



Paediatrics

TO CLOSE OR NOT TO CLOSE! NAVIGATING WOUND CARE- TERRIBLE MONKEY BITE IN A BLEEDING DISORDER

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ABSTRACT **Background:** Haemophilia is a congenital X-linked recessive disorder characterized by a deficiency in essential coagulation factors required for effective blood clotting. It is the most prevalent of the bleeding disorders and, if not adequately managed, can lead to chronic complications and potentially fatal outcomes. Even minor trauma can result in life-threatening bleeding. **Clinical Description:** A 5-year-old male child, a known case of Hemophilia A, presented to us with alleged history of monkey bite in the form of multiple lacerations on his left lower limb at his residence resulting in massive life-threatening hemorrhage and subsequent hypovolemic shock. **Management & Outcome:** Managing acute bleeding in a known case of hemophilia is a herculean task. Immediate fluid resuscitation along with meticulous wound care and subsequent transfusions of Packed red blood cells (PRBC), platelets and Factor VIII concentrate. These measures effectively stabilized the child's hemodynamic status and averted life-threatening consequences. **Conclusion:** Prompt administration of Factor VIII concentrate, along with comprehensive wound management, proved instrumental in resolving the acute bleeding episode. This case underscores the critical role of timely intervention in mitigating the risks associated with hemorrhage in Hemophilia patients following traumatic events.

KEYWORDS : Hemophilia, animal bite, multiple lacerations, Factor VIII, wound closure.

Haemophilia is an X-linked recessive disorder characterized by a deficiency in coagulation factors essential for blood clotting. It is the most prevalent bleeding disorder and, if not adequately managed, can lead to chronic disease and potentially fatal outcomes. Despite having some of the most efficacious and safe treatments among prevalent monogenic disorders, timely treatment is crucial for effective management. [1,2,5] Haemophilia A, with a prevalence of 0.9 per 100,000 population, is more common than Haemophilia B. Due to its X-linked inheritance pattern, regions with higher rates of consanguineous marriages exhibit a greater prevalence of the disorder [3] Monkey bites account for 2-21% of all animal bite injuries. In India, studies have reported monkey bites as the second most common source of bite injuries, following dog bites.[4]

Clinical Description:

A five-year-old male, previously diagnosed with Haemophilia A at the age of two, was referred to the emergency room from a primary health centre. He presented with a reported monkey bite on his left lower limb at home, resulting in significant bleeding. Monkey here involved is a wild animal, which was not in captivity and the child was bitten when he was playing outside the house. Prior to arrival, he had received one dose of Factor VIII (40IU/KG), primary wound care, Tetanus Toxoid and Rabies vaccines at the primary health centre. In the emergency room, the general condition of the child was sick, drowsy, with pulse rate of 160/min, respiratory rate of 28/min, systolic blood pressure (BP) was 50 mmHg (less than 5th centile for the age) and diastolic BP was not recordable, capillary refilling time was more than 3 seconds. Oxygen saturation on room air was 95%, peripheries were cold and clammy, with feeble pulses, Random blood sugar (RBS) was 92mg/dl, all indicating that the child was in profound shock. Child weighed 13kg, (weight-for-age Z-score -2 to -3 SD), height was 113cm (height-for-age Z-score 0 to 2SD), head circumference was 52cm (Z-score 2SD). A comprehensive head-to-toe examination revealed significant pallor in the palpebral conjunctiva, lips, oral mucosa, palms and soles. There was no jaundice, clubbing, engorged neck veins, or enlarged neck glands. Local examination of the wound site revealed bite marks in the form of multiple lacerations over the medial aspect of thigh measuring 5x2cm and over the upper one third of flexor aspect of the left leg measuring 4x3cm [Figure 1a Figure 1b]. Systemic examination was otherwise unremarkable.

Management And Outcome:

Routine blood investigations revealed Hb of 4.6g/dl, RBC count of

1.7million cells/mm³ with hematocrit 13%, total leukocyte count of 12910cells/mm³ with 81% neutrophils & 15% lymphocytes, platelet count of 118,000 cells/mm³. The child's blood group was identified as AB positive. Immediate resuscitation commenced in the emergency room with crystalloid fluids administered through two large-bore intravenous lines. Empirical antibiotics – Ceftriaxone, Amikacin (for gram negative bacteria) and Metronidazole (for anaerobes) were promptly administered for 14 days. Thorough wound wash with soap and water ensued, resulting in a mild improvement in sensorium and vital signs. In the Paediatric Intensive Care Unit, the child underwent transfusion therapy with two units each of packed red blood cells, platelets, and fresh frozen plasma, adhering to established transfusion protocols. Rabies immunoglobulin was administered at a dose of 40 IU/kg at the wound site, followed by Rabies vaccine according to an intradermal regimen, meticulously implemented with precautions such as using a small gauge needle and applying local pressure at the injection site. Subsequently, Factor VIII replacement therapy was initiated at a dose of 60 IU/kg, and then tapered to 25 IU/kg at regular intervals under the guidance of a haematologist. As it was a wild monkey, hence post exposure prophylaxis with antivirals was not considered.[5] Forensic medicine expert consultation was sought to rule out the possibility of assault. After 5 days, the child underwent delayed wound closure under general anaesthesia [Figure 2a and Figure 2b]. Once hemodynamically stable and bleeding had ceased, Factor VIII administration was gradually tapered and discontinued. The child exhibited notable clinical improvement with no setbacks and was discharged following a 6-day hospitalization period.



Figure 1a: Image depicting lacerated wound over the flexor aspect of left leg. **Figure 1b:** Image depicting lacerated wound over the medial aspect of left thigh.



Figure 2a: Image depicting sutured wound over the flexor aspect of left leg. **Figure 2b:** Image Depicting Sutured Wound Over The Medial Aspect Of Left Thigh.

DISCUSSION:

This case report delineates a critical incident involving a confirmed case of Haemophilia A suffered a severe monkey bite, resulting in a life-threatening hypotensive shock. Given the inherent propensity for spontaneous bleeding in haemophiliacs, even minor traumas can precipitate grave consequences. The ensuing catastrophic event underscores the imperative for immediate intervention to mitigate shock thereby, prevent end-organ compromise. Notably, the decision to defer wound closure yielded favourable outcomes, expediting the wound healing process. Muscle bleeds are very dangerous & result in life threatening consequences if not treated promptly. Extensive haemorrhage, particularly from major muscle groups like the upper and forearm, thigh, and calf muscles, can precipitate hypovolemic shock and subsequent multi-organ dysfunction.[6] Urgent administration of factor coverage is paramount to curtail these risks and prevent long-term disabilities such as foot drop and Volkmann's contracture.[6] Moreover, the management of animal bite wounds presents distinct complexities, chiefly due to the heightened risk of infection. Conventionally, suturing of animal bite wounds has been deferred to mitigate infection risks. However, recent empirical data suggest comparable infection rates between sutured and non-sutured wounds, with the former offering superior cosmetic outcomes. [7,8] This underscores the necessity for individualized wound management protocols guided by current evidence and clinical acumen.[9,10]

CONCLUSION

Therefore, immediate wound care coupled with timely Factor VIII administration is imperative and life-saving in cases of Haemophilia. [1,2] In this instance, the management protocol entailed meticulous attention to multiple and extensive lacerated bite wounds, incorporating comprehensive wound care, fluid resuscitation, Factor VIII infusion, as well as transfusion of packed red blood cells and fresh frozen plasma. Subsequent closure of the wound further exemplified the comprehensive approach aimed at optimizing patient outcomes. [7,8,10]

Lessons Learnt:

- Physicians should demonstrate utmost diligence in managing shock and promptly initiating emergency Factor VIII coverage for haemophiliac patients.
- Contrary to previous beliefs, suturing or closure of animal bite wounds does not increase the infection rate; instead, it may enhance cosmetic outcomes.
- Careful precautions are essential when administering intramuscular or subcutaneous injections in individuals with Haemophilia to mitigate the risk of bleeding complications.

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The data that support the findings of this study are available from the corresponding author upon request.

Conflict Of Interest:

The authors declare that we have no conflict of interest.

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