

University of Idaho

Animal Care and Use Committee

Standard Operating Procedure (SOP)

Number: 2001.2

Version: 1

Last Updated: 7/19/2000

Title: Tailhead Adipose Tissue Biopsy

Species: Bovine

Purpose

Adipose tissue biopsies are used for a variety of detailed laboratory analysis including but not limited to histological morphology, biochemical analysis, and tissue culture. Their use is relative to the project under study.

Potential Impact on Animal Subjects

The expected degree of impact on the research animal is relative to the sample size obtained. Small sample sizes will cause only minor discomfort to animal subjects when anesthetics have worn off. No swelling to minor localized swelling at the biopsy site may occur. Sutures may cause local irritation until removal at 10-14 days post-operatively.

Description

The surgical site is located 2-6 inches lateral to the tailhead. The tail is gently restrained to the opposite side of the surgical site using gauze or string tied around the tail and the animal's neck. The animal and surgical site are then prepared as described in SOP 2001.1, Preparation of Mammals for Surgery.

Approximately 3-5 ml of 2% lidocaine is infiltrated into the area surrounding the surgical site. If animals are uncooperative, a 10-30 mg (0.025-0.05 mg/lb) intravenous bolus of xylazine will be administered for sedation. The final surgical scrub will occur after application of the lidocaine.

Using sterile instruments and appropriate aseptic technique, a 2-3 inch S-shaped incision is made in a cranial to caudal direction over the desired fat pad at the tailhead. An appropriately sized sample of adipose tissue is removed by blunt dissection. Minor bleeders are temporarily clamped with a hemostat or cauterized. If any significant bleeders are encountered, they are ligated with absorbable suture material of appropriate size. If needed, a non-absorbable suture material is used to reduce any dead space created by the biopsy. The skin is closed with a series of non-absorbable sutures in a simple interrupted and/or horizontal mattress pattern.

Anesthesia recovery is from local metabolism of the lidocaine in 2-5 hours. Post-operative analgesics are generally not required. Animals will be monitored for undue signs of discomfort (rubbing, swelling, or bleeding at the incision site) not less than twice daily for the first 24 hours post-operatively. If complications arise, the attending veterinarian will be contacted. Skin sutures will be removed at 10-14 days post-operatively.

References

1. Large Animal Anesthesia. TW Riebold, DO Gobel, DR Geiser. Iowa State University Press. 1982.
2. Experimental Surgery in Farm Animals. RW Dougherty. Iowa State University Press. 1981.
3. Techniques in Large Animal Surgery. A. Simon Turner, C. Wayne McIlwraith. Lea & Febiger. Philadelphia. 1982.