Chill Protocol to Manage Aggressive & Fearful Dogs

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Trotman, a 10-year-old, 100.3-lb (45.5-kg), neutered male German shepherd dog, was presented for oral examination after the owners noted blood in his mouth. No other apparent health problems were reported.

Physical Examination

The physical examination was limited due to fearinduced aggression, which was demonstrated by Trotman's low body posture, tucked tail, growling, and lunging when approached by team members. His owners were able to open his mouth and allow visualization of a 2-cm mass in the buccal tissue at the level of the right 3rd molar.

Oral examination, thoracic radiography, abdominal ultrasonography, and resection/biopsy of the mass were recommended but could not be performed due to Trotman's fear-induced aggression toward team members. Thus, the Chill Protocol* to be administered at home prior to Trotman's follow-up appointment was prescribed to decrease patient and owner stress

TREATMENT AT A GLANCE: CHILL PROTOCOL

- Gabapentin (20-25 mg/kg PO) should be administered the evening before the scheduled appointment.
- A combination of gabapentin (20-25 mg/kg PO) and melatonin (small dogs, 0.5-1 mg PO; medium dogs, 1-3 mg PO; large dogs, 5 mg PO) should be administered at least 1 to 2 hours before the scheduled appointment.
- Acepromazine (0.025-0.05 mg/kg OTM) should be administered 30 minutes before the scheduled appointment.

*The Chill Protocol is a relaxation protocol developed to manage fearful and aggressive dogs branded by the authors at Cummings School of Veterinary Medicine at Tufts University, where it has been routinely administered to dogs and cats prior to medical appointments and to facilitate anesthesia since 2014.

OTM = oral transmucosal

levels and allow team members to safely handle the patient for diagnostic investigation of the mass.

Chill Protocol

The Chill Protocol is a combination of orally administered medications to facilitate procedural management of animals that exhibit signs of anxiety and/or aggression. The protocol consists of at-home administration of gabapentin, melatonin, and oral transmucosal (OTM) acepromazine (10 mg/mL injectable formulation) prior to a medical appointment (see *Treatment at a Glance: Chill Protocol*, previous page). Gabapentin and melatonin can be given with a small amount of food, and acepromazine should be administered oral transmucosally via syringe for mucosal absorption.

Gabapentin has anxiolytic, sedative, analgesic, and anticonvulsive properties.¹⁻⁵ Oral gabapentin causes anxiolysis and sedation in humans and reduces fear responses in cats.¹⁻⁴ Although published data on gabapentin's use for anxiolysis and sedation are lacking, anecdotal clinical experience

TABLE

CHILL PROTOCOL ADMINISTERED TO TROTMAN (100.3 LB [45.5 KG])

| Drug | Evening Prior to Examination (Dose) | 1 to 2 Hours Prior to Examination (Dose) | 30 Minutes Prior to Arrival for Examination (Dose) |
|----------------------------|--|---|--|
| Gabapentin | 1000 mg PO | 1000 mg PO | - |
| Melatonin | _ | 5 mg PO | _ |
| Injectable acepromazine | _ | - | 2 mg OTM |

OTM = oral transmucosal

supports its use. Melatonin is a naturally occurring hormone produced by the pineal gland. Exogenous melatonin has been shown to reduce pre- and postoperative anxiety in humans,^{6,7} and its calming effects and overall safety may benefit dogs with fear-motivated aggression and/or anxiety. Acepromazine elicits behavior-modifying effects (ie, tranquilization, sedation) in animals and has synergistic effects with other sedatives, anxiolytics, and opioids that produce calming effects.^{8,9}

Trotman received gabapentin (22 mg/kg PO) the night before his follow-up appointment and a combination of gabapentin (22 mg/kg PO), melatonin (5 mg PO), and acepromazine (0.04 mg/kg OTM)at least 30 minutes prior to the appointment (Table). The timing of administration of the Chill Protocol is essential, as it is important that medications take effect prior to the stimulation caused by the trip to the hospital. Trotman's owners were advised of the potential for mild-to-heavy sedation and weakness or incoordination and the need for supervision. The duration of sedation is variable but can last up to 24 hours, which is normal and not harmful, whereas severe stress can have lasting effects and may leave a dog tired and depressed, reduce immune function, and result in other physical sequelae following exposure to the stressor.¹⁰

Outcome

Trotman arrived at the hospital moderately sedated and ataxic but still ambulatory and wearing a muzzle. He gave a low growl in response to team members entering the examination room. Hydromorphone (0.1 mg/kg IM) was administered while Trotman was under minor restraint, and the muzzle was removed in case of vomiting. He was left in the examination room with the owners for 20 minutes while the hydromorphone took effect (sedation should be deep enough to allow further manipulations to be performed without the patient struggling). An intravenous catheter was then easily placed in a lateral saphenous vein while Trotman was conscious but sedate. He offered no resistance to being remuzzled, lifted to a gurney, and taken to radiology, where he was

positioned for thoracic radiography and subsequently transported to undergo ultrasonography. An hour later, Trotman was induced with propofol (1.5 mg/kg), intubated, and anesthetized with sevoflurane for oral examination and dental procedures, which were performed over the course of 2 hours. Vital parameters remained within normal limits. Recovery from anesthesia was uneventful. Owners continued administration of the Chill Protocol for subsequent medical appointments due to its calming effects, with no adverse events noted at home or in the hospital.

Conclusion

The Chill Protocol provided adequate anxiolysis and sedation to allow for safe management of a dog with fear-induced aggression without significant side effects. The Chill Protocol can be prescribed to healthy patients that are known to be aggressive, fearful, and/or anxious during hospital visits (see *Take-Home Messages*).

TAKE-HOME MESSAGES

- The Chill Protocol aids in reducing fear, anxiety, and aggressive behavior in animals to facilitate safer, less stressful handling during physical examinations, blood draws, and noninvasive diagnostic procedures.
- Additional injectable drugs (eg, opioids, α₂ agonists, anesthetics) are often required to provide adequate analgesia and sedation for certain patients or more invasive procedures.
- The prescribing clinician is responsible for awareness of the patient's general health condition and when Chill Protocol administration might be contraindicated or require administration at a lower dose.
- Chill Protocol duration is approximately 4 to 6 hours. Redosing may be required if the patient is not expected at the hospital until later or remains at the hospital all day.
- Timing of drug administration and owner compliance are essential for successful treatment.

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