

**Epidemiological study of sea snakebite victims of
Kyaikkami Township (Mon State)**

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An earlier community-based epidemiological study of sea snakebites highlights that its prevalence based on hospital statistics is grossly underestimated and possible influence of fishing technique on its prevalence. In order to clarify the statements, a community-based study of sea snake bite victims was carried out in Kyaikkami, Mon State where its fishing technique differs from the earlier study. A house to house survey was conducted and structured questionnaires designed to cover circumstance of the bite, treatment-seeking behavior, fatality, use of first-aid and prophylaxis were asked to the victims. The total number of the bite for 4yrs is 46. Yearly incidence for 4 yrs (1999-2002) is 27.7, 11.9, 15 and 22.8/100000 respectively. Majority (67%) of them were bitten on hands and 33% on legs while drawing/unloading fish net. Majority of the cases are still using no longer recommended first aid-treatment. No prophylactic measures were taken against the bite (97.8%). Majority (57%) sought treatment from traditional healers consisting of either application of herbal medicine to wound or wound incision and suction. Nine (19.6%) sought hospital treatment, 8 (17.4%) at local clinic and 3 (6.5%) sought home remedy (advising to take coconut juice and rub wound with lime). Since only 19.6% sought hospital treatment, the incidence of sea snakebite based on hospital statistics is grossly underestimated. Health education on use of correct first-aid and taking precautions/prophylactic measures at work should be given to fishing community and practice of harmful treatment of traditional healers and unscientific home remedy should be discouraged.

INTRODUCTION

Sea snakebite is encountered among fishermen working in shallow and deep sea. Some are bitten while sorting out fish at sea especially under insufficient light [1] and others while drawing/ unloading content of fishing net. When bitten at deep sea, it takes several hours to get to shore depending on the level of tide. However, 60-70% of the accidental sea snakebites fail to envenom victims [2]. Specific antivenom is not

available in Myanmar. The incidence of sea snake bite based on hospital data is 0.4% [3]. Community-based studies of snakebite cases elsewhere highlight that incidence of snakebite based on hospital statistics is grossly underestimated [4-8]. Recent community-based study of sea snakebite cases of fishing community of Letkokekone, Yangon Division [9] supports the observation and highlights the possibility of influence of fishing technique on its incidence. The present study aims to verify the above assumptions.

MATERIALS AND METHODS

Community-based epidemiological survey of sea snake bites was carried out in Kyaikkami Township (Kyaikkami, Setse, Karupi and Pa-nga) (Figure 1) with the help of basic health staff of the township. A house to house survey was conducted and structured questionnaire designed to cover circumstances of the bite, mortality, treatment-seeking behavior, first-aid and prophylaxis were asked to the sea snakebite victims or next of kin if the victim was dead. For children, guardian or parents were asked. An interview on key informants and a follow-up study were also carried out. Coded data were entered and analysed using Epi info version (6.04d) software.

Map of survey area of kyaikkami

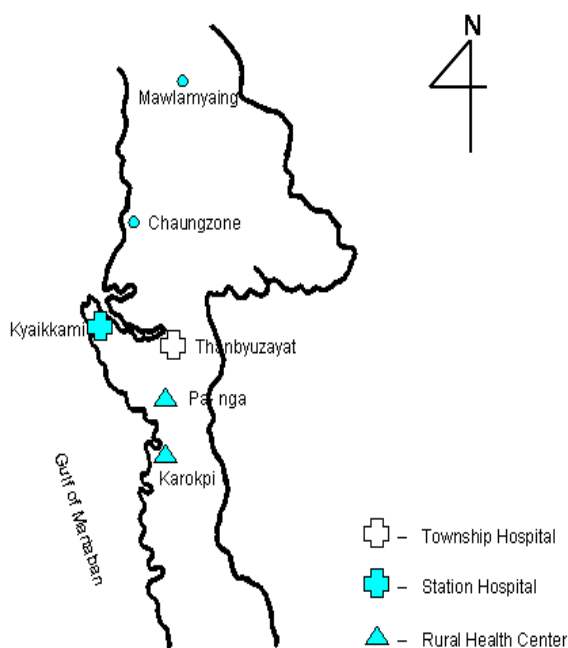


Figure 1. Map of study area of Kyaikkami

RESULTS

Prevalence

The total population of the study areas is 61209. The total number of sea snake bite

covering a period of 4 yrs (1999-2002) is 46 and yearly incidence for 4yr is 27.7, 11.9, 15 and 22.8/100000 respectively. Case fatality rate for 2002 is 7%. The mean age of the victim is 32 yrs (youngest 12 and oldest 65yr) with male preponderance (98%). Majority (98%) were fishermen and most bites (63%) occurred after dark (7pm-6am). The bites occurred throughout the year with peak incidence in October, December and February. Majority of the victims were bitten on hands (70%) and 30% on legs.

First-aid and prophylaxis

Majority (96%) of the victims carried out wound treatment namely tourniquet 26% (12/46), application of herbal extract to wound 23.9% (11/46), wound incision plus application of herbal extract to wound 21.7% (10/46), incision 17.4% (8/46), coagulation 6.5% (3/46) and none 4.3% (2/46). None of them carried out prophylaxis against sea snakebite.

Treatment seeking behavior

Majority 56.5% (26/46) sought treatment with local traditional healer, 19.6% (9/46) hospital, 17.4% (8/46) local clinic and 6.5% (3/46) home treatment.

Treatments from local healers were either application of herbal extract to wound (77%) and wound incision plus suction. Home remedy recommends drinking coconut juice and rubbing the wound with lime.

Pattern of treatment seeking behaviour

Majority 100% (25/25) of the victims from Setse and 67% (2/3) of Karupi seek treatment from traditional healers, 55.5% (10/18) at hospital and clinic. Home treatment was sought in 16% (3/18) of the victims in Kyaikkami.

Symptoms following the bites

The symptoms recalled by the victims were drowsiness (87%), heavy upper eye- lids

(84%), stiffness of limb muscle (80%), tenderness, ache and pain of limb muscle (74%) and passing dark coloured urine (71%).

Circumstances of the bites

Majority 70% (32/46) of the victims were bitten on hands (24 while drawing/unloading conical net + 5 sorting fish + one catching fish using a bag net + one while carrying fish basket). Thirty percent (14/46) of them were bitten on legs while drawing/unloading conical net (10/14), catching fish using a bag net (2/14) and while carrying fish baskets (2/14). History of sea snakebite bite was recalled by 24% of the victims.

Perception

Majority (80%) of the victims were aware of sea snake and 94% had seen the snakes and 89% were familiar with two species of sea snake. Majority (98%) of the victims believed that all snakes are poisonous.

DISCUSSION

According to the survey it is evident that sea snakebite is an occupational hazard of our fishermen. The yearly prevalence of sea snake bite for 4 yrs (1999-2002) is less than that of Letkokekone, another fishing community in Yangon Division (158.1, 77.5, 69, and 27/100000 respectively) [9]. It suggests that fishermen from Letkokekone are more prone to sea snakebite because of their technique of catching fish in shallow water seashore using stake net compared to deep-sea fish catchers of Kyaikkami who use conical net (Figure 2). It appears that shallow water fish catchers also carry 10 times more risk to get sting from jelly fish during summer and 2 times more risk to sea snake bite.

Majority of shallow water fish catchers are bitten on legs while setting up/drawing the fishing net under sea [9]. In contrast, deep sea fish catchers are bitten on hands (63%) while drawing/ unloading fishing net and

sorting fish, suggesting that the site of bite is related to technique of catching fish. According to the survey, some fishermen are using rubber gloves as a protective measure against injury sustained from drawing the net. Health education on taking special precautions/ measures at work should be further emphasized and promoted. Majority of the victims were bitten after dark. It has been reported that two sea snake bite cases admitted to Yangon General Hospital were bitten on hands while sorting fish at sea after dark under insufficient light [1]. Need for provision of good illumination at work is essential and should be emphasized.



Figure 2. Picture of a conical net

Since majority are still practicing no longer recommended first-aid treatment as in the previous study [9], the community should be discouraged on taking harmful wound treatments and educated on use of correct first-aid (compression immobilizations first-aid using crepe bandage) [9].

The treatment seeking behavior of two fishing community (Letkokekone and Kyaikkami) appears to be similar [8]. Majority of them seek treatment from local traditional healers [9] whose harmful treatment should be discouraged. More numbers of victims from Kyaikkami sought medical treatment compared to that of Letkokekone. One of the reasons for seeking early medical treatment by the victims is their wish to return to work as soon as possible. The favorable outcome of the cases treated by traditional healers

attracts higher number of victims seeking treatment with them. It was found that all 25 victims from Setse village sought treatment from traditional healers. Practice of unscientific home-remedy should be discouraged since it gives a false sense of security to the victim.

Since only 9/46 victims sought medical treatment, the incidence of the bite based on hospital data is grossly underestimated. In order to get true incidence, sea snakebite should be made a notifiable disease and victims should be encouraged and educated to seek medical treatment in order to receive proper medical care.

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