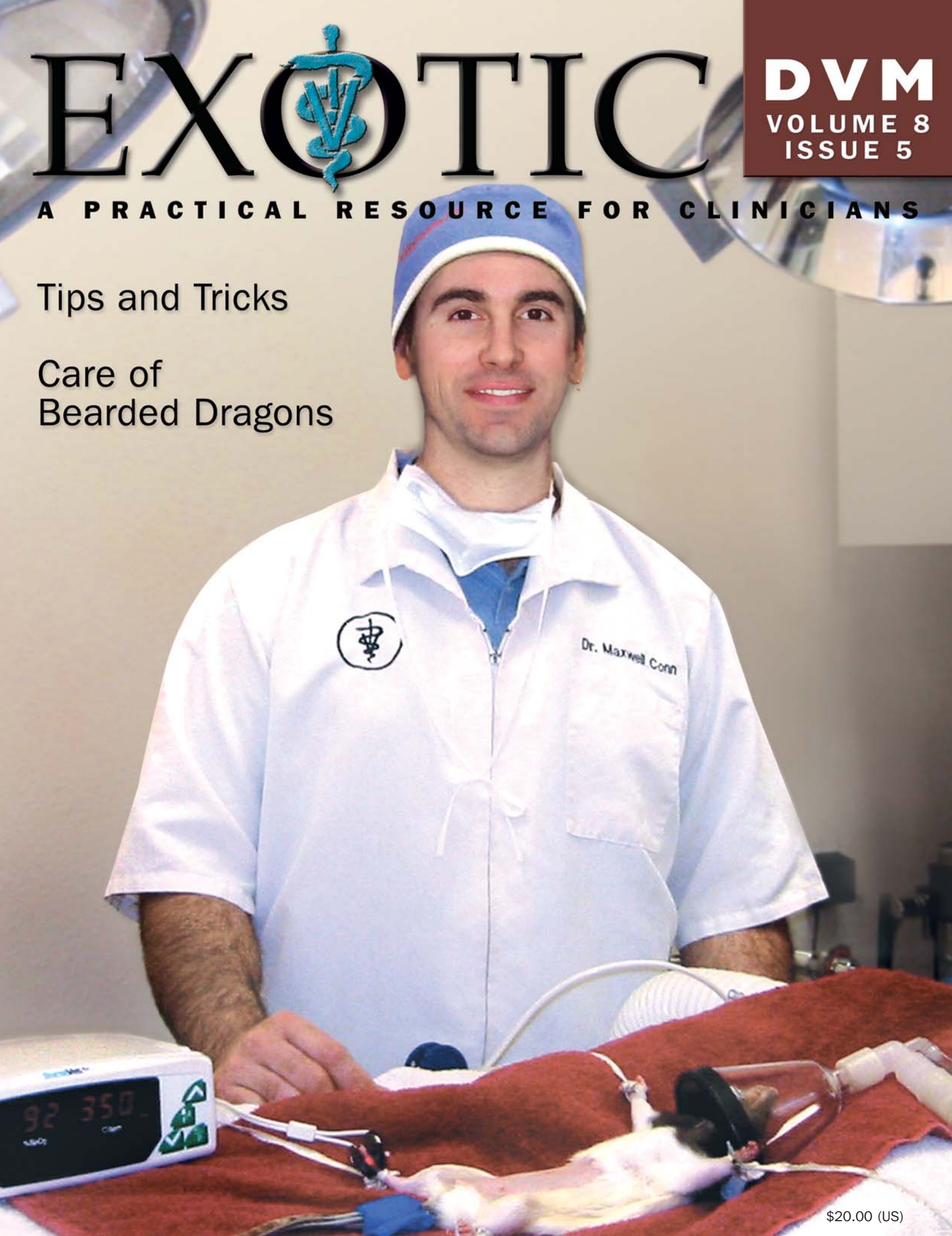
EXOTIC DVM

VOLUME 8
ISSUE 5

A PRACTICAL RESOURCE FOR CLINICIANS

Tips and Tricks

Care of Bearded Dragons



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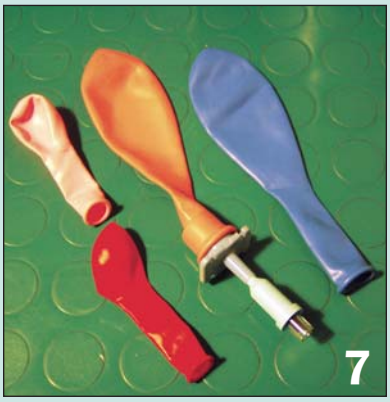

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Prescrotal Approach to Elective Orchiectomy in Guinea Pigs

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Vittorio Capello graduated from the University of Milan, Italy, in 1989. Professionally, he focuses entirely on medicine and surgery of exotics (particularly rabbits, rodents, ferrets and other small mammals), providing veterinary services for two clinics in Milan. He has lectured, published, and taught courses and practical laboratories on these subjects. He has been a speaker at the European Congress of Veterinary Dentistry, North American Veterinary Conference and British Small Animal Veterinary Conference, as well as annual International Conferences on Exotics (ICE) since 2003. He is a member of the Advisory Board of Exotic DVM magazine and the author of the Rabbit and Rodent Dentistry Handbook.

Anatomic features of the male genital apparatus of guinea pigs and other hystricomorph rodent species have been extensively described in the literature. The inguinal canal remains open throughout life and, rather than a true scrotum, two hemiscrotal sacs are present. The inguinal opening is actually wide; for this reason the term "inguinal canal" is not totally appropriate for rodents.

In performing an orchiectomy in all rodent species (as well as in lagomorphs), it is highly recommended or mandatory to ligate the vaginal process, which passes through the inguinal canal. This will prevent potential herniation of fat, the urinary bladder, bowel or seminal vesicles, which are particularly developed in guinea pigs.

Fig 1. For induction of anesthesia, the author prefers a combination of injectable medetomidine (70 mcg/kg IM) and ketamine (20 mg/kg IM), but induction can be achieved with 5% isoflurane and oxygen delivered by face mask. Analgesia is provided by butorphanol (0.3 mg/kg SC). The proper surgical plane is maintained with 1-3% isoflurane via face mask, or endotracheal intubation with the "over the top" endoscopic technique can be performed for safer control of a potential anesthetic emergency.

Fig 2. The guinea pig is placed in dorsal recumbency and the periscrotal area is shaved. The skin is scrubbed with povidone iodine diluted with saline or 0.1% chlorhexidine solution.

Fig 3. The surgical field is draped with a self-adhesive transparent drape. The skin is incised a few millimeters lateral to the base of the prepuce. The tip of the prepuce is visible at the lower margin of this photo.

Fig 4. The subcutaneous tissue is bluntly dissected to expose the vaginal process, which is proportionally much larger in porcupine-like rodents, such as guinea pigs, than it is in rabbits.

Fig 5. The vaginal process is retracted with the forceps while scissors or a hemostat is used to isolate it dorsally.

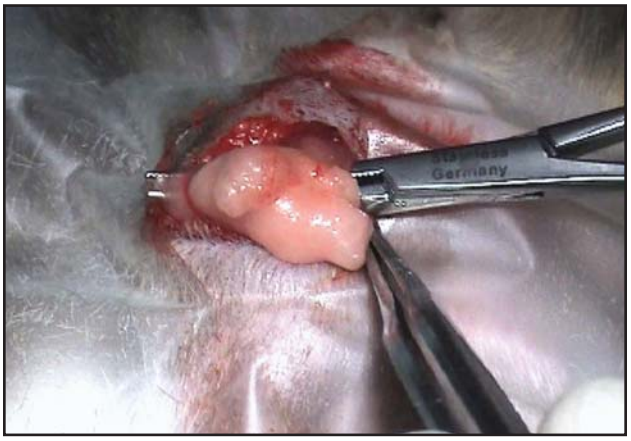

Fig 6. Shown is the vaginal process bluntly isolated by the hemostat. The white tissue is fat, which is particularly abundant in this area.

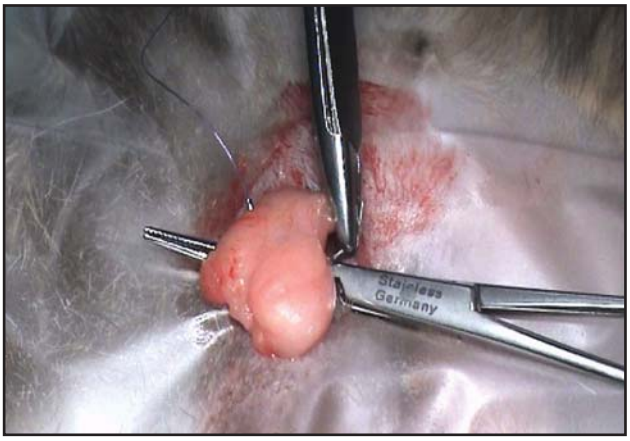

Fig 7. A 3-0 absorbable suture (Monocryl) is passed around the vaginal process.

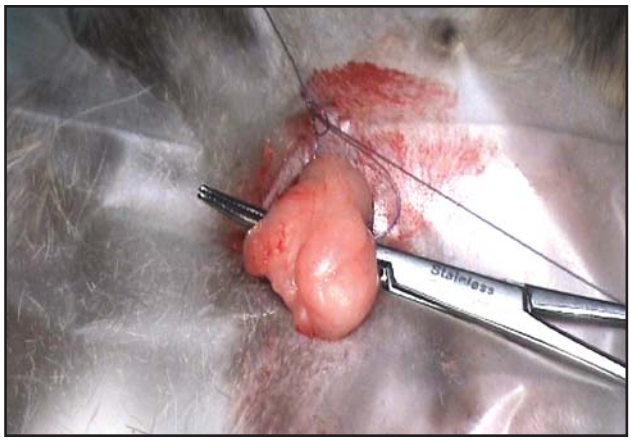

Fig 8. A knot is loosely prepared but is not tightened. After the testicle is removed, this knot will be ligated to close the vaginal process. In cases where the closed technique for castration is performed, the suture is tightened at this step.

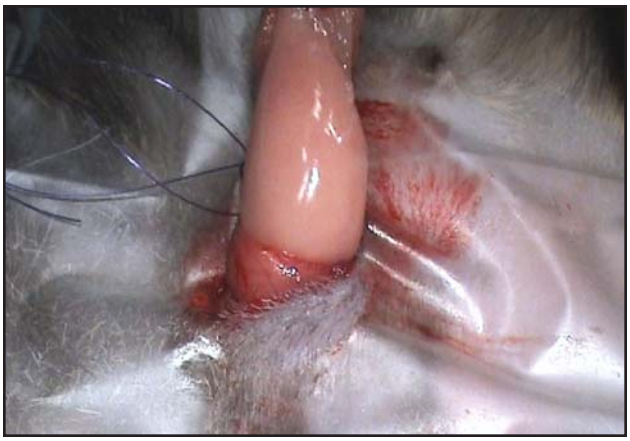

Fig 9. The vaginal process is incised, and the testicle is exposed. The fat surrounding the spermatic cord is visible. During this step, excessive cranial traction should be avoided in order to prevent exteriorization of a large amount of fat tissue and a portion of the seminal vesicles. In cases where the closed technique is performed, the vaginal process is not incised but is completely dissected from the hemiscrotal sac.

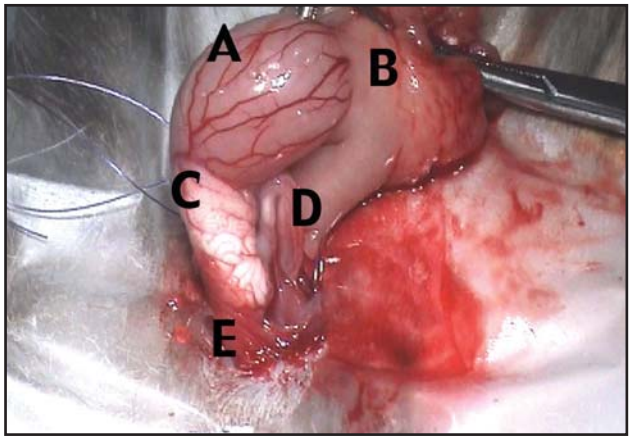

Fig 10. Shown are: A) the exposed testicle; B) spermatic cord surrounded by fat; C) the epididymis; and D) the deferent duct. The hemiscrotal sac (E) is everted.

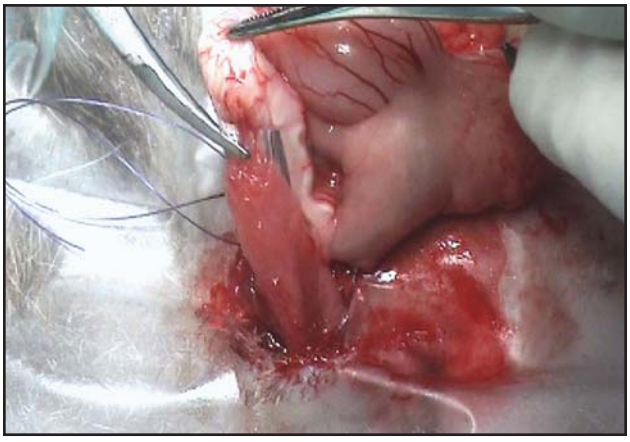

Fig 11. The tail of the epididymis is dissected from the (everted) hemiscrotal sac.

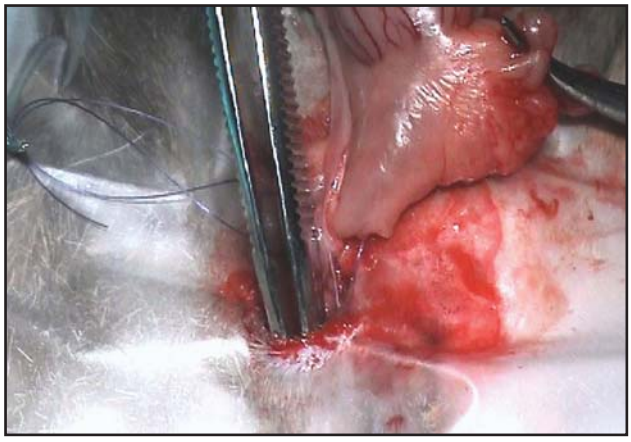

Fig 12. The hemiscrotal sac is repositioned in place using the tip of the forceps.

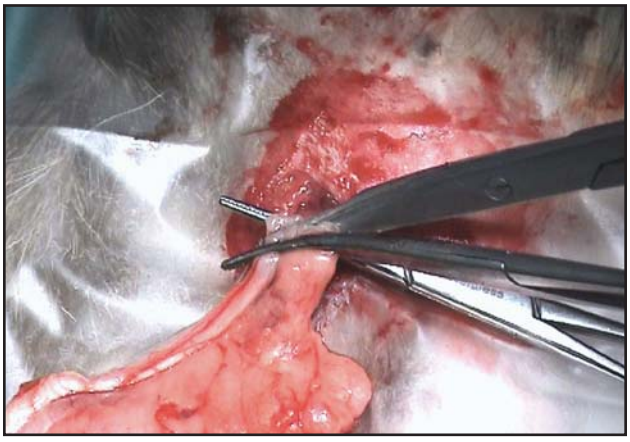

Fig 13. The spermatic cord and the deferent duct are double clamped and dissected. The two anatomic structures can also be ligated separately.

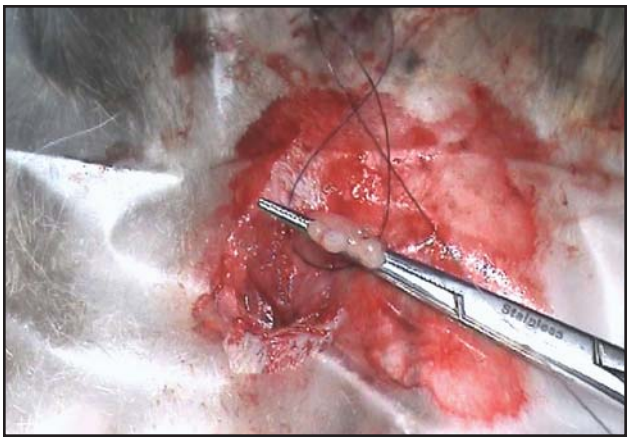

Fig 14. The spermatic cord and the deferent duct are ligated using Monocryl 3-0 suture. Alternatively, ligation can be performed prior to dissection. If the closed technique is used, the spermatic cord is ligated or clipped through the closed vaginal process at this step. However, this is not recommended, especially in adult boars, because two anatomic structures are interposed between the ligation device and the blood vessels: the vaginal process and fat tissue.

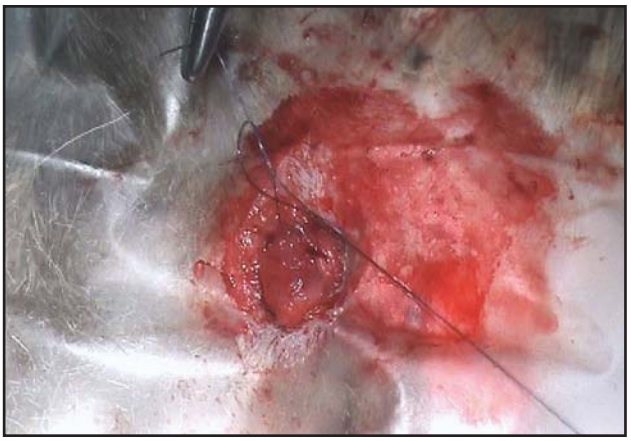

Fig 15. The knot previously placed around the vaginal process is tightened. This step actually performs the ligation of the vaginal process and closure of the abdominal wall. Herniation is not a common complication if a large portion of the abundant fat surrounding the spermatic cord is left in place.

Fig 16. Closure of the skin can be performed with various techniques: use of absorbable or nonabsorbable suture (as shown here with 3-0 nylon), intradermal absorbable suture and/or tissue glue.

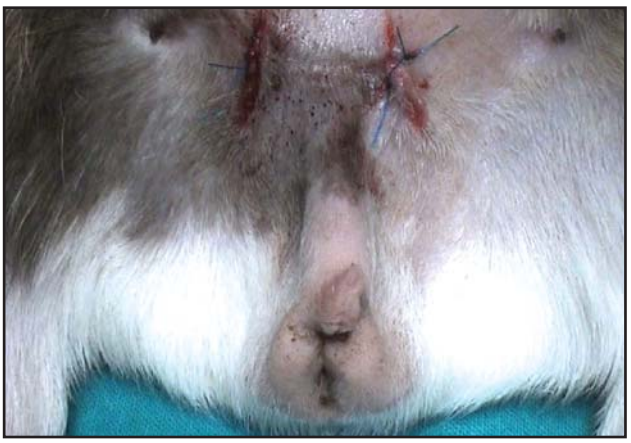

Fig 17. The procedure is repeated on the contralateral prescrotal area and testicle. Shown is the appearance of the two skin sutures. The prepuce and underlying penis are now more visible because of the absence of the surrounding testicles (compare to Fig 2).

Postoperative analgesia is important for all routine surgeries in this species. The author's preferred protocol is post-surgical administration of butorphanol (0.2 mg/kg SC once), then carprofen (2 mg/kg PO) or meloxicam (0.2 mg/kg IM or PO) q12h for 3-4 days. The oral meloxicam is available as a liquid so it is easier to administer than carprofen tablets.

References and Further Reading

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