

Multicenter prospective study on the use of intraperitoneal PERIDAN™ concentrate adhesion reduction device in horses: 33 cases (2008-2011)

M. MacKinnon^a, L.L. Southwood^a, S. Mattson^b, S. Morello^a, S. Hart^a, R. Shoemaker^c, A.J. Doyle^d, M. Milligan^e, C. Jackson^e, and C.M.K. Springate^f

Department of Clinical Studies, New Bolton Center, University of Pennsylvania, Kennett Square, PA^a; Moore Equine Veterinary Centre, Balzac, AB^b; Delaney Veterinary Services Ltd., Sherwood Park, AB^c; Atlantic Veterinary College, University of Prince Edward Island, Charlottetown, PEI^d; Equine Specialty Hospital, Burton, OH^e; ARC Medical Devices Inc., Vancouver, BC^f

Introduction

- Intraperitoneal (IP) adhesions are an important complication following abdominal surgery in horses and adhesion prevention could improve long-term survival and reduce the incidence of colic following abdominal surgery.
- PERIDAN™ Concentrate (ARC Medical Devices) is a formulation of fucoidan (ARC Standard) that has been shown to safely reduce IP adhesions in a pony foal model following dilution in LRS and IP administration¹
- PERIDAN™ Concentrate's clinical use has not been evaluated.

The objectives of this study were to obtain:

- information pertaining to the clinical use of PERIDAN™ in equine colic cases and
- short- and long-term survival and complication rates in cases in which PERIDAN™ was used.

Materials and Methods

- The study was performed prospectively between November 2008 and January 2011.
- Surgeons were provided with PERIDAN™ Concentrate for IP use during abdominal surgery and a survey questionnaire. The survey questionnaire included: body weight, age, intraoperative diagnosis, surgical procedure performed, intraoperative prognosis, and duration of surgery. The volume of PERIDAN™ Concentrate used, the volume and type of solution into which it was mixed, methods of administration, and ease of use were recorded. Surgeons were also surveyed with regard to overall postoperative recovery of the patient, postoperative reflux, complications and short-term survival.
- Long-term follow-up was obtained through telephone interviews with owners and included whether or not the horse was alive, reasons for death if pertinent, episodes of colic, incisional problems, and whether or not the horse had returned to its intended use.
- Data are shown as median (range).

Results

- There were 33 equine patients that were included.
- The median body weight was 450 (35-585) kg and age was 8 years (2 days to 34 years).
- The procedure was the second abdominal surgery in 5 horses.
- The intraoperative prognosis was excellent (4), good (15), fair-good (2), fair (7), guarded or guarded to poor (3), and poor (1).
- The median duration of surgery was 120 (75-310) minutes.

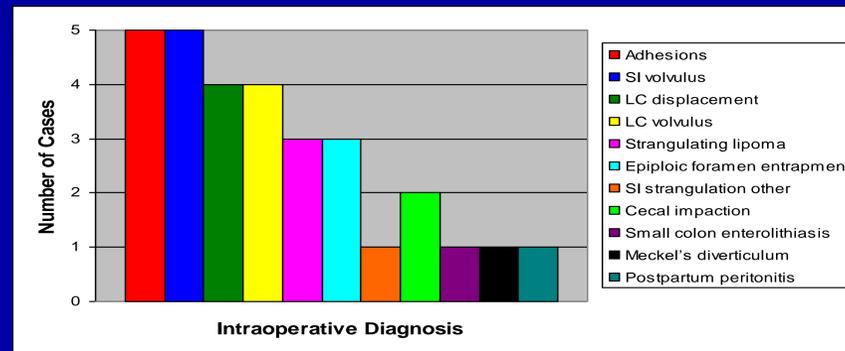


Figure 1. The graph depicts the number of adult horses with each intraoperative diagnosis.

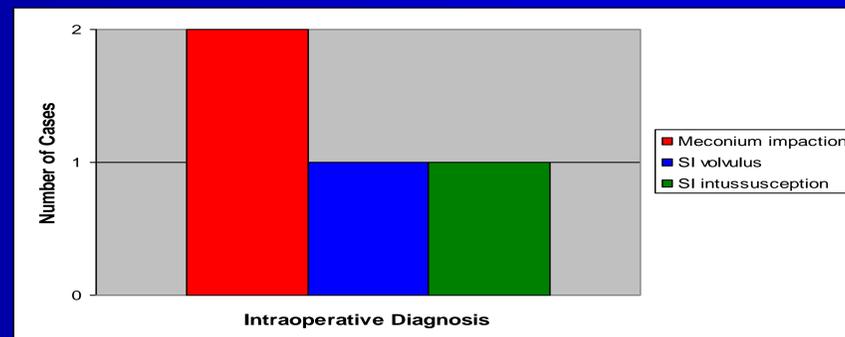


Figure 2. The graph depicts the number of foals with each intraoperative diagnosis.

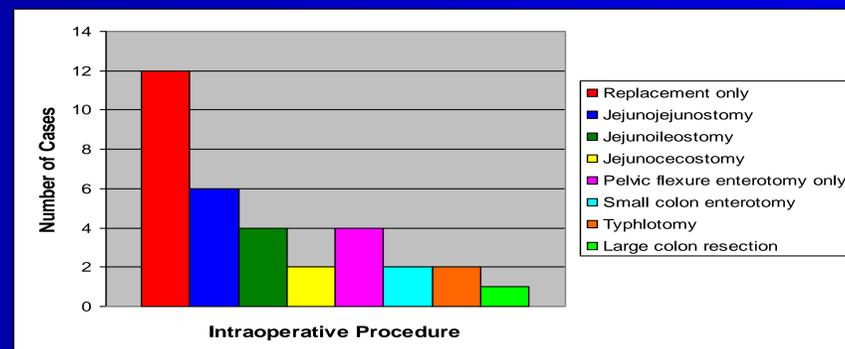


Figure 3. The graph depicts the intraoperative procedure performed for each case.

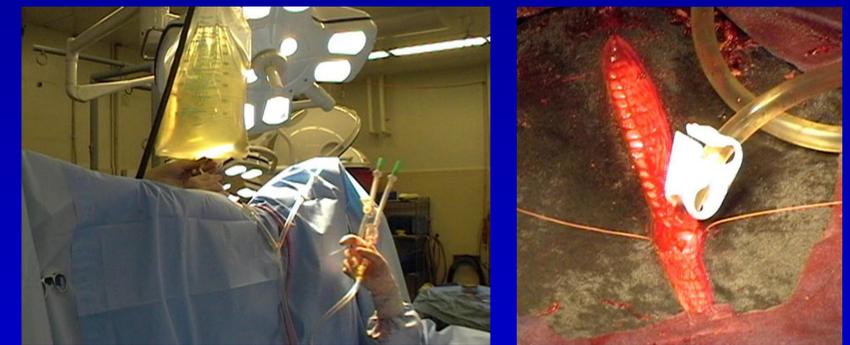


Figure 4. Image demonstrating administration of the solution containing PERIDAN™ Concentrate using a 4-prong large bore irrigation set just prior to completion of linea alba closure (12). Alternatively, it was administered by opening the fluid bag and pouring it into the abdomen (20); 50 mL was mixed into 5 L LRS or Plasmalyte solution for horses and 5 mL into 500 mL LRS or 1 L Plasmalyte for foals.

Results - continued

- Postoperative recovery was considered better (15), typical (11), and poorer than typical (7).
- Short-term survival was 31/33 (94%).
- Median time to follow-up was 14 (1-26) months.
- Long-term survival was 28/31 (90%); New Bolton Center (NBC) 88%.
- Signs of colic following discharge occurred in 6/31 (19%); NBC 27%.
- Of the surviving horses, 19 returned to their intended use, 5 are still recovering, 3 are still immature, and 1 horse did not return to racing because of laminitis.

Conclusions

- While the current study is not a randomized prospective clinical trial, there is some evidence of a favorable long-term outcome with regard to survival and reduction of colic particularly considering the number of neonates and the high proportion of horses with small intestinal lesions, adhesions, and that underwent repeat celiotomy.

References

- Yamout S, Bouré L, Theoret C, et al. (2007) Evaluation of abdominal instillation of 0.03% fucoidan solution for the prevention of experimentally induced abdominal adhesions in healthy pony foals. In *Proceedings ECVS 16th Ann. Mtg.*, Dublin, Ireland.