

Basic Health Sciences

Poster

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Model of a critical size defect in the New Zealand White rabbit's tibia

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Introduction: Critical size defects (CSD) in the long bones of New Zealand White rabbit (*Oryctolagus cuniculus*) have been used for years as an experimental model for investigation of the effectiveness of a new bone substitute materials. There are varieties of protocols available in the literature. This technical note attempts to present an alternative surgical technique of a CSD in the New Zealand white rabbit tibia. **Methods:** Thirty-nine New Zealand White rabbits were used in this study. A CSD of approximately 4.5 mm (width) X 9.0 mm (length) was surgically drilled at the proximal tibial metaphysis, approximately 1 cm from the knee joint. The surrounding of soft tissue was repositioned and sutured layer by layer with bio absorbable surgical suture. Povidone soaked gauze and bandage were used as a dressing. There is no control group used in this study. **Results:** This alternative method created good CSD with less bleeding from the muscle observed. No mortality on other surgical complications were observed within 6 weeks, 12 weeks and 24 weeks following surgery. **Conclusions:** A simple and safe method for performing critical size defect was demonstrated and recommended as an approach for surgery on New Zealand White rabbits.

KEYWORDS: New Zealand White rabbit, critical size defect, surgical approach, bone healing