Original Article

Clinical Presentation and Management of Monkey Bite Patients Visiting Kokrajhar Medical College

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Abstract

Background: Monkey bites are a significant source of animal-bite injuries in India and carry a risk of bacterial and viral infection, with rabies the most important to prevent. Local data on injury patterns and post-exposure prophylaxis (PEP) compliance are limited. The objective is to describe the clinical presentation of monkey bite patients and to assess their compliance with PEP. **Material and Methods:** A hospital-based retrospective study of all monkey bite cases that attended the Emergency/OPD of Kokrajhar Medical College and Hospital over the past two and a half years. Data on age, gender, injury type, anatomical site, and management and PEP compliance were taken from emergency department records. **Results:** Twenty-three patients were included. Eight (34.78%) were aged 0-10 years and 13 (56.52%) were under 20. Males made up 78.26% of cases (male-to-female ratio 3.6:1). Bites outnumbered scratches (19 [82.61%] vs 4 [17.39%]). Of the bites, 68.4% were on the upper limb, 26.32% on the lower limb and 5.26% on the head and neck; none were on the torso. Scratches were split equally between the lower limb and the head and neck. All cases were WHO Category III exposures and all patients received anti-rabies immunoglobulin. All but one patient (a male aged 21-30) completed the anti-rabies vaccine course. **Conclusion:** Monkey bites at this centre mainly affected children, adolescents and males, and most were bites to the upper limb, which suggests injuries occurring while feeding or handling monkeys. PEP compliance was very high. Public awareness about avoiding contact with and feeding monkeys, together with timely wound care and PEP, is essential. Larger multicentre studies are needed to understand the circumstances behind human-monkey conflict.

Keywords: Monkey Bite, Rabies, Post-Exposure Prophylaxis, Category III Exposure, Kokrajhar.

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Introduction

As per WHO Monkey bites account for 2–21% of animal bite injuries worldwide, the most common being dog bites followed by cat bites.[1] In India Monkey bites are a serious concern as there were as many as more than 5 Lakh cases of animal bites (which included monkeys) in the year 2024 and the population of monkeys was estimated to be 50 million in the same year.[2] Some researchers have found the monkey bites are the second most common animal bite following dog bites ranging from 2.2 % -8.3% of total animal bite cases in their studies in the various parts of India.[3-6] Monkeys are known to be associated with many viruses associated with rabies, Simian virus 40 (SV40), Rhesus cytomegalovirus (RhCMV), Herpevirus simiae, also known as herpes B virus, macaques naturally carry several enzootic retroviruses asymptomatically, including simian foamy virus (SFV), SRV and simian T-cell lymphotropic virus type 1 (STLV-1). and M Pox as well as bacterial infection related to salmonella, campylobacter and shigella species.[7-11] Monkey bites are an important risk among travellers, after dog bites. Occupational and recreational exposures to monkey bites are related to animal control, veterinary, zoologists, wildlife professionals and hunting or trapping animals. Monkey bites can transmit both bacterial and viral infections although rabies is the most important infection to prevent in India.

Monkey bites can produce a wide range of injuries depending on the force of the bite, the species of the monkey and the body part involved. Common type of injuries are puncture wounds, lacerations, abrasions, avulsion injuries and crush injuries. The common anatomical sites of bites are hands and fingers (most common in adults), forearms, legs, face and scalp (more common in children) feet and ankles. Complications which may arise from monkey bites may be cellulitis, abscess formation, tendon injury, nerve injury, joint involvement (especially bites over fingers), osteomyelitis (if bone is involved) scarring and cosmetic deformity and functional deformity if treatment is delayed. Because monkey bites often create deep puncture wounds they have a relatively high risk of bacterial infection despite the wound appearing small externally.

WHO exposure criteria has categorised the severity of animal bites.

Category I: Touching or feeding animals, licking or intact skin-

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no exposure
Category II: Minor scratches or abrasions without bleeding Rabies vaccination indicated
Category III: Single or multiple transdermal bites or scratches, contamination of broken skin or mucous membrane with saliva- Rabies vaccine plus rabies immunoglobulin (RIG) are indicated.[12]

Aim and Objectives:

AIM: To systematically document the anatomical location, depth, type (Bite v/s Scratch) and severity (eg. categorisation of exposure) of injuries and improve management.

Objectives:

1. To determine the common symptoms and physical findings such as pain, swelling, bleeding, bruising, or tissue loss.
2. To analyse clinical presentation of the monkey bites patients.
3. To track the compliance of post exposure prophylaxis (PEP) by patients.

Materials and Methods

Study Design: Hospital based Retrospective Study
Study Setting: Emergency Medicine department of Kokrajhar Medical College and Hospital
Study Duration: Two and half years.
Study Population: Population catered by Kokrajhar Medical College & Hospital.
Ethical Permissions: Taken
Sample Size: All the monkey bite cases attending Kokrajhar Medical College and Hospital
in the last two and half years.
Inclusion criteria: All the cases with monkey bites attending OPD/ Emergency of KMCH.
Exclusion: All other animal bite patients attending OPD/ Emergency of KMCH.
Sampling Method And Study Tool: Since it is a retrospective study, the data are collected from the records present in the emergency medicine department of Kokrajhar Medical College and Hospital. The tables have been made with the following criteria-

a. Age and Gender distribution of patients.
b. Injure Pattern
c. Injure site pattern
d. Compliance to post exposure prophylaxis
e. Post exposure Prophylaxis

Moreover age and gender entries are also added. The management of the cases were also noted down along with the follow up of the cases.

Results

In our study, 8 patients were in zero to ten year group. 5 patients were age between 11 to 19 years and 10 patients were 20 years or older.

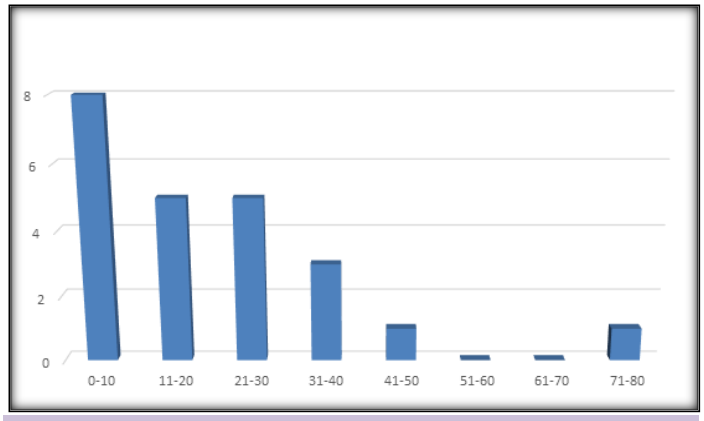


Figure 1: Bar diagram showing age distribution of patients with monkey bite.

Table 1: Age Distribution Of Patients

SL. No	Age Distribution	Number of patients
1	0-10	8
2	11-20	5
3	21-30	5
4	31-40	3
5	41-50	1
6	51-60	0
7	61-70	0
8	71-80	1

Table 2: Gender Distribution: Our study found that 18 patients were male and 5 patients were female. This gives a male to female ratio of 3.6 : 1.

SL. No	Gender	Number of patients	Percentage
1	Male	18	78.26
2	Female	5	21.74

Table 3: INJURY PATTERN: Our study found, 19 patients suffered bite and 4 patients had scratches.

SL. No	Injury Pattern	Number of patients	Percentage
1	Bite	19	82.61
2	Scratches	4	17.39

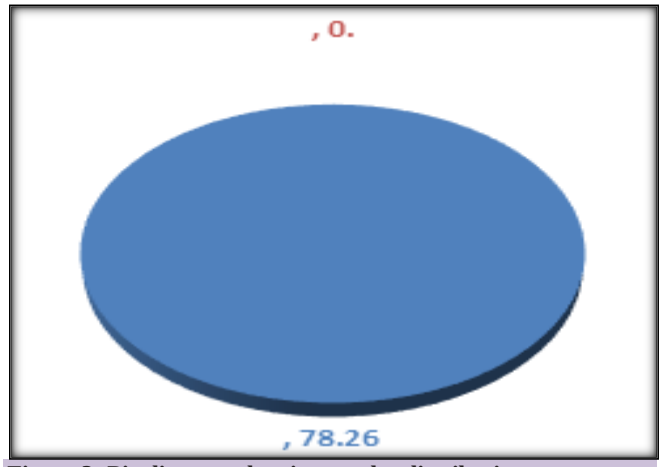


Figure 2: Pie diagram showing gender distribution.

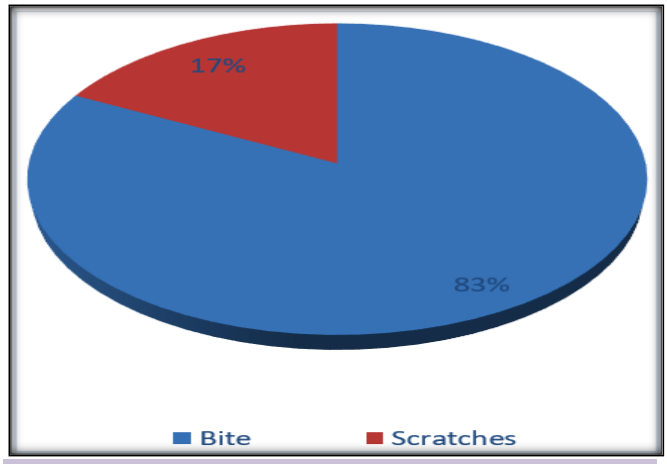


Figure 3: Pie diagram showing injury pattern.

Table 4: Injury Site Pattern: Out of the 19 patients, 13 had bites on the upper limb, 5 patients had on the lower limb and 1 patients bite on the head and neck region.

SL. No	Injury Pattern	Anatomical Sites	Number of Cases	Percentage
1	Bite	Upper Limb	13	68.4
		Lower Limb	5	26.32
		Torso	0	0
		Head & Neck	1	5.26
2	Scratches	Upper Limb	0	0
		Lower Limb	2	50
		Torso	0	0
		Head & Neck	2	50

Table 5: Compliance of Post Exposure Prophylaxis

Sl.no.	Age	Sex		Anti Rabies vaccines taken completed		Anti Rabies vaccines taken Not competed		Anti Rabies Immunoglobulin Taken or not
		Male	Female	Male	Female	Male	Female	
1	0-10	6	2	6	2	0	0	Taken by all
2	11-20	4	1	4	1	0	0	Taken by all
3	21-30	4	1	3	1	1	0	Taken by all
4	31-40	2	1	2	1	0	0	Taken by all
5	41-50	1	0	1	0	0	0	Taken by all
6	51-60	0	0	0	0	0	0	
7	61-70	0	0	0	0	0	0	
8	71-80	1	0	1	0	0	0	Taken by all

All patients had WHO category 3 bites and all received anti rabies immunoglobulin. Out of 23 patients, 22 patients completed the anti- rabies vaccine course.

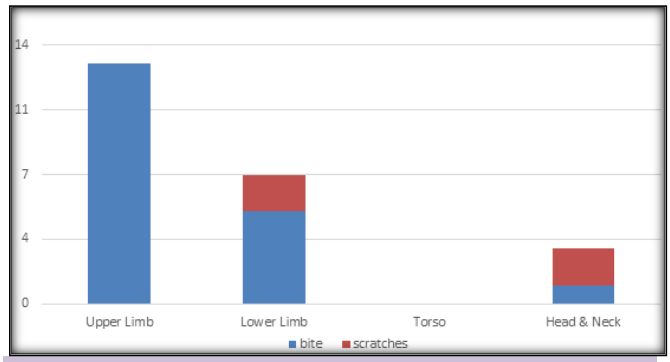


Figure 4: Bar diagram showing injury site pattern.

Discussion

Around 35% (34.78%) of cases are children below the age of 10yrs and 56.52 % cases are individuals below the age of 20. This finding corroborates with the findings of K. Mendhekar, Ichhpujani et al and Shetty et al. in their studies on Profile of Animal Bite Patients in various parts of India.[3,4,20] Blaise et.al in their study also found a similar result with 20.7 % victims were between age 0-15 and 52.6 % were between the age group of 16-39.[13] This pattern seen in the different parts of India and around the world suggests that children adolescents are more likely to fall victim to animal attacks.

The male and female ration of the victims attending the emergency department of KMCH, was found to be 3.6:1. This finding is similar to the finding by K. Mendhekar, Ichhpujani et.al and Shetty et al., in all the three studies male patients were more than twice that of female patients. It clearly indicates the male gender is more than twice likely to fall victim to animal attacks including monkeys.[3,4,14]

Cases of bites outnumbered the cases of scratches in our study by almost by a factor 5:1.[4.75:1]

Most of the bites (68.4%) occurred in the upper limb followed by lower limb and one case on head and neck region. No case of

bite on the torso was noted during the study. The number cases of scratches were equally present of lower limb and the head and neck region. No case of scratches on the upper limb and torso were found in the study. Our findings corroborated with the findings of Blaise et al,[13] but didn't corroborate with other studies of K. Mendhekar and Shetty et al., where lower limbs were found to be the most common anatomical site for the animal bites.[3,14]

All the victims of the monkey bite cases visiting KMCH, except one male individual of the age group 21-30, have completed the anti rabies vaccination while all the victims had received anti rabies immunoglobulin. This finding didn't corroborate with the findings of K. Mendhekar.[3]

All the cases in our study were category III bites and hence all of them received Anti Rabies Immunoglobulin. K. Mendhekar, Jethani et.al and Blaise et.al also found similar very high percentage of category III injuries in their studies if not 100%.[3,5,13]

Conclusion

With the ever increasing urbanisation and shrinking of natural habitats of non human primates, conflict between monkeys and human beings are increasingly becoming frequent. As most of the victims were individuals below the age of 20 and majority of the bites occurred in the upper limb it can be assumed that these individuals were attacked while feeding the monkeys which is evidently a potentially high risk behaviour. Search for foods and easy availability of it near human habitats is the leading cause of such confrontations. Timely intervention, wound care and vaccination and immunoglobulin therapy greatly reduces the number of fatalities from such attacks.

Limitation of the Study: The study was conducted in Kokrajhar Medical College, over a short period and with limited number of patients that attended the hospital with monkey bites. Further multi centric study with a considerably longer study period and geographic area maybe undertaken to find the reason behind the human monkey conflicts and the conditions leading to such attacks. A detailed background analysis may be helpful to unveil the reasons for such attacks.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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