Comparison of 7-Polydioxanone and 2-Polyglactin 910 to Close Midline and Paramedian Equine Celiotomies

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7-Polydioxanone is a superior suture for closure of ventral midline and right ventral paramedian celiotomies. Authors' address: Large Animal Clinical Sciences, Western College of Veterinary Medicine, University of Saskatchewan, Saskatoon, SK, Canada; e-mail: stacYT53@hotmail.com. © 2011 AAEP.

1. Introduction
The objective of this study was to compare the bursting strength (BS) and mode of failure of ventral midline (VM) and right ventral paramedian (RVP) celiotomies closed with either 7-braided polydioxanone (7PD) or 2-polyglactin 910 (2PG).

2. Materials and Methods
A 25-cm VM or RVP celiotomy was created in 20 fresh equine cadavers. A 200-L polyurethane bladder was inserted into the abdomen. Celiotomies were closed in a simple continuous pattern using 7PD or 2PG. The bladder was inflated with compressed air until construct failure. The horses' signalment, body weight, celiotomy/suture construct, mode of failure, and BS (mm Hg) were recorded and analyzed statistically for interactions.

3. Results
No difference was found between the mean BS of VM or RVP celiotomies closed with 7PD or 2PG. Increasing age had a negative effect on BS ($P=0.01$). RVP celiotomies had a significantly lower BS compared with VM celiotomies when age was considered ($p=0.032$). Suture type but not celiotomy type had a significant effect on mode of failure ($p=0.003$). Suture failure was the main MF for 2PG, whereas all celiotomies closed with 7PD failed at the body wall.

4. Discussion
Celiotomies closed with 7PD in a simple continuous pattern are as strong as the equine abdominal wall. Equine surgeons should consider using the strongest suture and method to close celiotomies in aged horses because they have a tendency toward a lower abdominal BS.