

Introduction

New Zealand White (NZW) rabbits are commonly used for preclinical studies of endovascular interventions. Here we demonstrate a technique of common femoral artery (CFA) cut down to establish endovascular access in NZW rabbits.

Methods

The following procedure was performed on 4 consecutive 4.5-5kg NZW rabbits. All rabbits underwent general anesthesia using isoflurane and mechanical ventilation with continuous hemodynamic monitoring. The groin was shaved and sterilized. A 3cm diagonal incision along the plane of the inguinal ligament was made. Retraction of the subcutaneous fascia reveals the adductor magnus medially and the vastus medialis laterally. Dissection toward the inguinal ligament will reveal the femoral vein. The CFA runs immediately underneath the vein. A loose suture is placed around the proximal CFA. A micro-introducer kit was used to puncture the CFA proximally and introduce a 5-French sheath. Arterial backflow confirmed placement. To secure the sheath, the proximal suture was tightened. A three-way rotating hemostatic valve was attached to the sheath for endovascular device introduction. Upon completion of endovascular intervention the sheath is withdrawn and the suture is tied over the proximal CFA. After completion of the procedure all animals underwent functional testing of the ipsilateral leg every 6 hours. All animals were sacrificed at 24hrs.

Results

All 4 rabbits had successful femoral artery access during endovascular intervention. Average procedural time was 2.5hrs. One animal lost access temporarily due to retraction however the sheath was easily re-introduced. One animal had temporary ipsilateral leg weakness which resolved after 6hrs. Animals demonstrated no signs of pain or discomfort up to 24hrs.

Conclusions

Transfemoral arterial access via surgical cut down is safe and effective for endovascular interventions in New Zealand White rabbits.

Learning Objectives

Understand the relevant anatomy and surgical technique to establish transfemoral access in New Zealand White rabbits.

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