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An Alternate Method of Descenting Skunks

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ABSTRACT: Striped skunk (*Mephitis mephitis*) scent glands were ligated closed with waxed dental floss to allow them to be handled during toxicological studies without fear of scenting. This descenting technique was more rapid and less traumatic than scent gland removal. Thirty-four skunks were kept for ≤127 days and did not display behavioral or physical abnormalities due to this procedure.

Key words: Striped skunk, *Mephitis mephitis*, descenting, ligation, techniques.

Animals used in many toxicological studies must be handled while in a healthy, aware state. Muzzles, handling cones, squeeze chutes, and other physical means of restraint (Day et al., 1980; McCullough et al., 1986) help protect animals and the handler from injury. These methods do not adequately protect the handler from a skunk's (*Mephitis* spp.) musk which, in addition to its offensive odor, causes extreme pain when sprayed in the eyes and can cause at least temporary blindness (Fowler, 1978). The traditional method for solving the problem of skunks' chemical defense is to completely remove the scent glands (Hamann, 1969; Fowler, 1978). This surgical procedure has the potential for infection and requires a veterinarian or a skilled technician. This paper presents an alternative to scent gland removal in striped skunks that can be performed rapidly and safely by inexperienced personnel.

Skunks for research purposes are usually wild-caught, either by live trapping or by direct pursuit (Adams et al., 1964; Jacobsen et al., 1970). Trapped skunks were approached with a large cloth or piece of plastic sheeting held in front of the handler to act as a shield against the skunk's musk. The cloth was wrapped completely around the trap, leaving the door end free. The trap was then tipped on end and a large wad of cloth was used to press the skunk to the bottom where it was injected with immobilizing drugs. Skunks rarely sprayed during this handling as long as pressure was maintained on the animals.

Ketamine hydrochloride (Vetalar, 100 mg/ml, Parke-Davis and Company, Joseph Campan at the River, Detroit, Michigan 48232, USA; Division of Warner-Lambert Company, Morris Plains, New Jersey 07950, USA) and acetylpromazine maleate (Acepromazine, 10 mg/ml, Ayerst Laboratories, American Home Products Corporation, 685 Third Ave., New York, New York 10017, USA) in a 10:1 volumetric ratio was used for immobilizing skunks. The animals were injected intramuscularly (i.m.) with about 0.3 ml premixed drug/kg body weight. Total immobilization time was about 45 min which was sufficient time for this procedure.

The immobilized skunk was held with the abdomen up, the head toward the handler, and the anal opening everted by the handler's thumbs. Gently squeezing the rear portion of the skunk's thigh adjacent to the tail helped evert the opening, exposing the papillae lateral to the anus. A papilla was grasped securely with a small Crile hemostatic forceps by an assistant. With light traction, the neck of the gland was extended and swabbed with 95% ethyl alcohol to remove any feces or foreign material. Waxed dental floss was looped around the extended papilla, tied securely with a square knot, and clipped close to the knot. A second ligature was added for security. Dental floss was used for tying the glands because smaller diameter material cut through the papillae and larger material could not be tightened sufficiently to prevent musk ejection. Waxed dental floss was easier to tie and made more secure knots than unwaxed floss.

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After tying, the neck of the gland was released, allowing the gland to retract to its normal position. The process was repeated with the second scent gland.

This method was used on 34 skunks, five of which were held in captivity >120 days. The skunks were used in compound 1080 (sodium monofluoroacetate) MLD_{50} studies and those skunks that recovered from their doses of compound 1080 were sacrificed with T-61 euthanizing agent (Taylor Pharmaceutical Corporation, Decatur, Illinois 62525, USA), at intervals from 14 to 127 days after tying the scent glands. In all cases, the ligatures and the distal portions of the scent gland papillae had sloughed by 21 days after tying the glands. Tissues at the ligature points had scarred and fused, sealing the gland orifice. One animal, sacrificed after 3 wk, retained the ability to eject musk, but it was only from a single papilla and at a much-reduced level. Of the five skunks euthanized after 120 days, all had scent glands similar in size and firmness to freshly removed glands from unaltered skunks.

None of the skunks died as a result of this procedure. Animals were monitored at least daily and no behavioral or physical changes were observed during the time the skunks were in captivity, nor was their behavior different from unaltered skunks kept in the same facility. Skunks receiving this treatment should not be released due to their lack of natural defenses and because the long-term effects of this treatment are unknown.

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