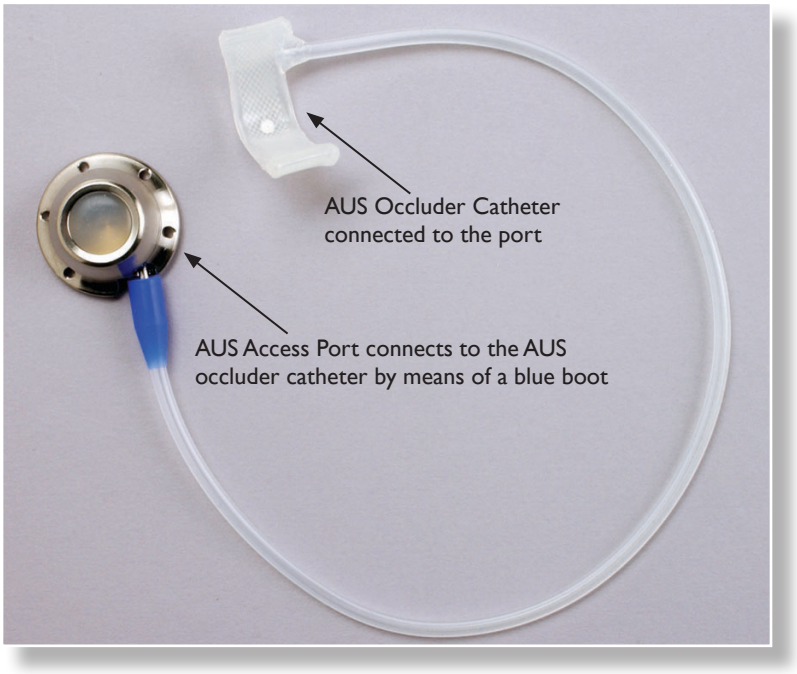
NORFOLK VET PRODUCTS

Specialty Medical Devices For The Veterinary Community

the AUS™

Artificial Urethral Sphincter Port System

Surgical Suggestions



Veterinary Use Only
Patent Pending

the AUS™ SYSTEM

Norfolk Vet Products Inc.
Tel: 847.674.7143
Web: www.norfolkvetproducts.com

E-mail: info@norfolkvetproducts.com

Holly Specialty Products
Tel: 707.200.1280
Web: www.hsp.llc
Contact: Mike and Jessie Hollibaugh

E-mail: info@hsp.llc

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SURGICAL SUGGESTIONS

These suggestions are meant only as a guide.

The adjustable artificial uretheral sphincter port system was created by combining an inflatable silicone occluder, with a titanium subcutaneous access port. This combination of technologies has proven to be a successful system when uretheral sphincter mechanism incompetence that is unresponsive to medical management occurs.

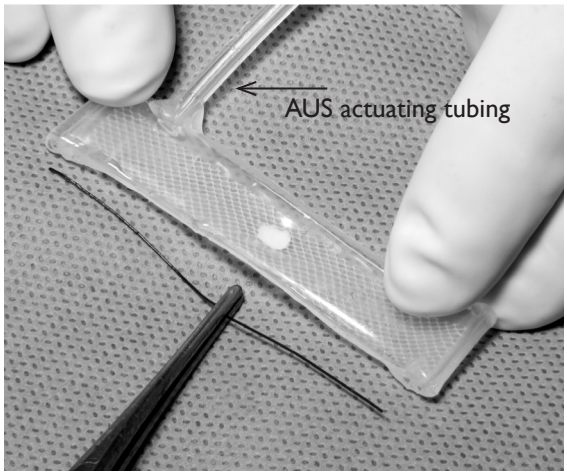
PLACING THE AUS OCCLUDER CATHETER

SURGERY IN FEMALE DOGS

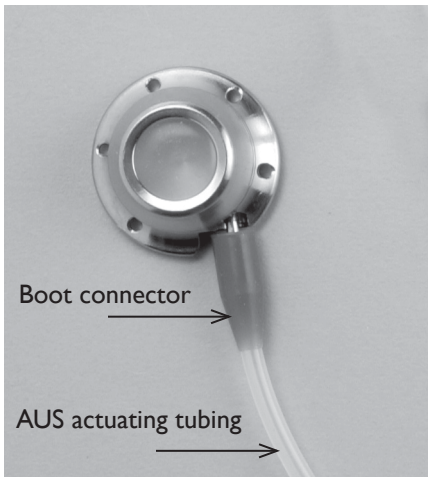
After induction of general anesthesia, a caudal midline approach to the urinary bladder is performed, continuing the abdominal wall incision to the pubic symphysis to allow maximal exposure of the urethra. The bladder is retracted cranially and a 2cm section of the pelvic urethra is isolated from the peri-urethral adipose tissue by blunt dissection, approximately 3-4cm caudal to the trigone. The uretheral circumference approximated by measuring with a length of suture. A silicone AUS occluder catheter of equal or larger circumference to the pelvic urethra is selected, erring on the larger side to avoid excessive compression.

SURGERY IN MALE DOGS

Surgery is performed through a similar caudal midline approach after a para-prepucialskin incision. It is important to continue the abdominal wall incision to the level of the pubis in order to maximize exposure of the urethra. The bladder is retracted cranially and the prostate is located. A 2cm wide area is dissected around the post-prostatic urethra (caudal to the prostate) and the uretheral circumference measured using a penrose drain or length of suture. A silicone AUS occluder catheter of equal or larger circumference to the pelvic urethra is selected, erring on the larger side to avoid excessive compression.



Artificial uretheral sphincter occluder with side entry tubing is sized by comparing it to a piece of suture that was cut to approximate the uretheral circumference



The actuating tubing of the AUS occluder is attached to the Access Port using the "boot" provided with each access port.

The size chart below should only be used as a guide and is based on body weights of female dogs.
Measuring the circumference of the urethra with a piece of suture or ultrasound is recommended.

Device Size	6x11mm	8x14mm	10x14mm	12x14mm
Median Body Weight	3-6kg	10-20kg	20-30kg	25-40kg

Prior to placement of the AUS, all air is flushed from the lumen of the occluder and actuating tubing by retrograde filling of the system with isotonic saline, using a 21 gauge catheter. Refer to the AUS Occluder Flush and Fill Procedure below for details.

A stainless steel reusable flushing/backfill catheter (VO catheter) to assist in flushing the system can be requested when ordering the AUS-Port system.

The AUS is then completely filled, tested for leakage, and the filling volume is recorded before placing the device around the pelvic urethra, 2cm caudal to the trigone.

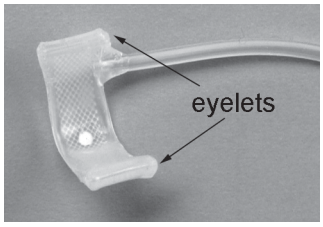
The cuff is closed around the urethra by placing 0-2.0 polypropylene sutures through the eyelets and tying a secure knot.

Once in position around the pelvic urethra, the actuating tubing is exited through a stab incision in the abdominal wall to be connected to the Access Port that is place in the subcutaneous tissue of inner thigh.

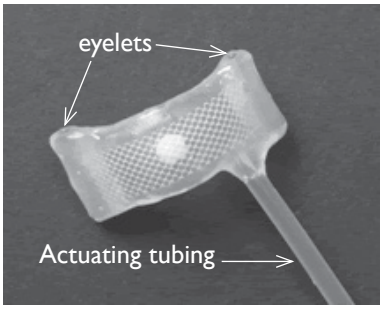
AUS OCCLUDER- FLUSH AND FILL PROCEDURE

Fill with liquid and flush all trapped gasses from the system using gentle pressure. The Backfill catheter or a syringe may be used. Using the Backfill Catheter: carefully insert the Stainless Steel Catheter tube into the open end of the actuating tube/catheter of the AUS. It must extend all the way down into the diaphragm of the AUS. Use extreme caution so as not to puncture the extremely thin wall of the diaphragm with the tip of the catheter. Using a sterile syringe of the appropriate volume connected to the Backfill Catheter, slowly infuse saline into the diaphragm to force trapped air from the system. Use your fingers to help force out the air as you flush the diaphragm. Suck the diaphragm flat and empty. Clamp the tubing.
Without the Backfill Catheter: using a sterile syringe of appropriate volume, insert the syringe partially filled with saline into the open end of the catheter. Slowly infuse the diaphragm with saline to fill the diaphragm and force trapped air from the system. Use the syringe to suck all the saline and air from the device, leaving it empty and the diaphragm flat. Clamp the tubing.

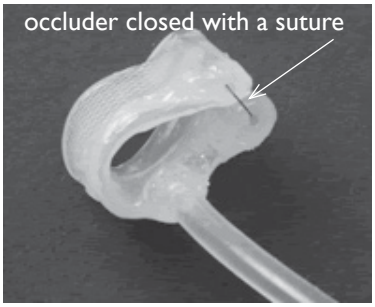
Note: the AUS diaphragm must be empty and completely deflated when it is placed around the urethra. It will be slowly adjusted to the proper occlusion later. Often, the cuff placement alone is enough to provide positive results initially.



AUS occluder catheter showing the position of the eyelets that are used to close the occluder around the urethra



AUS occluder catheter open



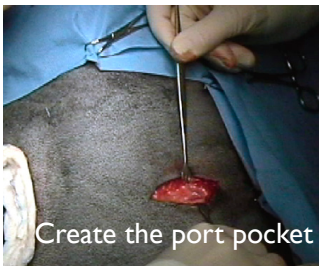
AUS occluder catheter is closed by placing a suture through the eyelets

CALIBRATION OF THE AUS OCCLUDER

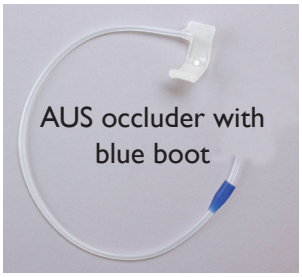
Calibration of the occluder is a critical step to determine the degree of occlusion attained with the addition of each 0.1ml of sterile saline. This allows you to adjust the occlusion accurately after implantation. After suturing the AUS occluder closed through the eyelets, flush the device with a syringe and saline to remove all air trapped in the diaphram. Suck the diaphragm completely empty and flat. Then gradually introduce saline, 0.1ml at a time to gauge the degree of occlusion achieved with each 0.1ml infusion. This will serve as your guide for adjustment of the device after implantation.

PLACING THE ACCESS PORT

Make a skin incision at the port placement site, generally the inner thigh. Create a pocket in the subcutaneous tissue large enough to bury the port - the length of this incision should be about 6cm for the medium sized Access Port. Place a wet sponge over this site.


Create the port pocket

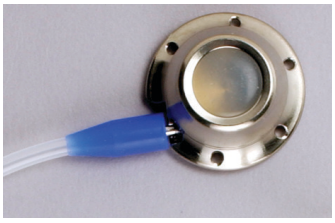
Tunnel from the port pocket incision to the site of the AUS cuff tubing. Measure the length of the catheter/actuating tubing you will need to reach from the site of the AUS cuff on the urethra to the location of the Access Port on the inside of the thigh easily, without creating traction or twisting. The tubing must not bind. Grasp the blue boot end of the catheter, and pull the catheter through the tunnel to the port pocket incision site.


AUS occluder with blue boot

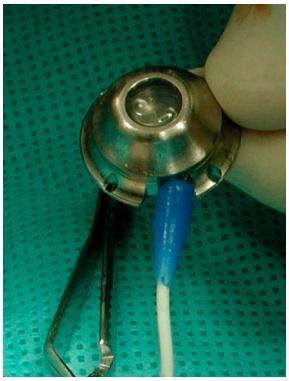
With the diaphragm and catheter of the AUS flushed and empty of air bubbles, and the Access Port flushed with saline using one of the Huber needles in the kit, cut the catheter to the correct length.

DO NOT REMOVE THE BLUE BOOT.

If you removed the blue boot when cutting the tubing to length, replace it on the catheter ensuring that the wide end will face the port when connected.



Connect the tubing from the AUS cuff to the Access Port by sliding the tubing over the barbed connector pin of the Access Port.



Slide the blue boot over the port-catheter connection.

The blue boot reinforces the connection of the port and AUS occluder catheter to prevent kinking, leakage, or disconnection.

Place the Access Port in the subcutaneous pocket previously made off to one side so that the port septum does not lie directly beneath the skin incision line. Suture the Access Port to the fascia with non-absorbable sutures using all suture holes around the perimeter of the Access Port. This will prevent port migration and flipping.

The retraction on the skin is released and the subcutaneous tissue and skin are closed in a routine fashion.

If the increased resistance provided by the AUS occluder does not control the incontinence, a small volume of saline is added to the cuff by injecting into the subcutaneous access port in the thigh using a Huber point needle.

GENERAL INFORMATION

Access Ports are available in 3 sizes to suit pets of all sizes and can be left in place once the treatment is complete. It is biocompatible and will not degrade in the body over time.

Whenever the Access Port is accessed - for treatment or routine maintenance - sterile technique must be used.

A Huber Point needle must be used to access the Access Port. Huber Point needles are non-coring, and part, rather than cut, the silicone injection site. This preserves the integrity of the septum. Right angle Huber Point infusions sets are available for longer infusions.

Call us at 847-674-7143 if you have any questions.