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 We use this protocol and it's working

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🌐 SPARC Cat - Sham Control Chronic Cat 2 Day 30

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SPARC

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ABSTRACT

This is a procedure for a sham control chronic cat experiment (Day 30-terminal) for cystotomy (bladder surgery). The cystotomy is performed without UroMOCA implantation. The cat is observed daily and imaged on day 0, 14 and 30 to track changes to the bladder and overall cat health in response to the cystotomy. This protocol includes urodynamics and imaging for Day 30 in the chronic experiments.

MATERIALS

Cat - Domestic short-haired cat. Male or female. 6-24 months; 3.5-5.0kg
 Syringe Pump - Genie Touch; Kent Scientific
 Pressure Transducer - Catalog # 503067
 WPI Amplifier - 4 channel transbridge
 WPI National Instruments multifunction I/O device - NI USB 6259
 National Instruments Laptop with Labview software
 Tubing - Masterflex L/S Platinum-Cured Silicone Tubing ID 3/16 "; Cole Parmer
 BNC cables
 Tubing to catheter - APIS
 Laborie Catheter - Argyl Suction Catheter, 3.5 Fr Catalog # 8890703211
 Covidien Sutures - 4-0 Vicryl Polysorb (Covidien UL212)
 3-0 Prolene (Ethicon 8762)
 2-0 Silk Syringe
 60ml Contrast
 Visipaque 320mg/ml
 Surgilube
 Surgical instruments

BEFORE START INSTRUCTIONS

1 week before start of experiment - Confirm absence of bladder spasm; healthy cat

12 hours before experiment, start fasting the cat

You must transport the animal chart along with the cat to surgery site. The veterinary team will record all relevant data in the chart. The chart must then go back to the housing site.

Transport Cat

- 1 Transport cat from housing site to surgery site.

Animal Prep and catheter placement

- 2 Animal is anesthetized and abdomen is shaved by the vet team. The cat is then moved into the surgery room and attached to monitors by the vet team.
- 3 Drape animal and perform betadine scrub on abdomen and genitals.
- 4 Put surgilube on 3.5Fr catheter and insert into bladder through the urethra. Advance the catheter until resistance is met, then pull back 2-3cm.
- 5 Use gentle suction with syringe to withdraw urine from bladder through the catheter. Measure the volume and save the urine for urinalysis.

Cystogram - DYNA CT

- 6 Use 1:5 dilution of contrast to saline to visualize bladder.

Take a 3D CT image with contrast:saline in the bladder

7 Empty Bladder

Urodynamics/Cystometry 1

8

Note

Performed after cat is transferred from Isoflurane to propofol anesthetic.

Note

Fill rate is 2ml saline/minute using syringe pump.

Note

Data is recorded using Labview software.

Note

Pressure is recorded using an external pressure transducer connected to syringe pump on one end and tubing that leads to the catheter on the other end.

9 Fill bladder with saline and record pressure using pressure transducer connected to LabView

Fill to 30 mL ; Peak pressure around 20 cmH₂O

10 Empty Bladder

Urodynamics/cystometry 2

11 Fill bladder with saline at 2ml/min

12 Fill to 30 mL ; End round 2 urodynamics

Euthanasia

13 Cleveland Clinic animal team euthanizes the animal

Dissection/Histology

14 Bladder is removed, examined and placed in formalin for histological analysis