Case Study

The Petpace Collar in Action

Monitoring Urinary Obstruction in a Cat

Patient Condition and History

Max, a 5-year-old neutered male indoor Himalayan cross cat, was brought to Emergency Veterinary Hospital in Rapid City, SD, after the owner noticed that he was vocalizing excessively, licking his hind area and not passing any urine. Following examination, Max was diagnosed with a Urethral Obstruction.

Urethral Obstruction is an acute obstruction of the urinary tract, causing blockage of urine flow. It most commonly affects indoor male cats, which are referred to as “blocked cats”. Although it is sometimes caused by urinary stones, the usual cause is a plug of crystals, sediments or inflammatory debris, which is associated with Feline Idiopathic Cystitis (FIC) syndrome. Left untreated, Urethral Obstruction can quickly develop into a life-threatening emergency.

At the time of admission, caregivers determined that Max was in pain, under stress, mildly dehydrated and azotemic (high level of metabolic waste products in the blood, secondary to kidney insufficiency). He was anesthetized and a urinary catheter inserted to relieve the obstruction. He was then hospitalized for 48 hours, and a PetPace collar was placed on him to help monitor his condition.

For the first 36 hours, Max’s urinary catheter remained in place, connected to a closed urinary collection system. After determining that he was producing normal urine, the catheter was removed and Max was monitored closely for recurrence. 12 hours later Max was discharged from the hospital in good condition.

Monitoring Data

Pulse and respiration data values showed gradual improvement over the course of Max’s hospitalization. This improvement coincided
Case Study

with his clinical improvement and recovery (see pulse and respiration graphs below).

*Various pulse indices showing improvement from day 1 to day 2 as the cat recovers from Urethral Obstruction.

* Minimum respiratory rate values improving concurrently with clinical recovery.
Case Study

HRV (Heart Rate Variability), a marker for pain and stress, also showed improvement, which was consistent with the removal of the urinary catheter and overall improvement in Max’s condition.

* Triangular index (HRV) showing 22% improvement from day 1 to day 2 of hospitalization.

Finally, despite being confined to a cage, Max’s activity level slightly increased on day 2, coinciding with removal of the catheter.

*Activity chart showing mild improvement on day 2 of hospitalization.

Discussion

Feline Urethral Obstruction is one of the most common conditions seen by veterinary emergency services. Affected cats are typically in pain and under stress, but still require aggressive treatment and close monitoring to ensure a positive outcome. This inherent conflict is challenging to medical staff. In addition, cats may develop a long-lasting resentment of medical staff, owing to frequent handling and restraint.

The data produced by the PetPace collar perfectly reflected Max’s medical course. This confirms and validates the accuracy and
Case Study

clinical usefulness of the PetPace collar for intensive monitoring of feline patients.

Conclusions

The PetPace collar provides clinically valuable data at high frequency and resolution, while minimizing patient handling and staff workload. Cats are often resistant to excessive handling, especially in the unfamiliar and stressful hospital environment, and this is exacerbated during a painful illness such as Urethral Obstruction.

Dr. Asaf Dagan, DVM, Diplomate ABVP (Canine and Feline practice), and PetPace’s Chief Veterinarian, noted, “Taken together, vital signs, HRV and activity are useful indicators of pain, stress and overall condition during disease and recovery. This concept applies equally to cats, including during a Urethral Obstruction episode, as demonstrated in this case. Examining the data provided by the PetPace collar in the context of clinical observations and other tests, provides the attending clinician with a valuable tool to monitor in real-time the patient’s condition and response to treatment,” he concluded.

Kim Earley, Director of Administration of Emergency Veterinary Hospital at Animal Clinic of Rapid City, SD, added, “We place PetPace collars on a lot of our hospitalized patients in this busy, regional emergency center, in the purpose of bringing the standard of care to a new level, while reducing patients stress.”