

犬と猫に見られた持続性陰茎勃起症

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著者	織間, 博光 筒井, 敏彦 脇, 利彦
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Surgical Treatment of Priapism Observed in a Dog and a Cat

Hirimitsu ORIMA, Toshihiko TSUTSUI¹⁾, Toshihiko WAKI²⁾, Eiichi KAWAKAMI¹⁾, and Akira OGASA¹⁾
*Departments of Radiology and ¹⁾Reproduction, Nippon Veterinary and Zootechnical college, 7-1 Kyonan-cho
1-chome, Musashino-shi, Tokyo 180, and ²⁾WAKI Animal Hospital, 31-7, Sekimachiminami 2-chome, Nerima-ku,
Tokyo 177, Japan*

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Priapism is defined as persistent abnormal erection of the penis, usually without sexual desire. In man it is known to occur as a complication of tumors, leukemia, trauma, etc., and, there are many idiopathic cases as well [4]. In animals, there are such cases of reports in horses administered with phenothiazine tranquilizers [6, 8], in protein or amino acid-deficient rats [3, 7] as well as a report of experimental induction in dogs by drugs [1]. However there have been hardly any reports of clinical cases in dogs or cats [5]. In the present paper we report cases of priapism in a dog and a cat which underwent surgical treatment.

Case 1 involves a 2-year-old, short-haired cat weighing 4.4 Kg which was treated with antibiotics at a local veterinary hospital for an abscess in the dorsal lumbar area and a gash in the base of its tail. When the wound was almost cured, the cat was subjected to castration. On the day following to the surgery the veterinarian examined the cat and noticed the abnormal erection of the penis, and an anti-inflammatory steroid and massage of the penis were given. However, these treatments proved as ineffective, and the cat was brought to our college-affiliated veterinary hospital.

The penis was completely exposed out from the prepuce (Fig. 1) but urine was voided normally. It was possible to move the prepuce easily toward the tip of the penis but impossible to completely cover the penis. Local anesthesia of the sacral area was tried for diagnostic purposes, but no change was noted for the erection. Conservative management was then attempted, i.e., systemic heparin administration, local application of anti-inflammatory agents, etc., but just in vein. Penile inflammation developed gradually. A surgical treatment was performed to relieve the stagnation of the penis on the 14th day after the castration. Accordingly surgery was carried out under halothane anesthe-

sia. The body of the penis was exposed outside the prepuce and small incisions were made bilaterally in the tunica albuginea of the corpora cavernosa penis and in some parts of the corpora cavernosa itself. The penis was then compressed, and dark-red, tar-like blood was excreted from the incisions. Heparinized saline was used to irrigate the corpora cavernosa. After adequate irrigation the operation was finished by suturing only the skin of the penis without stitching the tunica albuginea. Immediately after the surgery the penis was almost completely contained within the prepuce, its tip only extending a short distance beyond the preputial space. Follow-up 40 days after the surgery revealed the penis had completely returned to its normal state (Fig. 2). Until two years later when the cat was killed in a traffic accident, no recurrence had been observed.

Case 2 involves a dog of mixed breed (body weight: 8 Kg) which was struck on the back with a bamboo stick by a child while the animal was in the act of copulation. The penis remained erect after withdrawal from the vagina. The duration of urination was somewhat prolonged but this presented no particular problem. A portion of the penis became necrotic, beginning on the 8th day following copulation. The dog lost appetite



Fig. 1. Case 1. Condition upon arrival at the hospital. The penis is continuously exposed beyond the prepuce.

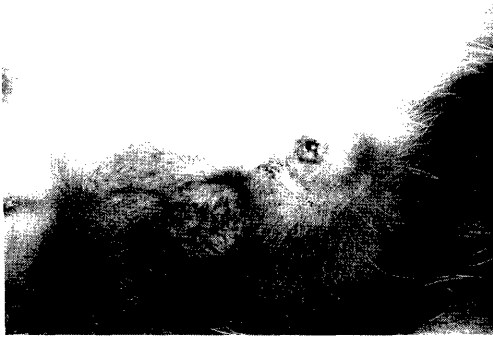


Fig. 2. Case 1. Condition 40 day after surgery. Return to normal.

and was brought to the veterinary hospital of our university. The penis was exposed by 5.5 cm out from the prepuce. The exposed portion was edematous, and a wide necrosis of the superficial layers of the penile skin was observed. The bulbus glandis was within the prepuce (Fig. 3). The prepuce could be moved easily toward the tip of the penis. These findings showed that this case is not paraphimosis but priapism.

With a view that conservative treatment would be problematic, surgical treatment was undertaken immediately. Under halothane anesthesia the bulbus glandis was exposed, side was incised approximately by 1.5 cm and accumulated tar-like blood was pressed out. After applying sufficient pressure to the blood, the inside of the incision was irrigated with heparinized physiologic saline solution. These procedures resulted in a reduction in the size of the bulbus glandis, but no change was observed in the size of the longa glandis. We therefore incised some portion of the longa glandis bilaterally along with the tunica albuginea and the blood was pressed out. Irrigation and compression were repeatedly performed in turns, using heparinized saline, and when the return of red blood flow was observed, the tunica albuginea was sutured and the surgery was finished (Fig. 4).

Erection occurs when, the excitation of the erection center in the sacral portion of the spinal cord causes the arterioles of the penis dilate, and at the same time, the arteriovenous shunts close and the venules constrict, causing the corpora cavernosa to be filled with blood. Flaccidity occurs as a result of an increase in blood outflux and a decrease in blood influx due to venular dilation and dilation of the arteriovenous shunts



Fig. 3. Case 2. Condition prior surgery. The dilated bulbus glandis is within the prepuce. Necrosis of the surface of the penis is observed.

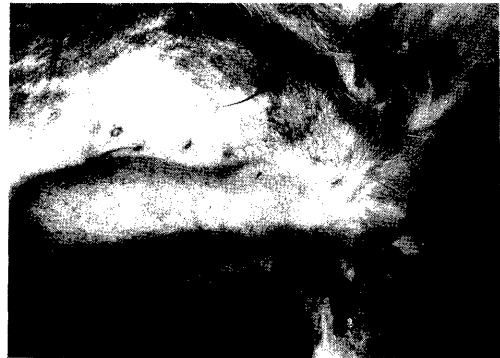


Fig. 4. Case 2. Condition immediately following surgery. The penis is contained within the prepuce.

[2, 11]. When this normal erection mechanism is somehow interfered and a prolonged state of erection ensues, the partial pressure of the carbon dioxide in the blood which has been accumulated within the corpora cavernosa increases, and its increased viscosity makes venous return impaired. This causes the edema in the corpora cavernosa, increasing obstruction of venous return and persistent erection [4]. In other words, once often priapism develops, the erection will be maintained even if the initial cause was removed. In the present cases the initial causes of priapism have not been identified. However, considering the presence of a suppurating wound in the lumbar area at the time of castration in the case of the cat, and a severe blow on the lumbar area during copulation in the case of the dog, it was suspected that the priapism might be attributed to the stimulation of the erection center or the pelvic nerves caused by

a lumbar wound.

Such treatments as penile massage, penile support with a towel [8], administration of benztropine in cases of early onset [9] have been performed in cases of priapism in horses, but no reports have been made concerning dogs and cats. Because of the failure to produce any response to conservative treatments in the case of the cat as well as necrosis which had begun in the case of the dog, we attempted the tunica albuginea incision method [10], which has been used in man. As the corpora cavernosa of the bulbus glandis in the dog differ from those of the longa glandis, in the surgical treatment of priapism in the dog, it was surmised that it would be necessary to incise the bulbus glandis and the longa glandis as done for in the present case. In man, impotence is a common sequela after priapism [4, 10]. In the present case it is still unknown whether the animals retained the ability to copulate after surgery, and this point will need to be further investigated.

要 約

犬と猫に見られた持続性陰茎勃起症（短報）：織間博光・筒井敏彦¹・脇 利彦²・河上栄一¹・小笠 晃¹
 （日本獣医畜産大学獣医放射線学教室，¹ 獣医臨床繁殖学教室，² 脇動物病院）——犬と猫の特続性陰茎勃起症に
 対し，陰茎海綿体白膜切開法を応用し治癒に導くことができた。

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