

Midline laparotomy for unilateral inguinal cryptorchidism in a mixed Persian cat

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ABSTRACT: Cryptorchidism is a congenital condition in male cats, characterized by incomplete testicular descent, which increases the risk of neoplasia, torsion, and infertility. A five-year-old intact mixed Persian cat with unilateral cryptorchidism, diagnosed in 2020, presented for elective testicular removal. Despite this, the cat had previously in 2024 sired its offspring. Ultrasonography revealed that the right testis was located in the inguinal region. The procedure included cryptorchidectomy for inguinal testicles and routine castration for external testicles, performed under general anesthesia. An endotracheal tube was placed and intraoperative monitoring ensured patient stability. The postoperative recovery was uneventful, with complete healing within 10–14 days.

Keywords:

cryptorchidism, cat, inguinal testis, cryptorchidectomy, castration

INTRODUCTION

Cryptorchidism is a congenital disorder defined as the failure of one or both testes to descend into the scrotum, with retained testes typically located in the inguinal or abdominal regions (Ali *et al.* 2022). It is primarily caused by genetic factors, including the androgen receptor, insulin-like peptide 3, and calcitonin gene-related peptide (Shahin 2023). In cats, the prevalence ranges from 0.37% to 3.8% (Gradil *et al.* 2023), with higher incidences in the Persian and Turkish Angora breeds (Ali *et al.* 2022). Most cases are unilateral (90%) and often inguinal (49 %) in location (Villalobos-Gomez *et al.* 2023).

Cryptorchidism increases the risk of testicular neoplasia by 13.6 times and may cause torsion (Rudresh *et al.* 2019). Since the affected cats may still reproduce, the prevalence could increase without intervention. Clinical signs are often absent, leading to owner unawareness. Surgical removal of both testes is recommended in both unilateral and bilateral cases (PetMD 2009). This report presents a case of inguinal unilateral cryptorchidism in a five-year-old mixed Persian cat managed through cryptorchidectomy and castration.

CASE

Anamnesis and signalment: A five-year-old intact male mixed Persian cat was presented to the Pet Care Clinic, attended by Dr. Nimas Aldila, for elective testicular removal. Based on the patient's medical history, the cat had been diagnosed with unilateral cryptorchidism since 2020. Despite this, the cat was successfully reproduced over the previous four years. In 2024, the owner requested the surgical removal of both testes. **Physical Examination:** The cat was alert and in good general condition, with normal body weight,

temperature, heart rate, respiratory rate, and mucous membrane color. **Diagnostic Imaging:** Ultrasonographic examination confirmed that the right testis was retained in the inguinal region (Figure 1). **Diagnoses:** Unilateral cryptorchidism. **Prognoses:** Fausta. **Treatment:** Cryptorchidectomy of the inguinal right testicle and routine castration of the external left testicles.



Figure 1 Ultrasonography imaging results of the testes in the inguinal area of a cat with unilateral cryptorchidism.

RESULTS AND DISCUSSION

Prior to surgery, a complete blood count was performed to evaluate the anesthetic safety. The owner also requested that dental scaling be concurrently performed. Based on the patient's condition and the estimated duration of the procedure,

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intramuscular pethidine was administered as premedication. Sedation was achieved using a combination of midazolam and ketamine administered intramuscularly. For anesthetic maintenance, intravenous propofol, ketamine CRI, fentanyl CRI, and dopamine CRI were administered and adjusted according to the patient's intraoperative response. An endotracheal tube was placed throughout the procedure to ensure oxygen delivery. Intraoperative monitoring included non-invasive blood pressure and oxygen saturation monitoring, and an infusion pump was used to precisely regulate fluid administration.

Both descended and retained testes were surgically removed. The scrotal testes were excised using a standard open castration technique. To access the retained testis, a midline laparotomy incision was made in the caudal abdominal region guided by the previously confirmed inguinal location. After opening the abdominal cavity, exploration was performed to locate the undescended testis. The ductus deferens was identified and carefully exteriorized along with the testis (Figure 2). The associated testicular blood vessels were ligated and transected to allow complete removal. The laparotomy site was closed using standard suturing techniques and postoperative wound care was performed for 10–14 days until full recovery.

Traditionally, retained intra-abdominal testes have been removed via conventional laparotomy or minimally invasive approaches using a spray hook (Shahin 2023). The position of intra-abdominal testes can vary due to their mobility, which is influenced by intestinal peristalsis, making them less predictable than the ovaries. Several studies have recommended laparoscopic surgery as a less invasive alternative to reduce tissue trauma and improve visualization (Villalobos-Gomez *et al.* 2023). However, laparoscopy requires specialized instruments and advanced surgical skills, which may limit its availability in general practice.

■ CONCLUSION

Unilateral inguinal cryptorchidism in a mixed Persian cat was successfully managed using conventional laparotomy and standard castration without postoperative complications. This case highlights the importance of early diagnosis, owner awareness, and appropriate surgical intervention to ensure optimal outcomes in cryptorchid cats.



Figure 2 The process of exteriorization of the ductus deferens and testis in the procedure of cryptorchidectomy of the inguinal right testicle.

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