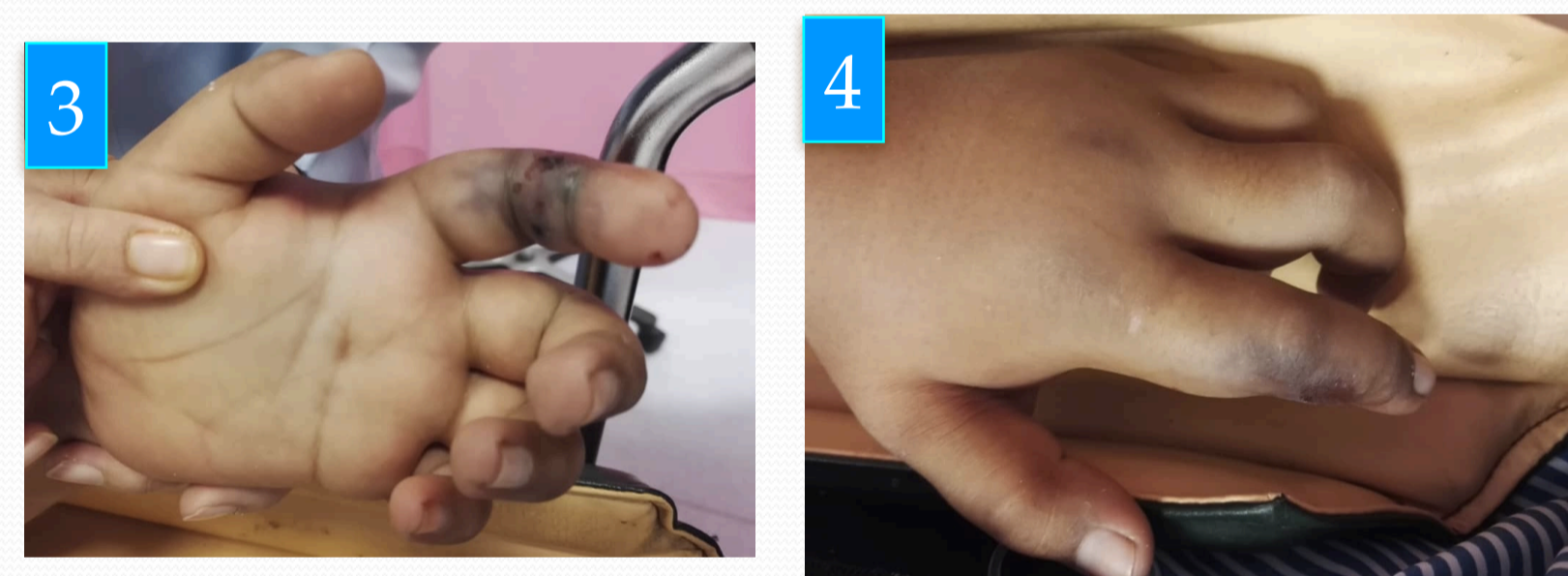
- An 11 year old Malay boy presented with Unidentified animal bite over the left index finger. He was bitten while picking a shirt from a pile of clothes in his house.
- The patient became drowsy with ptosis and was intubated. He initially received 10 vials of *Naja kaouthia* antivenom (NKAV) based on clinical syndrome of paralytic neurotoxic effect with early tissue necrosis (dermonecrosis).
- Additional 5 vials of NKAV were administered based on rapid progression of swelling and progression of dermonecrosis.
- The family later found and killed a *Naja kaouthia* snake found inside the house.
- He was diagnosed as *Naja Kouthia* snakebite with systematic envenoming and dermonecrosis of the left index finger.
- Wound debridement was done on Day 6 post bite.

Serial progression of wound injury and healing

3 hours post bite :
Early tissue necrosis is evident



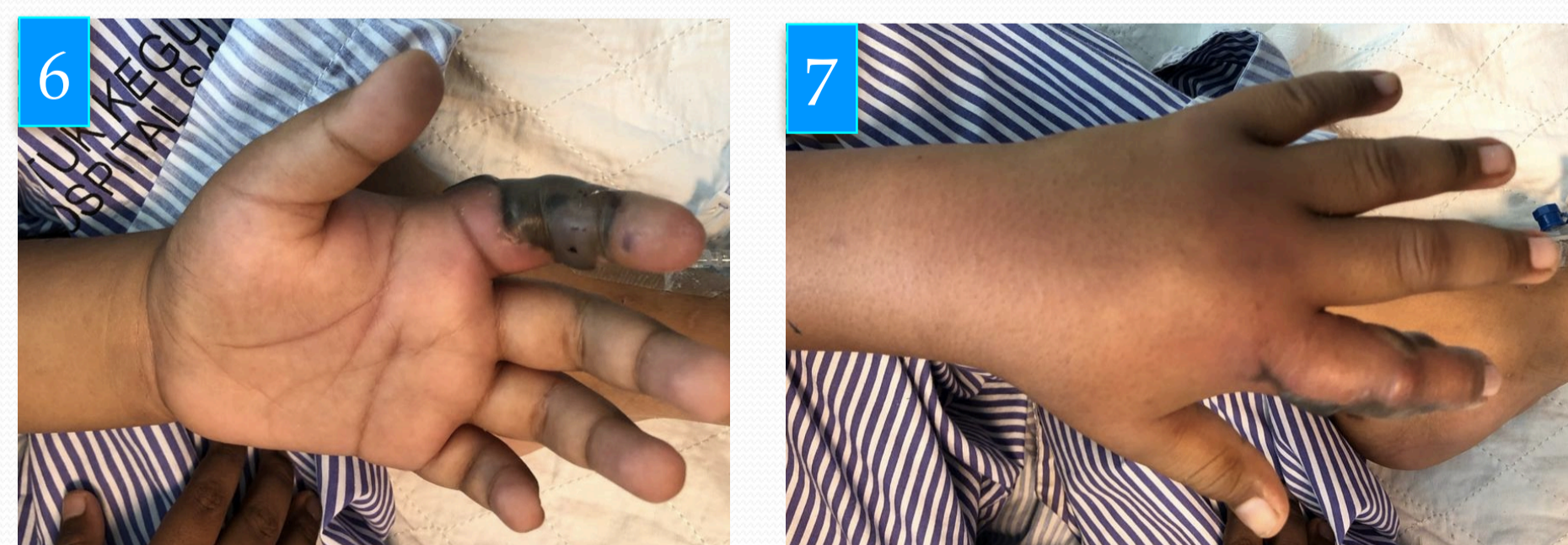
9 hours post bite :
Swollen hand with dermonecrosis



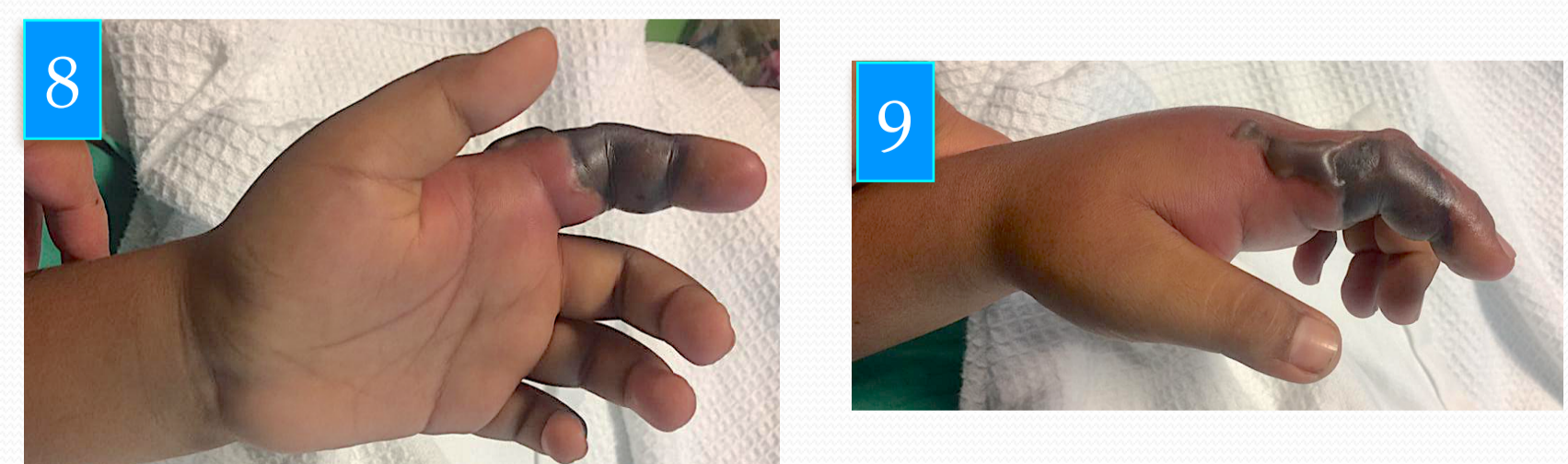
31 hours post bite :
Formation of blisters from dermonecrosis area.



Day 3 post bite :
Formation of blisters. Dermonecrosis became more demarcated



Day 4 post bite :
Inflammation of skin surrounding the dermonecrosis area.



Day 8 post bite, Day 2 post debridement
Necrotic tissue removed.



Serial progression of wound injury and healing



Day 15 post bite, Day 9 post debridement

Further removal of necrotic tissue during regular dressing



Day 46 post bite,

Satisfactory growth of healthy new soft tissue covering the wound.

DISCUSSION

- In this patient, the progression of the snakebite wound healing were:
 - Early tissue necrosis, within a few hours.
 - Blister formation after 24 hours. Blister fluid culture isolated *Morganella morganii* sensitive to Amoxicillin/Clavulanic acid. (Blistering phase)
 - Inflammation of soft tissue surrounding the dermonecrosis area (Inflammatory phase)
 - Dermonecrosis became well demarcated by Day 4. Debridement was done on Day 6.
 - Formation of granulation tissue over a period of several weeks (Proliferative phase), under the care of a dedicated wound team.
- Early soft tissue necrosis is a common complication of *Naja species* envenoming.
- Timely, adequate and appropriate antivenom therapy should be given to minimize the extent of dermonecrosis. This should be based on serial assessment of clinical progression of envenoming and response to antivenom therapy.
- Blister formation and inflammation of the area surrounding dermonecrosis is a common expected progression of *Naja species* envenoming due to cytotoxic venom damage and injury. Confusing these changes as infective Necrotizing Fasciitis may cause in a more aggressive and extensive wound debridement / removal of viable healthy soft tissue.
- Blister fluid should be sent for culture and sensitivity to guide antibiotic use.
- The exact extent of tissue necrosis will be visible when the dermonecrosis is well demarcated. In our case, after 4 days post bite.

CONCLUSION

- Understanding the stages of wound progression of dermonecrosis due to *Naja species* envenoming is important in optimizing the treatment plan and to avoid pitfalls in the management

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ACKNOWLEDGEMENTS

- We thank Paediatric and Orthopaedic team HKK as managing team
- We thank the Director General of Health, Malaysia for the permission to present this case report

