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CASE STUDY: The addition of physical rehabilitation modalities and therapeutic exercise to improve post-operative ileus in a Labrador Retriever Cross.

“Jake”, a 2 YO, 37 kg, MN yellow Labrador Retriever Cross presented to the Animal Emergency and Referral Center of Minnesota with a history of moderate abdominal discomfort (2 / 4 on Colorado State University Canine Acute Pain Scale) and four-day history of vomiting. Admitting vitals revealed a normothermic patient with mild tachycardia (140 bpm) with mild tachypnea (48 rpm). Initial diagnostic samples obtained showed mild elevation in ALKP, ALT, Amylase and lipase. There was also evidence of mild leukocytosis (24 x 10⁹/L) while abdominal radiographs revealed evidence of a linear foreign body.

After receiving initial stabilizing therapies (including IVF, maropitant, ampicillin sulbactam, famotidine, hydromorphone and midazolam, and initially starting a fentanyl CRI), “Jake” was anesthetized (a combination of Propofol and diazepam with maintenance on a combination of Isoflurane and the fentanyl CRI at 7 mcg/kg/hr.) and prepped for an abdominal laparotomy. While in surgery, a single gastrotomy incision was made to remove fabric material palpated in the stomach. Following closure of the gastrotomy, a resection and anastomosis (R&A) was performed in the mid ileum with approximately four inches of ileum resected along with an additional seven inches of unidentifiable fabric material. Minimal peristalsis was appreciated intra-operatively. An uneventful anesthetic recovery followed. During recovery, a nasogastric (NG) tube was placed to allow suctioning of gastric fluid during hospitalization along with trickle feeding (3 ml/hr.) of an enteral diet which was initiated approximately 18 hours post-operatively. Maropitant, ampicillin sulbactam, famotidine and the fentanyl CRI (now reduced to 5 mcg/kg/hr.) was maintained post-operatively.

On the third day post-surgery, repeat diagnostics revealed a reduction in the ALT (now normal) and ALKP (minimal elevation) with normalization of the previously noted leukocytosis. After multiple attempts at offering oral bland food and routine NG suctioning (every 4 hours) removed between 50 and 150 mls of gastric fluid, it was decided “Jake” would be started on parenteral erythromycin for its prokinetic effects on the gastrointestinal tract. “Jake’s” abdominal discomfort had improved (now 1 / 4 on CSU Canine Acute Pain Scale) although he had not defecated while
hospitalized (likely secondary to the combination of minimal oral intake and the opioid CRI). An additional two days passed when the Sport and Strength Department was consulted.

Based on the cross-departmental consultation with the Criticalist and the lack of progress at improving “Jake’s” inappetence and perceived functional ileus, it was decided to reduce the fentanyl CRI to 2.5 mcg/kg/hr., add in therapeutic laser therapy peri-incisionally (directing the beam towards the location of the R&iology), and increasing “Jake’s” time outside of his kennel walking around and interacting with staff. Therapeutic laser treatments were performed at 5 J/cm² every 24 hours with “Jake” now being walked every two hours. Twice daily therapeutic exercises also included cavalettis, stair standing (front feet on second step and hind feet on the floor), cookie stretches, sit-to-stands, and slow zig-zag walking up and down the gentle hill behind the facility.

Within 36 hours of starting therapeutic laser and exercises, “Jake” showed a dramatic increase in his interest in food. Though he was not yet ingesting a normal amount, he would eat approximately 1/8 cup of hand fed bland canned food. It was also noted there was no longer gastric fluid being obtained during NG tube suctioning. However, there was a significant increase in his borborygmus, now easily heard without a stethoscope.

Over the following 24 hours, the fentanyl CRI and erythromycin were both discontinued as “Jake” was transitioned to oral medication (Clavamox, carprofen and tramadol) and was now regularly and willingly eating small amounts (1/4 to 1/3 cup kibble every 3 hours out of a food bowl) without evidence of vomiting or any further abdominal discomfort. He was excised about performing his daily exercises and was becoming increasingly resistant to returning to his kennel.

“Jake” was hospitalized for an additional 18 hours as the owners were out of town and not able to pick him up. At the time of discharge (approximately eight and a half days after presentation) “Jake” had not yet defecated but had returned to what the owners described as his “normal, bouncy, enthusiastic self”. They were informed to continue gradually increasing his caloric intake over the next two days and to monitor his incision while attempting to restrict his activity. At the time of suture removal one week later, “Jake” had returned to his normal activity level and was now defecating on a daily basis.
About the Author

John Nielsen, CVT, VTS (ECC), CVPP, CCRP graduated from the Medical Institute of Minnesota in 1997. He has been a Certified Veterinary Technician in Minnesota since that time. His work experience includes a variety of backgrounds; from the University of Minnesota Veterinary Teaching Hospital to small animal and exotic general practice, and finally working in emergency and specialty medicine. John became a Veterinary Technician Specialist in Emergency and Critical Care through the Academy of Veterinary Emergency and Critical Care Technicians in 2007. In 2011, he earned the title Certified Veterinary Pain Practitioner from the International Veterinary Academy of Pain Management along with becoming a Certified Veterinary Technician in Wisconsin. In 2013, he became a Certified Canine Rehabilitation Practitioner through the University of Tennessee.

Since that time, John has gone for additional training in Canine Myofascial Trigger Points through Myopain Seminars. He regularly lectures on the topics of veterinary pain management and veterinary rehabilitation at various local and regional continuing education conferences.

He is a member of the Minnesota Association of Veterinary Technicians (MAVT), Wisconsin Veterinary Technician Association (WVTA), National Association of Veterinary Technicians in America (NAVTA), Veterinary Emergency and Critical Care Society (VECCS), Academy of Veterinary Emergency and Critical Care Technicians (AVECCT), International Veterinary Academy of Pain Management (IVAPM), International Association of Veterinary Rehabilitation and Physical Therapy (IAVRPT) and the Academy of Physical Rehabilitation Veterinary Technicians (APRVT). He currently volunteers on boards for AVECCT, IVAPM, and APRVT. He currently oversees cases in the Sports & Strength Department as the Senior Rehabilitation Technician at the Animal Emergency & Referral Center of Minnesota in Oakdale, MN.

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