

# Comparison of intestinal leak pressure among fresh, refrigerated, and frozen/thawed feline jejunum after enterotomy closure.

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## Background:

- Enterotomy is commonly performed in dogs and cats due to their propensity to ingest foreign bodies.
- Postoperative peritonitis caused by wound dehiscence and intestinal leakage is a potentially fatal complication associated with enterotomy.
- Currently the accepted methodology for performing comparative studies on enterotomy techniques is constrained to the use of fresh tissue.
- Due to rapid postmortem autolysis, it is commonly accepted that these intestinal segments must be used within 5 hours post mortem to sufficiently mimic a live situation.
- The use of fresh tissue leads to procedural constraints due to the unpredictable availability of “fresh” samples and the associated acceptable completion time.
- Whether or not the use of fresh tissue is necessary to obtain accurate enterotomy leak pressures has not been yet examined.

Fig. 1

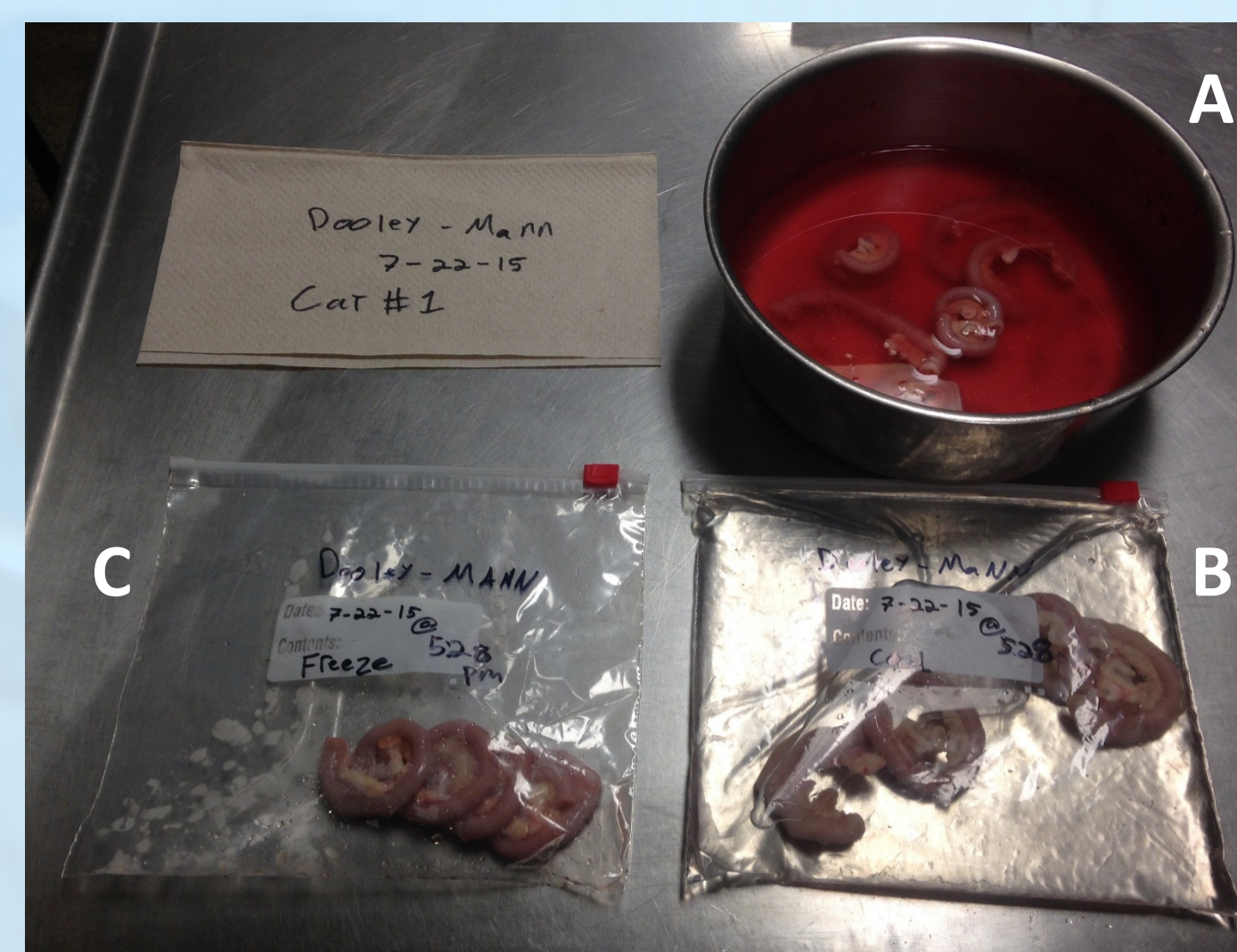


Fig. 2

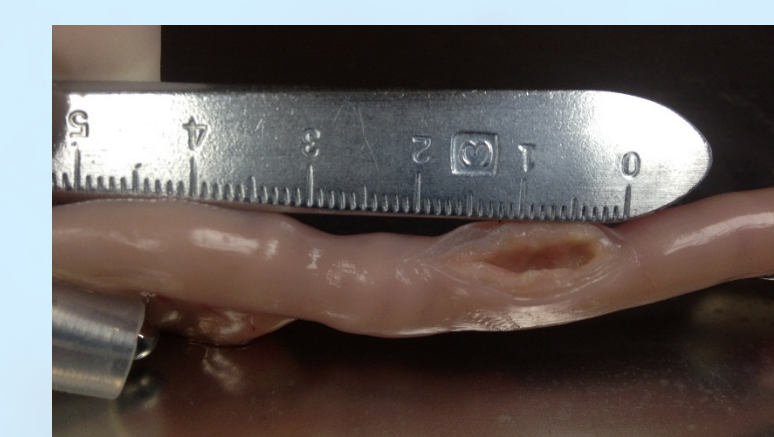


Fig. 3



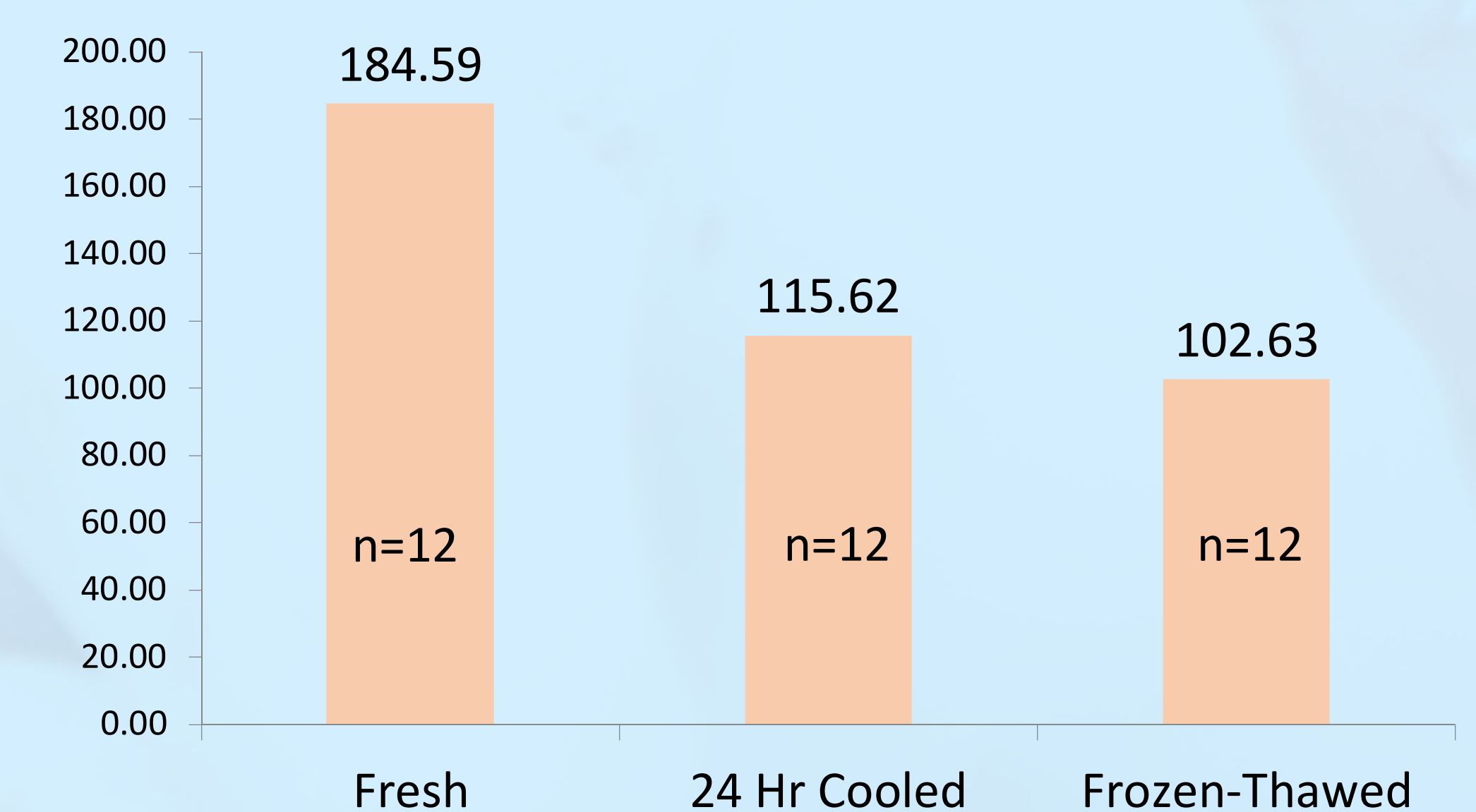
Fig. 4



Fig. 1 Displays samples from the three designated storage groups used in this study, Fresh (A), 24-hour cooled (B), Frozen-thawed (C). Fig. 2 Enterotomy, 2 cm. Fig. 3 simple continuous suture pattern Fig. 4 Shows individual sections from respective groups after the lumen was perfused with Lactated Ringer's Solution and pressure testing was performed.

## Results:

Chart 1. Mean intraluminal failure pressures (mmHg)\*



\*These results are preliminary

## Materials and Methods:

- Cat cadavers were collected from local animal shelters upon euthanasia for reasons other than the purpose of this project.
- An abdominal midline incision was performed and jejunum was removed caudal to the duodenal flexure and cranial to the ileocolic junction.
- Jejunum was cut into 10 cm sections and separated into one of the three designated groups (Figure 1).
- The lumen was occluded cranial and caudal to where the enterotomy would be performed.
- A longitudinal 2 cm enterotomy was performed (Figure 2) and closed using a simple continuous suture pattern (Figure 3).
- Two catheters were inserted intraluminally. One was attached to a pressure transducer, the other a 10 cc syringe filled with Lactated Ringer's solution (Figure 5).
- The lumen was perfused with Lactated Ringer's solution until leakage was observed.

Fig. 5

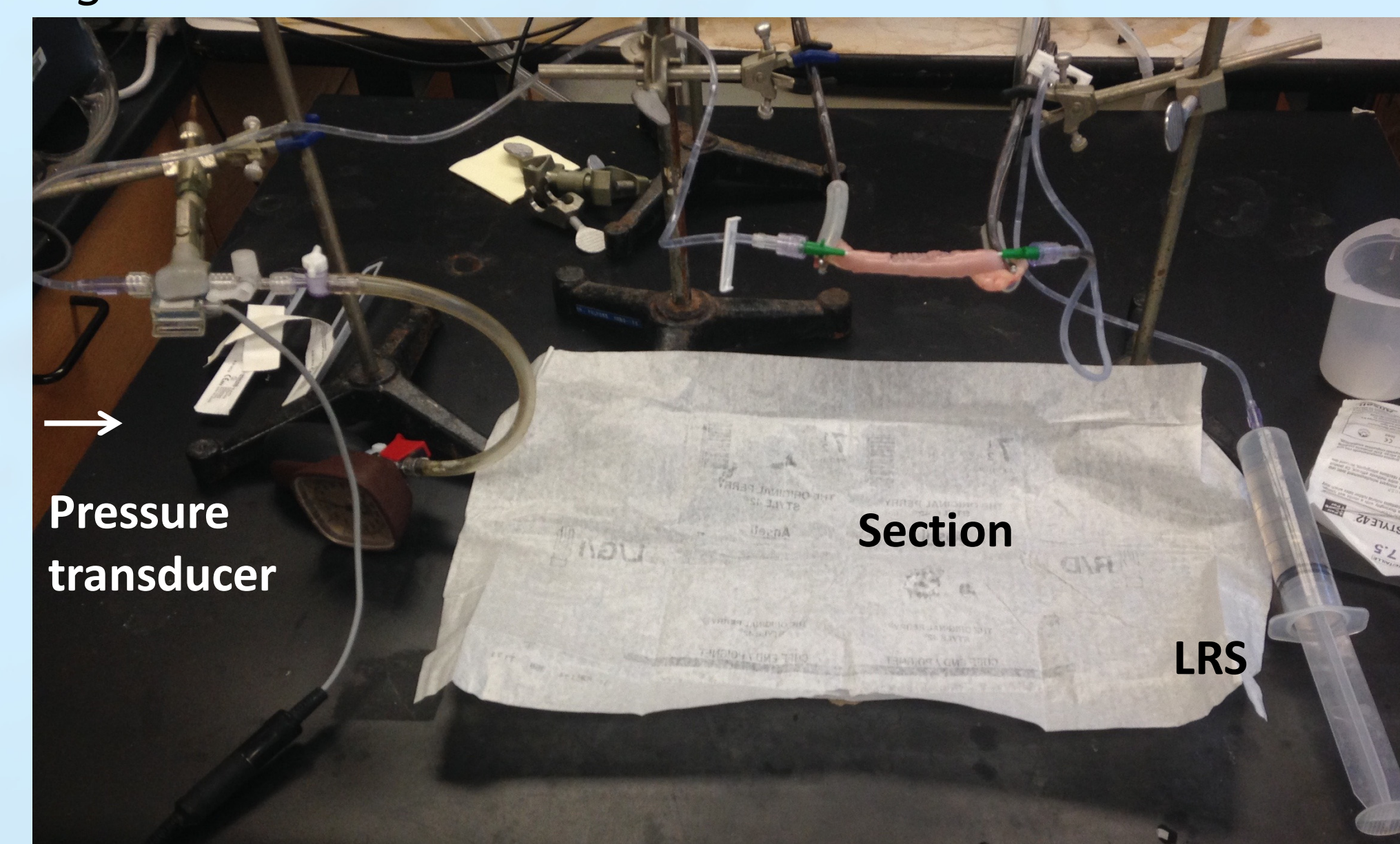


Fig. 5 Apparatus used to measure intraluminal pressures.

## Discussion:

Due to a small sample size (n=36) these data may not have sufficient statistical power; therefore, analysis has yet to be performed. Cadavers will continue to be collected when available and the procedure carried out as described in the Materials and Methods section. The data will be analyzed using a completely randomized design-fixed effect model ANOVA.

## Acknowledgements:

- Laboratory space and equipment were provided by Pam Thorne and Dr. Harold Laughlin.
- Student Support: Department of Veterinary Medicine and Surgery, University of Missouri College of Veterinary Medicine.
- Cadavers were obtained from the Central Missouri Humane Society and St. Louis County Animal Care & Control.