

Vulvoplasty using the CO₂ laser

By William E. Schultz, DVM
For The Education Center

Redundant vulvar fold is a common problem in the bitch and is a cause for recurrent urinary tract infections.

The presence of a vulvar fold should always be considered with frequent UTI, house training issues, tenesmus, frequent urination and licking or attention to the perineal area.

A fold of skin that partially or completely covers the external vulva is characteristic of a redundant fold. During micturition the bitch will splash urine on the fold and the perivulvar area will become irritated and, in some cases, ulceration due to chronic infection will be present.

Laser-assisted Surgery

Surgical intervention is necessary when medical therapy fails to control the problems associated with redundant vulvar fold. Surgical removal of the tissue is curative.

Using steel for the procedure results in moderate to severe hemorrhage with poor visualization of the surgical field. CO₂ laser surgery is very clean and the lack of friction during the skin incision allows for accurate incision placement.

Flexible fiber waveguide CO₂ laser facilitates surgery even more by giving the surgeon freedom of movement without fatiguing the arm and hand.

Procedure Preparation

The bitch is placed in ventral recumbency with a pad or beanbag supporting the pelvis. The tail is tied vertically and the site is prepped according to standard procedure (Figures 1 and 2).

Anesthesia

We premedicate with a combination of acepromazine, atropine and Torbutrol; induction is with Propofol; and maintenance is with Sevoflurane. Morphine is given during the procedure and the bitch is sent home on a veterinary NSAID for four to five days.

CO₂ Laser Sttings

The laser is set at 10 watts superpulse and a 0.25 mm tip is used. We have used both the adjustable and fixed-spot Aesculight handpiece for this procedure and both work exceptionally well. In this case, the adjustable tipless handpiece was used (Figure 3).

Initial Incision

An incision is made in the perivulvar space just lateral to the existing dermatitis that surrounds the vulva (Figure 4). This is to allow suture place-

ment in healthy tissue.

The incision extends laterally and ventrally to the ventral aspect of the vulva and will include the lateral fatty tissue (Figure 5).

Excess Skin Removal

The second incision is made dorsally and approximates the close perivulvar incision (Figures 6 and 7).

Initially the fold may be raised with forceps to determine the width of the second incision. When the incision is made, the perivulvar tissue should

be lifted dorsally to be sure sufficient tissue is removed to give full exposure to the vulva post op (Figures 8, 9, 10 and 11).

When the skin is removed, the underlying fat is removed either by laser ablation or by lifting with forceps and cutting with the laser (Figure 12). The laser is on constant lase at 15 to 20 watts for this portion of the procedure.

Wound Closure

2-0 Monocryl is used for closure. Intermittent sub-



Figure 1



Figure 2



Figure 3

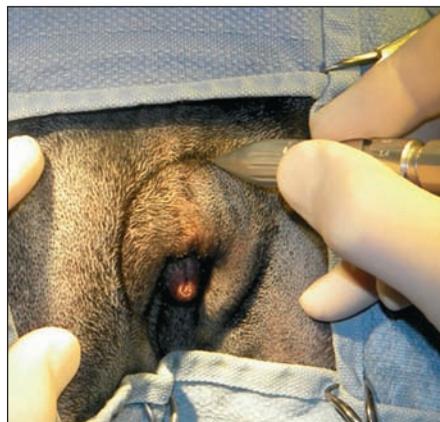


Figure 4

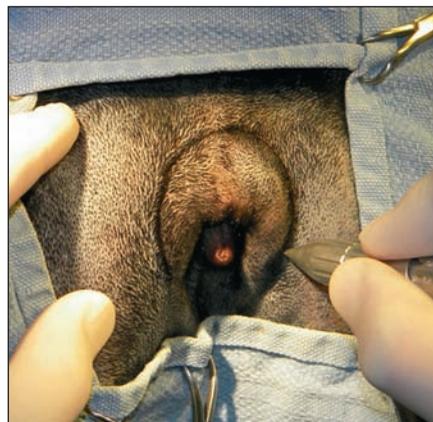


Figure 5

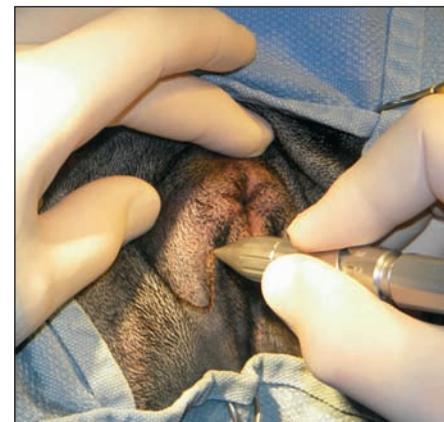


Figure 6

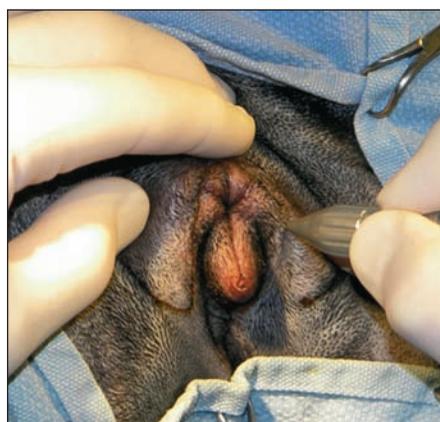


Figure 7



Figure 8

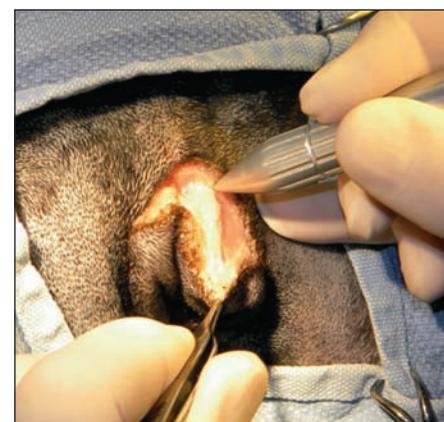


Figure 9



Figure 10



Figure 11



Figure 12

A special advertising section



Figure 13

Figure 14

Figure 15

cuticular sutures are placed with the initial sutures at 12 o'clock, 3 o'clock and 9 o'clock (Figures 13 and 14). This allows for proper apposition of the tissues.

The inner incision is much smaller than the outer incision and proper alignment is easily accomplished with this method. Skin closure is also done with 2-0 Monocryl using either a cruciate or simple interrupted pattern (Figure 15).

Post-operative Instructions

A restraint collar is placed immediately post-op to prevent chewing and licking at the surgical site; it remains on the bitch until suture removal at two weeks post-op.

Owners are instructed to keep her on a leash with no free running the first week. Antibacterial wipes are to be used three times daily during the initial healing period to keep scab formation off the incision line and to treat the pre-existing vulvar fold dermatitis.

Typically, we will treat the underlying cystitis pre-operatively and continue antibiotics post-operatively if indicated.

Summary

The numerous advantages of CO₂ laser surgery—minimal hemorrhage, excellent visibility of the surgical site, precision and control over the amount of tissue

removed and reduced post-op swelling—are invaluable in veterinary gynecology.

Vulvoplasty surgery is dramatically facilitated through the use of a surgical flexible waveguide CO₂ laser with a very high degree of surgeon, client and patient satisfaction. ●

Will Schultz, DVM, graduated from Michigan State University in 1973, went into private practice and opened his companion animal practice in the fall of 1974. He has been a board member on the Synbiotics Reproductive Advisory Panel, The Society for Theriogenology and The Theriogenology Foundation, with speaking engagements at veterinary conferences, veterinary associations and national specialties because of a special interest in canine reproduction. Soft tissue and orthopedic surgery are also areas of special interest with laser surgery being an important modality for him for more than 20 years. Dr. Schultz uses a 20-watt flexible waveguide CO₂ laser with constant and superpulse modes.

This Education Center article was underwritten by Aesculight of Woodinville, Wash., manufacturer of the only American-made CO₂ laser.

1.4 mm focal spot size setting*: Buccal Mucosal Hyperplasia, Acanthomastous Epulis, Acral Lick Granuloma, Squamous Cell Carcinoma, External Ear Canal Growth, Histiocytoma - Canine, Toenail Lasing, Melanocytic Nevus (Benign Melanoma), Nasal Hyperkeratosis, Lingual Mucosal Hyperplasia, Perianal Adenoma, Keratectomy, Oral Fibrosarcoma, Entropion Correction, Indolent Ulcer, and many more...

0.4 mm focal spot size setting*: Perianal Adenoma, Perianal Urethrostomy (feline), Vaginal Fold Excision, Ventriculocholecystomy - Ventral Approach, Declaw Amputation, Vaginal Tumor, Stenotic Nares (feline), Dock Tail Removal, Neuter (canine), Neuter (feline), Vaginal Tumor, Stenotic Nares (feline), Ovariectomy, Abscess Incision and Drainage, Digital Fibroma Excision, Incisional Biopsy (Achilles Tendon Mass), Interdigital Cornified Growth, Stifle Imbrication, Persistent Right Aortic Arch, Thyroidectomy, Hemangioma, Mammary Lumpectomy, Mastectomy, Tail Amputation, Sebaceous Hyperplasia, Distichia, Indolent Ulcer, Granulation Tissue Under Tongue, Lingual Plasmacytoma, Sublingual Sialocele, Tissue Sculpting, Tongue Growth, Anterior Cruciate Ligament, Anterior Cruciate Ligament Sever OJD, Hemilaminectomy and many more...

0.25 mm focal spot size setting*: Anal Sac Excision-Closed, Meibomium Gland Tumor, Lateral Ear Resection, Laryngotomy and Laryngeal Chordectomy, Nasal Hyperkeratosis, Stenotic Nares (canine), Stenotic Nares (feline), Declaw Feline, Thyroidectomy, Eyelid Melanoma, Preputial Stricture, Perineal Urethrostomy (feline), Enterotomy, Feline Squamous Cell Carcinoma, Histiocytoma (lip), Squamous Cell Carcinoma (Third Eyelid), Entropion, Conjunctival Tuck, Gingivectomy, and many more...

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