EFFECTS OF A BITE FROM AN ASIATIC PIT-VIPER

(Trimeresurus albolabris)

INTRODUCTION

Although bites from venomous reptiles on humans are not infrequent, the case histories of many such bites are never reported. Details of the effects of envenomation on humans from the Trimeresurus group of asiatic pit-vipers are particularly scarce, possibly as a result of the low level of research that has been carried out into the biology of the genus in general. However, the present knowledge of the venom toxicity of the genus does suggest that the group can essentially be divided into two categories based on habitat selection. The first are ground living forms which have a relatively potent venom, death having been recorded from two species of this type - T. flavoviridis and T. murosumus. The second assemblage are arboreal snakes, bites from which have much less serious consequences in humans, their venom being relatively weaker.

This report concerns the effects and treatment of a bite from a member of the arboreal group - T. albolabris. It is not, however, presented as a recommended treatment for bites from this form, as the effects of snake bite are well known to vary from individual to individual, it merely gives details of the symptoms and treatment as they relate to this one particular case.

CIRCUMSTANCES

In early 1976, whilst in the process of removing pieces of unshed skin from an 18 inch T. albolabris, the author received a bite on the end of the thumb. The snake was being held by the bitten hand when it gave a quick jerk, and managed to imbed a single fang. The body temperature of the snake was low at the time, probably closely approximating the air temperature which was 25-26°C.

SYMPTOMS AND TREATMENT

DAY 1. (10.10 a.m.) The most immediate effect of the bite was an intense burning pain at the site of the wound. A tourniquet was immediately applied at the base of the thumb, but was later discarded for one which was positioned at the base of the arm. This was applied for 15 minute periods with 2 minute release intervals. Approximately 90 minutes after the bite, three intramuscular injections were given: (1) 600 mg lincomycin + 150 mg clindamycin; (2) Tetanus (Att + Humotet) and (3) 100 mg Hydrocortizone. At 11.30 a.m. the arm had begun to discolour. The application of the tourniquet was discontinued at 4 p.m. and by this time the whole of the arm had begun to show signs of swelling, particularly the thumb. Mild feelings of nausea were experienced.
DAY 2. A great deal of pain at the site of the wound. The whole arm was showing marked blackish colouration. Swelling continued over both arm and hand, indeed the thumb had become so swollen that it could not be bent. However, apart from the thumb, no great pain was experienced in other affected areas (10.00 a.m. photographs taken, see centre-fold).

DAY 3. No change. In an effort to reduce pain, the thumb was wrapped in a hanky filled with ice cubes, a method which seemed to be most effective.

DAY 4. Hand swelling reduced. Blackish colouration on the arm beginning to turn yellow. Any pain in this area had almost gone although there was no change in that of the thumb.

DAY 5. Hand and arm swelling gone.

DAY 6. Arm was only mildly discoloured.

DAY 9. Due to pain and swelling in the thumb undergoing no change an incision was made at the site of the wound using a sterilized scalpel, in an attempt to release some of the pressure.

DAY 10. There was a definite improvement in the thumb, with the swelling already beginning to decrease and some bending movement possible. A great deal of mucus however continued to flow from the incision. From this stage on there was a gradual improvement, although the mucus still continued to flow for the next month or so. Nevertheless, it took all of 5 months before the bitten thumb was anywhere near normal use.

DISCUSSION

The type of treatment applied in this case appears to have been adequate for such a bite. The administration of an antiserum was considered unnecessary because of the known toxic strength of the venom, although in view of the highly variable nature of snake bite, the effects following the bite were nevertheless closely monitored. One improvement on the treatment, however, could have been in lancing the wound at a much earlier stage in the treatment, preferably soon after the actual bite had been received, as it was subsequently found that there was no real improvement in the condition of the thumb until this action had been taken.

Clearly from the symptoms described, T. albolabris has a venom which is mainly of haemotoxic content, acting on the tissues and blood system. Conversations with other herpetologists who know of instances when people have been bitten by this form, indicate that the severity of the symptoms are highly variable, ranging from only minor discomfort to somewhat more painful symptoms. Obviously the physical condition and mental state of the bitten individual is important, but possibly a factor more important, and often overlooked, is the amount of venom released by the snake into the wound. Minton and Minton (1971) suggest that venomous snakes basically
deliver three kinds of bite. The first is a warning bite, which is
given only to discourage an aggressor and in these instances only
a small amount of venom is delivered. A second variation may be
when the reptile is angry and in such cases approximately 11% of
the venom gland is released. The Mintons suggest, however, that a
third type may result if the snake is injured or in a state of
severe fright, and that this may result in unusually large amounts
of venom being released. It is possible that due to the circum-
stances surrounding this particular case (in which the snake had
been seized around the neck) that the snake reacted by delivering
a bite of the third kind and that this was primarily the reason for
the effects that followed.

This report tends to confirm the view that bites from
Trimeresurus albolabris do not produce serious symptoms in humans
and that the effects are mainly confined to the area immediate to
the wound. Nevertheless, it should be remembered that in this
instance only one fang made the wound, which suggests that the full
effects of a bite from this species were not experienced.

REFERENCES

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Condition of the thumb 24 hours after being bitten, at this stage little or no bending movement was possible due to the amount of swelling. The site of the fang puncture can be clearly seen.

Condition of the arm at the same time showing areas most affected by discolouration and swelling.