

(84) TECHNIQUE FOR SURGICAL IMPLANTATION OF TRANSMITTERS IN SNAKES

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Abstract: Techniques for placing transmitters in snakes are described in the herpetological literature from 1972 to present. They include feeding waterproofed transmitter packages, forcefully or hidden in prey items, and surgical implantation, intracoelomically or subcutaneously, using general anesthesia with and without local anesthesia or no anesthesia. Surgical implantation of radio telemeters is a relatively straightforward procedure which has been used by the authors in *Crotalus willardi*, *Eunectes murinus*, *Python sebae*, and *Bitis gabonica*. Manual restraint coupled with local anesthesia has provided good immobilization and analgesia in all cases. Venomous species are held using plexiglass tubes and large pythons and anacondas are fairly easily restrained after a tubular mask is taped over their heads. Local analgesia is provided by administering 0.2%-1.0% lidocaine (without epinephrine) in a modified line block, subcutaneously and intramuscularly dorsal and cranial to the anticipated incision site. The ideal site for intracoelomic implantation is caudal to the stomach and gall bladder. The site can be ascertained by counting scales, or by manual palpation of viscera. Sterile technique and instruments are used for the procedures. An incision is made between the lateral scales, one or two rows dorsal to the interface of the lateral and ventral scales. The length of the incision is appropriate to the size of the telemeter. After the skin is incised and blunt dissection used to create a space slightly caudal to the incision in the coelom or subcutaneously for the transmitter, a long hollow rod is burrowed subcutaneously anterior to the incision, at a length equal to the length of the antenna. At the anterior end of the rod, a 0.5 cm incision is made and the antenna is passed into the hollow rod. The rod is then pulled through the anterior incision, leaving the antenna positioned subcutaneously. Closure of the coelom is achieved with 2-0 absorbable suture in an interrupted horizontal mattress pattern. A layer of subcuticular sutures are placed if possible. Skin is closed with simple interrupted sutures of nonabsorbable material in direct apposition. A liquid skin adhesive is applied over the incision sites to make them impervious to water.

The use of anesthesia is essential for humane reasons. Local anesthesia is safer than general anesthesia and requires no significant recovery time post-operatively. Animals can be released within 24 hours and have been observed eating and otherwise performing normal behaviors subsequent to this procedure. No deaths attributable to the surgical procedure or location of the transmitters have occurred to date.

WDA ALASKA '96

45TH ANNUAL CONFERENCE OF THE WILDLIFE DISEASE ASSOCIATION

PROGRAM AND ABSTRACTS OF PAPERS PRESENTED JULY 21-25, 1996

HOSTED BY:

ALASKA DEPARTMENT OF FISH AND GAME

HELD AT:

UNIVERSITY OF ALASKA FAIRBANKS

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