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1. PURPOSE: To provide information of interest and assistance to medical services of the U. S. Armed Forces in RVN.

2. GENERAL: This headquarters does not necessarily endorse the professional views or opinions that may be expressed in this pamphlet apart from official notices. The contents of this pamphlet are not directive in force.

(AVHSU)

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INTRODUCTION

Because snake bite is one of the most poorly understood conditions encountered in the practice of medicine in Vietnam, we are devoting this entire issue of the USARV Bulletin to the problems of snakes and snakebite.

This is a very highly emotionally charged situation which produces unnecessary fear in everyone concerned with the care and treatment of the victim.. ....including the physician. Therefore, this volume is intended to be used as a guide in the proper handling of snake bite victims.

It is hoped that this work will be distributed to every medical unit in-country and that it will become a mainstay in the library of each unit responsible for the care and treatment of patients.

This work is based on the experiences gained by Major Frederick G. Berlinger, MC, of the 93d Evacuation Hospital, Long Binh, Vietnam, and Major Herschel Flowers, VC, of the 20th Preventive Medicine Unit, also on Long Binh Post. It was further edited by Col David Edwards, MC, and LTC Thomas A. Verdon Jr., editor of the USARV Bulletin.

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A

RATIONAL APPROACH

TO SNAKE BITE

IN VIETNAM

ASIAN COBRA (Naja Naja)

Color: varies from light brown or greenish brown to solid black.
Length: adults vary from four to five feet with some found up to seven feet.
Incidence: found throughout most of the lowland areas of Vietnam in rat infested, populated places. It is commonly found in the Mekong Delta region.

The venom of the Asian cobra is neurotoxic. There is immediate swelling and pain at the site of the bite and discoloration of the bite area may occur later.

A systemic reaction is characterized by rapid onset of neurological symptoms including ptosis (often the first sign), incoordination, slurred speech, and dysphagia. The major cause of death is respiratory paralysis. With a sufficient dose of venom, death may occur within one hour.

If a cobra bite is positively established, start treatment immediately, unless the patient is asymptomatic and can be evacuated to a snake bite treatment center within fifteen minutes. Haffkine Polyvalent Antivenin (Bombay) is used.

Dosage is 10 to 50 ampules, starting with ten ampules and continuing until paralytic symptoms cease and nerve function is restored. Dilute each increment in 500cc of D5W or D5S and give intravenously. Skin test for hypersensitivity before administering the antivenin and desensitize if the patient is allergic to horse serum. Tracheostomy and assisted ventilation may be necessary. Parenteral antibiotics should be given. Supportive drugs may be required.

MALAYAN PIT VIPER (Agkistrodon rhodostoma)

Color: irregular brown patterned. Somewhat similar to the American Copperhead
Length: adults - two to three feet.
Incidence: A ground dweller. It is found throughout the southern lowlands of Vietnam, in and around trash piles. Common in rubber plantations.

Malayan pit viper venom produces hemolysis. There is immediate pain and swelling and often discoloration of the site of the bite. Systemic symptoms are characterized by clotting defects and hemorrhagic phenomena, especially hemoptysis and bleeding from the mucous membranes.

Start treatment only when there is evidence of hemorrhagic phenomena. Malayan pit viper Antiven (Thai Red Cross Society) is used. Dosage is two to ten ampules, depending on the severity of the bite. Usually no more than two ampules are required. Dilute each increment in 500cc of D5W or D5S and give intravenously. Skin test for hypersensitivity before administering the antivenin. Have epinephrine, benedryl, and steroids available. Antibiotics, pressors, and rarely either blood or I.V. fluids may be required.

BAMBOO VIPER (Trimeresurus sp.)

Color: green
Length: adults - two to three feet.
Incidence: an arboreal dweller, it is found throughout the lowland areas of Vietnam, in shrubs, hedgerows, sugar cane fields, etc.

Venom of the bamboo viper produces hemolysis. There is immediate pain and swelling and often discoloration at the site of the bite. Systemic symptoms characterized by clotting defects and hemorrhagic phenomena, especially hemoptysis and bleeding from the mucous membranes, as in the case of the pit viper.

Start treatment only when there is evidence of hemorrhagic phenomena. Crotaline Polyvalent Antiven (Wyeth) is used. Dosage is two to ten ampules depending on severity. Usually no more than two ampules are required. Dilute each increment in 500cc of D5W or D5S and give intravenously. Skin test for hypersensitivity before administering the antivenin. Have epinephrine, steroids, and benedryl available. Antibiotics, pressors, and rarely either blood or I. V. fluids may be required.

SEA SNAKE (15 species)

Color: varies with the species. All species have thin oar or rudderlike tails. They resemble eels but they have scales.
Length: varies with the species.
Incidence: found in the coastal waters of the South China Sea but during the rainy season they may be found in the river mouths and estuaries. They are helpless on land and never leave the water. They are very shy and rarely bite man. The only reported bites involve native fishermen who handle the snakes when they become trapped in their nets.

Sea snake venom is myotoxic. The bite is rare, occurring primarily among fishermen who catch the snakes in their nets. There are often multiple pinhead sized wounds, little local reaction, tenderness in the skeletal muscles, especially the larger muscle masses and the neck. Pain on motion, sweating, thirst, oral paresthesias, and pain on swallowing which may progress to trismus, extraocular palsy, dilated pupils, ptosis, and generalized weakness. Myoglobinuria is a diagnostic sign. Death may occur from respiratory paralysis.

These snakes have a highly toxic venom. Sea snake antiven (Cwlth Serum Labs) is used. Dosage is one to four ampules with one ampule usually required. Dilute each increment in 500cc of D5W or D5S and give intravenously. Skin test for hypersensitivity before administering the antivenin and desensitize if the patient is allergic to horse serum. Supportive drugs may be required.

KRAIT (bungarus sp.)

Color: dark base color usually of black or dark greyish brown with light colored rings running the entire length of the body. The rings are white or yellow.
Length: adults - up to five feet.
Incidence: found throughout Vietnam.

Krait venom is neurotoxic. Little or no reaction occurs at the site of the bite.

Systemic reaction is identical to that of the cobra with a long latent period of three to ten hours between the time of the bite and the onset of the neurologic symptoms.

If a krait bite is established treatment can be delayed until the patient can be evacuated to a snake bite treatment center. If neurological symptoms appear, start treatment immediately . Haffkine Polyvalent Antiven (Bombay) is used. Dosage is 10 to 50 ampules, starting with ten ampules and continuing until paralytic symptoms cease and nerve function is restored Dilute each increment in 500cc of D5W or D5S and give intravenously. Skin test for hypersensitivity before administering the antivenin and desensitize the patient if he is allergic to horse serum. Tracheostomy and assisted ventilation may be necessary. Parenteral drugs should be given. Supportive drugs may be necessary

GENERAL MANAGEMENT

The four most important rules are:

A. Obtain a complete history to verify that the patient has been bitten by a snake and determine sensitivity to horse serum. The great majority of bites seen at the snake bite treatment centers are not snake bites but scorpion and insect bites. All antivenins are made from horse serum and can kill a sensitized patient. Do not give antivenin unless it is evident that the patient was bitten by a snake, the snake was identified as venomous, or specific symptoms appear, especially in the case of pit viper bites. Of the 115 species of snakes found in Vietnam only 17 are poisonous.

B. Reassure the patient. Snake bite patients, both actual and suspected, are very frightened, and many are convinced that they are going to die. Fear can easily stimulate shock, dominate the clinical picture, and mislead the physician into administering unneeded and potentially dangerous antivenin. Tell the patient he is not going to die; if necessary, an appropriate dose of tetanus toxoid can serve as a placebo.

C. Limit first aid to reassurance and tetanus toxoid. Do not incise the bite. Do not apply a tournequet. Do not pack the area in ice. These procedures merely complicate the situation. Treatment of a snake bite patient requires sufficient doses of specific antivenins. Non-specific antivenin can be fatal.

D. Evacuate the patient to a snake bite treatment center as rapidly as possible. A confirmed snake bite requires concentrated specific therapy and experience usually not available in medical treatment facilities. Snake bite treatment centers are at the 95th Evac Hospital in Da Nang, the 67th Evac Hospital in Qui Nhon, and the 93d Evac Hospital in Long Binh.

If a snake bite has been verified and the patient cannot be evacuated:

1) Viper bites should not be treated until hemorrhagic symptoms appear. Follow the coagulation defect with serial clottings times, done every four to six hours. Mild to moderate elevations in clotting time, in the absence of hemorrhagic phenomena, are not indications for the administration of antivenin. There are specific antivenins each for the Bamboo Viper and the Malayan Pit Viper.

2) Cobra bites require prompt administration of the antivenin. If the patient cannot reach the nearest snake bite treatment center within fifteen minutes, specific antivenin must be administered. The cobra is distinctive and easy to identify. The bite area is painful and swollen, and systemic poisoning is marked by neurologic symptoms.

3) Krait bites usually do not require prompt treatment. Administration of antivenin usually can be delayed for several hours. The banded markings of the krait are distinctive. The bite is painless and the onset of neurological symptoms is delayed. The same antivenin is used for both krait and cobra bite.

4) The patient should be skin tested with 0.02cc subcutaneously before administering antivenin. If sensitive the patient should be desensitized by giving lcc of the antivenin in diluted form intravenously every five minutes for one to two hours. This may not be possible if the patient has profound neurological or hemorrhagic symptoms. Benedryl, epinephrine, and steroids must be on hand. Some patients may have negative skin tests but still are capable of developing anaphylactic shock.

IN SUMMARY

1. Obtain a complete history and, if possible, the snake.

2. Reassure the patient.

3. Limit first aid to tetanus toxoid and do not traumatize the bite area.

4. Evacuation of the patient to a snake bite center for treatment must be accomplished without delay.

5. Treat viper bites when hemorrhagic symptoms appear.

6. Start antivenin immediately on verified cobra bites.

7. Start antivenin on verified krait bites only when evacuation cannot be accomplished or neurological symptoms appear.

8. Use the antivenin specifically prescribed for each individual snake.

9. Skin test for hypersensitivity before administering the antivenin. Anticipate reactions to the test.

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Remember that poisonous snake bite is very rare and that, to date, only one death has occurred in the US military forces in Vietnam. Moreover, if and when a venomous snake does strike a human being it does so out of fear and is not intending to kill its victim. Therefore, the bite from a venomous snake will often not cause systemic envenomation because very little venom is injected. POISONOUS SNAKE BITE IS NOT SYNONYMOUS WITH SNAKE BITE POISONING!

NOTES

NOTES

USARV MEDICAL BULLETIN

The USARV Medical Bulletin is published bi-monthly by Headquarters, United States Army Vietnam as the medium for disseminating material of professional and administrative interest to all medical personnel of USARV. Information in this publication is for use by this command and does not necessarily reflect the opinions of the Department of the Army, the USARV Surgeon, or the editors.

The Surgeon, USARV, invites all members of the Army Medical Service including the Medical Corps, Medical Service Corps, Army Nurse Corps, Dental Corps, Veterinary Corps, Army Medical Specialists Corps, and enlisted personnel, as well as other members of the medical profession in Vietnam, to submit articles to be considered for publication in the Bulletin.

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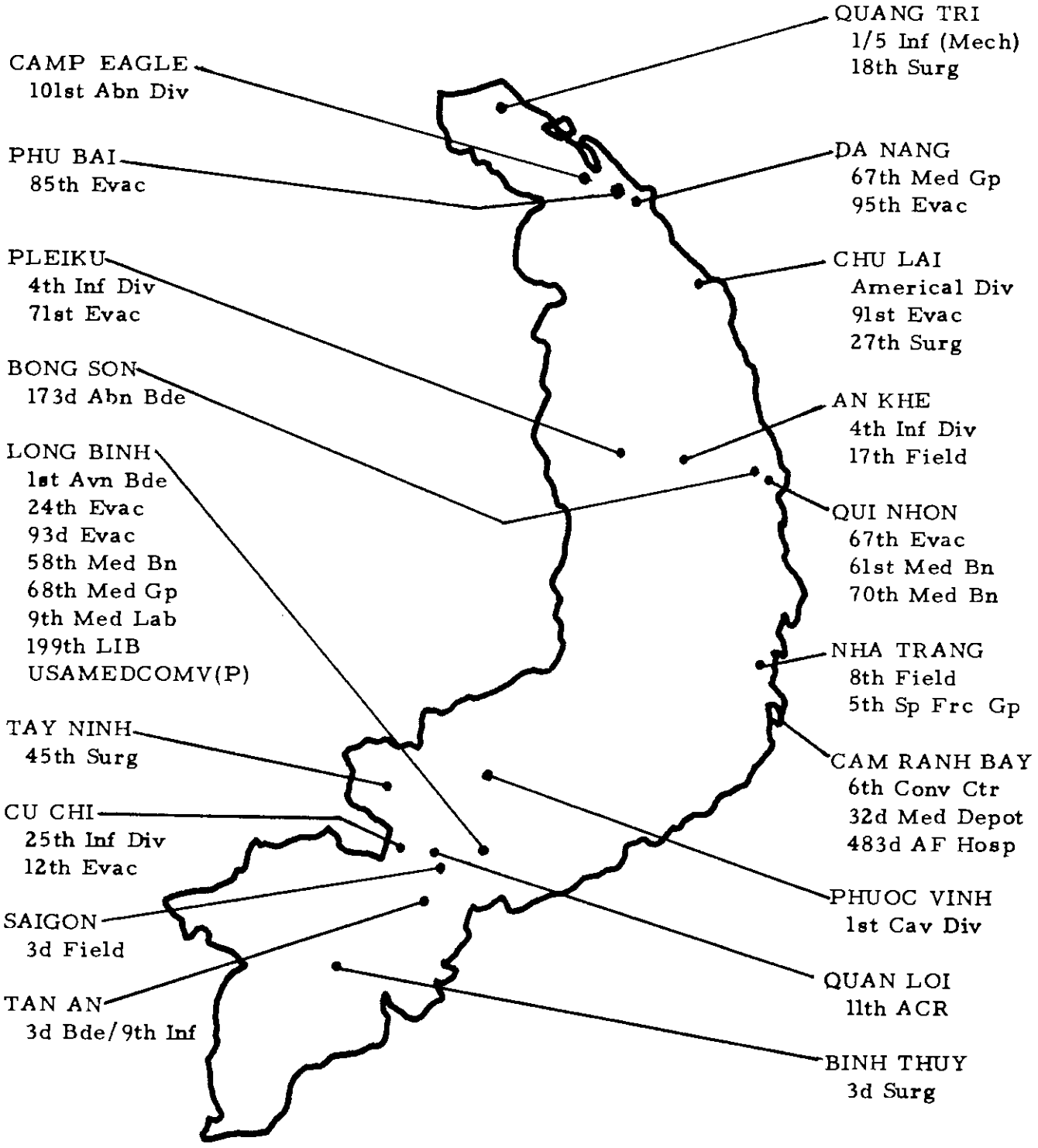
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