


COMPARISON OF TWO TECHNIQUES FOR SURGICAL  
IMPLANTATION OF TEMPERATURE-SENSITIVE RADIO-  
TRANSMITTERS IN ARCTIC GRIZZLY BEARS  
(*URSUS ARCTOS*)

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ABSTRACT

A temperature-sensitive radio-transmitter was surgically implanted in each of four grizzly bears. The procedures were performed in late May and June on bears captured in the northern foothills of the Brooks Range, at approximately 69° north latitude. Animals were immobilized with a combination of phencyclidine and acetylpromazine administered by a dart syringe from a long range projector inside a helicopter. General anesthesia was induced and maintained with ether. Transmitters were 13 cm long by 4.5 cm diameter and weighed 140 g. Each was placed in one of two anatomical locations. One was located under the subcutaneous tissue, perpendicular to the vertebral column in the neck. Each of the other three was placed free in the abdominal cavity through a ventral midline incision. The second procedure provided easier access to the surgical site and a marked saving in time. During the active period there was a noticeable difference in maximum transmitter range. The neck implant signal could be received and processed from approximately one mile while the abdominal implant signals were limited to a quarter to a half mile. During the denning season there was no detectable difference in range among the transmitters. The signals from all four could be received and processed at a maximum range of a quarter mile. Overall, the abdominal transmitter location was the more desirable for field implantation. The surgical procedure was much easier and faster while still allowing the signal to be satisfactorily received and processed.

A halibut is the central figure, dressed in traditional Inuit clothing. It wears a heavy, textured parka with a fur-lined hood and a dark belt. The fish is positioned as if it were a person, with its head and tail visible. The background is a textured, light-colored surface, possibly a wall or a backdrop, with some dark, shadowed areas at the bottom.

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100 YEARS  
AND  
100 YEARS  
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