

Colic Surgery

prognosis, rehabilitation, and cost

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Prognosis

pre-operative variables

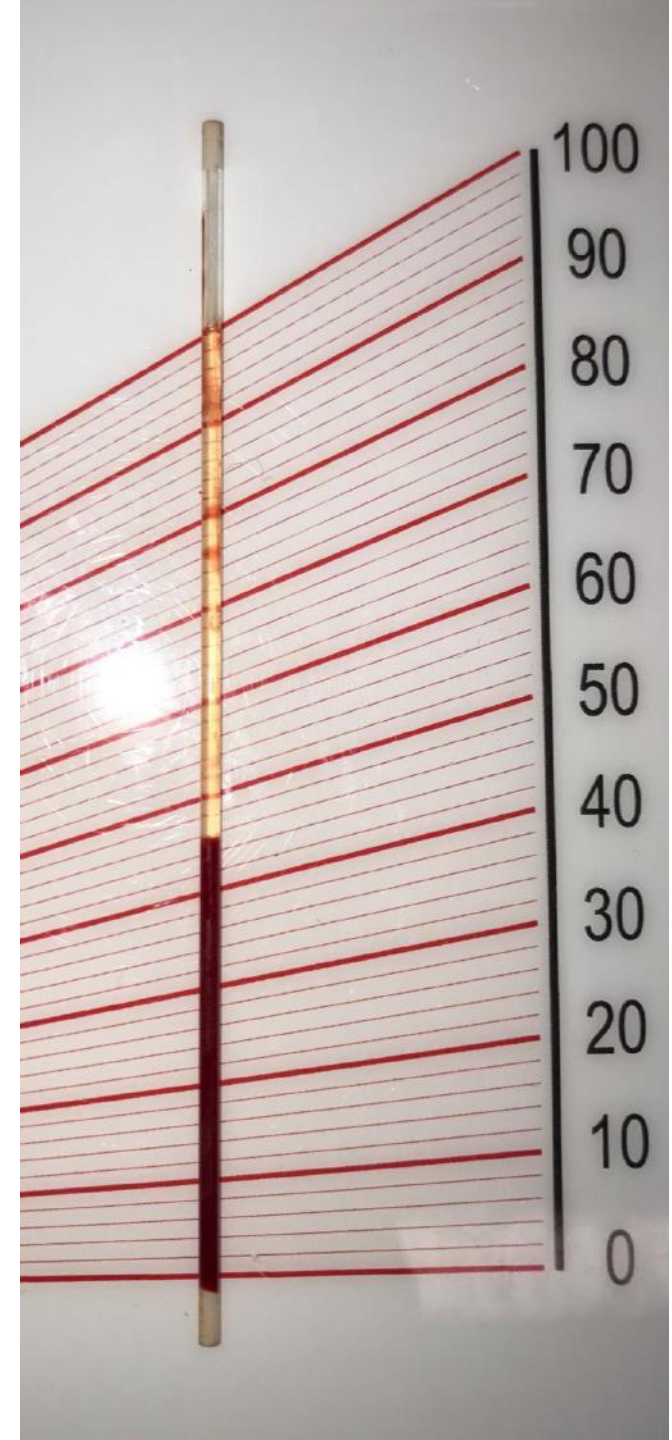
Pre-operative prognostic variables

- HR on admission
 - > 80 bpm associated with decreased survival



Pre-operative prognostic variables

- HR on admission
- PCV on admission
 - > 45-50% assoc. with decreased survival



Pre-operative prognostic variables

- HR on admission
- PCV on admission
- Blood lactate on admission
 - No proven cut-off
 - > 8-10 mmol/L considered guarded
 - Odds of non-survival increases for every 1 mmol/L increase
 - Tennent-Brown, JVIM 2010



Pre-operative prognostic variables

- HR on admission
- PCV on admission
- Blood lactate on admission
- Duration of colic
 - LCV
 - Colic 2-4 hours = 3 times more likely to die
 - Colic > 4 hours = 11.6 times more likely to die

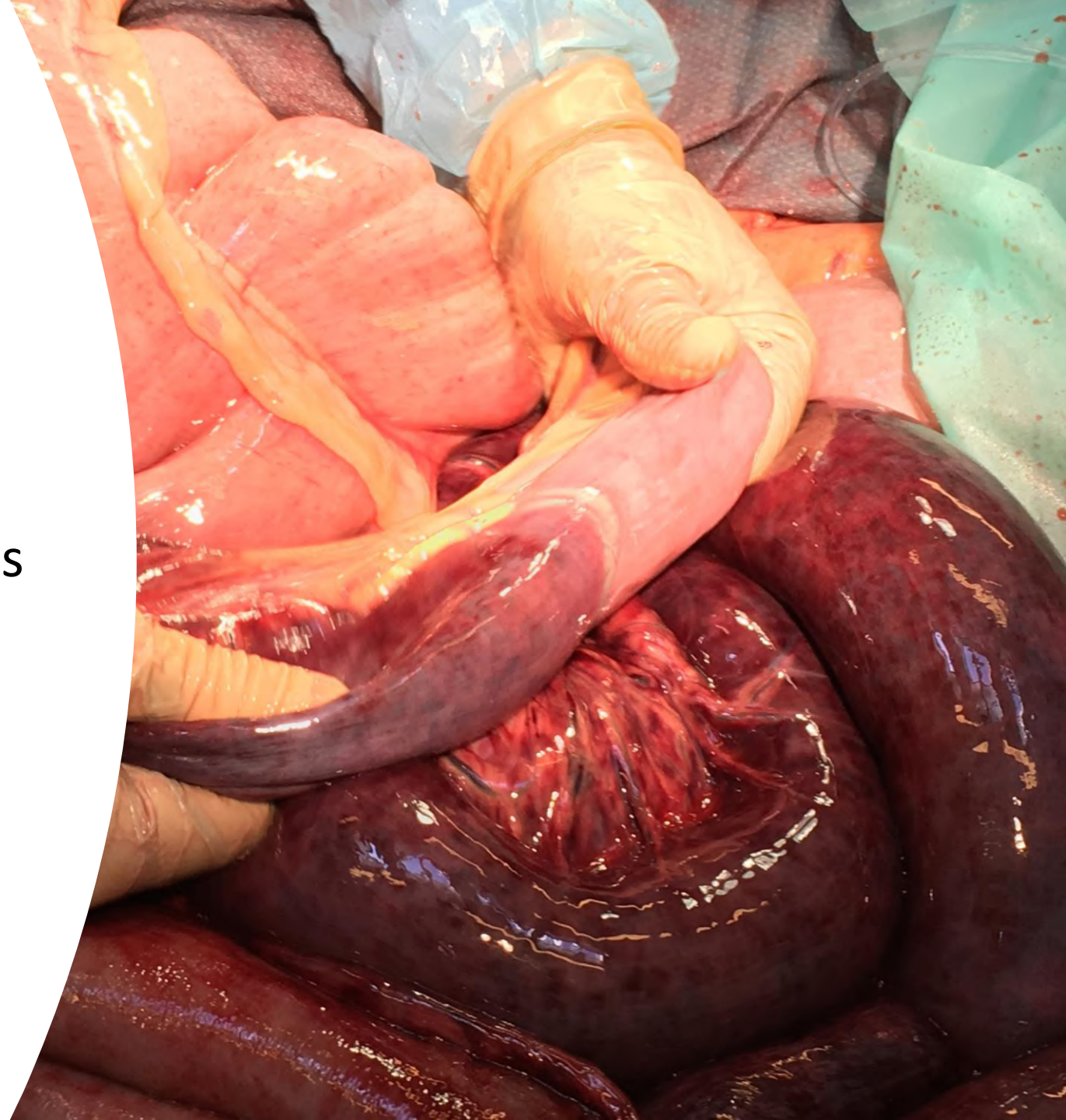


Prognosis

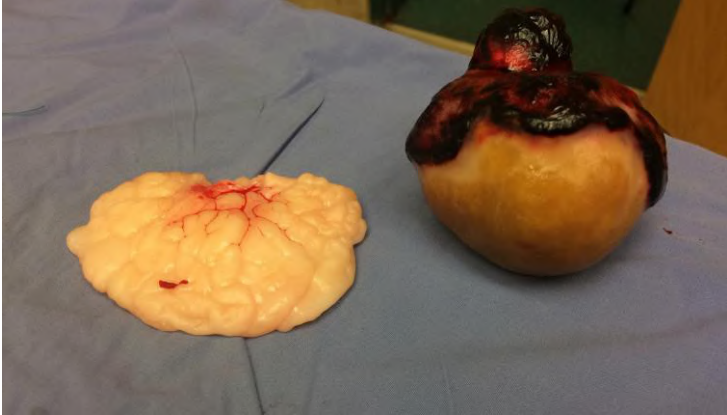
lesion types

Small intestine

- Wide variation in literature
- Recent papers - favorable prognosis



Small intestine



- Strangulating lipomas – 48-84%
- Epiploic foramen entrapment – 65% to 95%
 - van Bergen, Vet Surg 2019; Archer, EVJ 2011; Freeman, EVJ 2005
- Inguinal hernia – 56-90%
 - Kovac, Vet Glasnik 2018
- Gastrosplenic entrapment – 73% to 88%
 - Bergren, Vet Surg 2015; Jenei, JAVMA 2007; Kilcoyne, JAVMA 2016

Small intestine

- Strangulations without R&A – 85-100%
 - Pye, Vet Surg 2019; Freeman, Vet Surg 2015; Rudnick, EVJ 2022
- All R&A's – 75% to 90%
 - At 1 year post-op: 93% alive
 - Stewart, EVJ 2014; Close, Vet Surg 2014; Pye Vet Surg 2019; Rudnick, EVJ 2022
- Jejunocecostomy – 76% to 91%
 - Brown, Vet Surg 2015; Freeman, JAVMA 2010; Rudnick, EVJ 2022



Cecum

- Good prognosis for survival with surgery
 - 81% medical vs. 72% surgical*
 - *95% of horses recovered from GA survived
 - Plummer, JAVMA 2007
 - 61% medical vs. 82% surgical
 - Aitken, Vet Surg 2015
- Fair prognosis with cecal bypass
 - 65% survival to discharge, 85% long-term survival
 - Smith, EVJ 2010



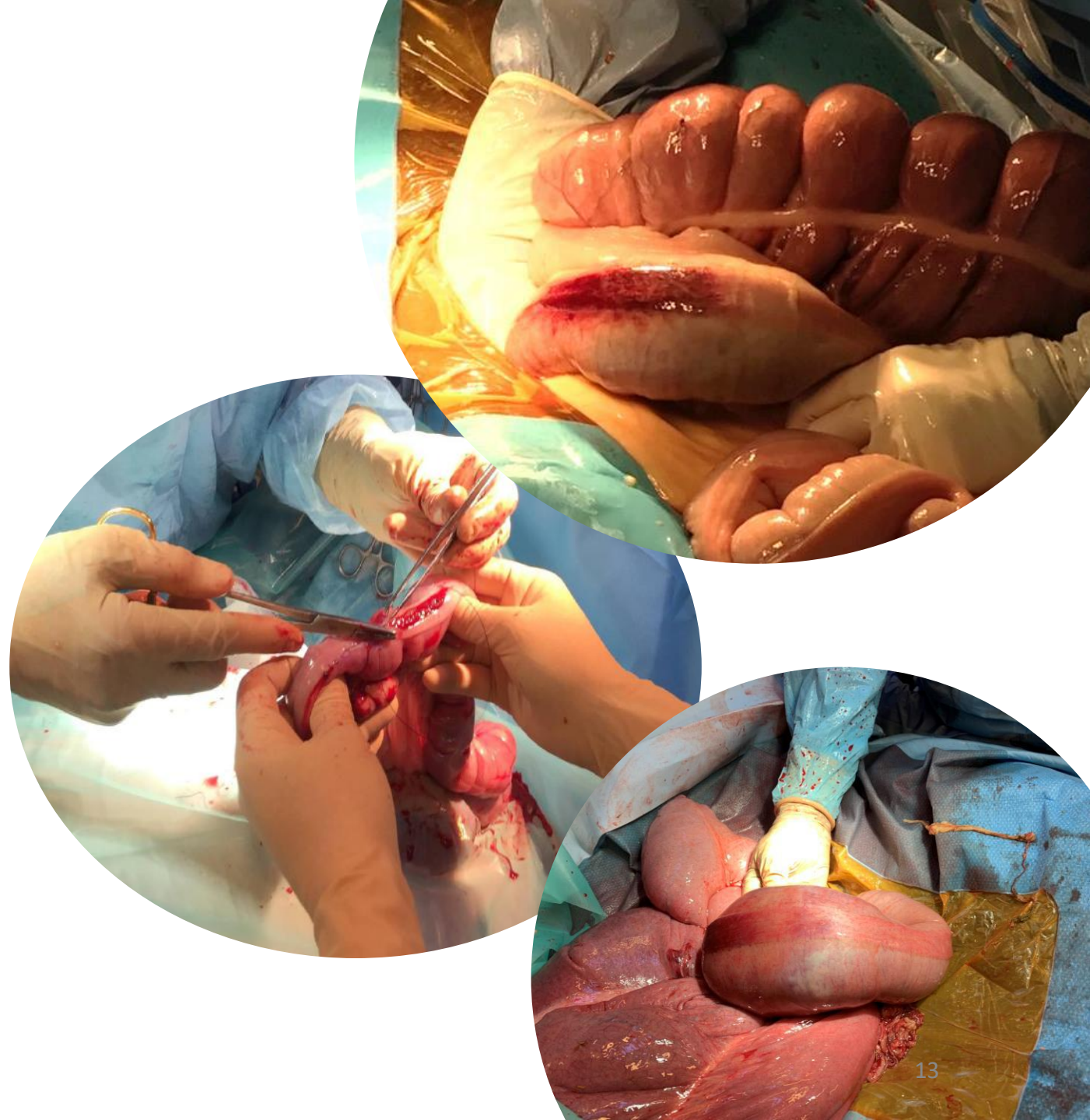
Large colon

- Right dorsal displacement: 87-93%
 - Mair, EVJ 2010; Whyard, CVJ 2019
- Nephrosplenic entrapment: 80% to 94.5%
 - Lindegaard, EVJ 2011; Baker, Vet Surg 2011; Hardy, EVJ 2000
- Large colon volvulus: 35% to 88%
 - 68-88% of those recovered from GA
 - Improved outcomes with faster interventions



Small colon

- All conditions: 91%
 - deBont, EVJ 2013
- Impaction: 95%
 - Frederico, JAVMA 2006
- Foreign bodies: 79-100%
 - Pierce, VS 2010; Oreff, EVE 2019; Haupt, EVJ 2008
- R&A's: 84%
 - Prange, VS 2010

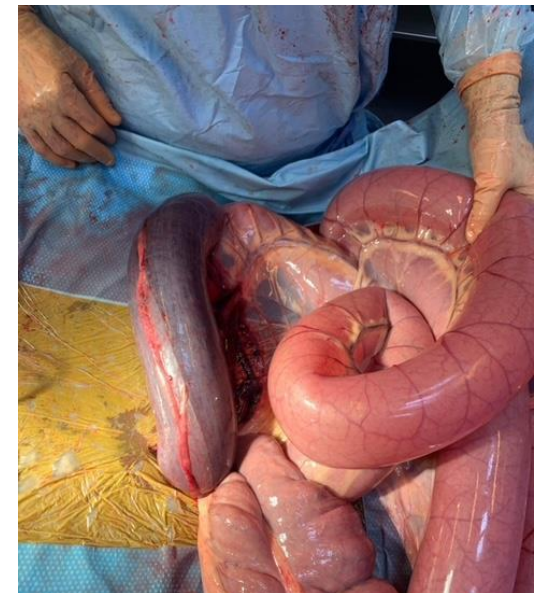


Prognosis

influence of age

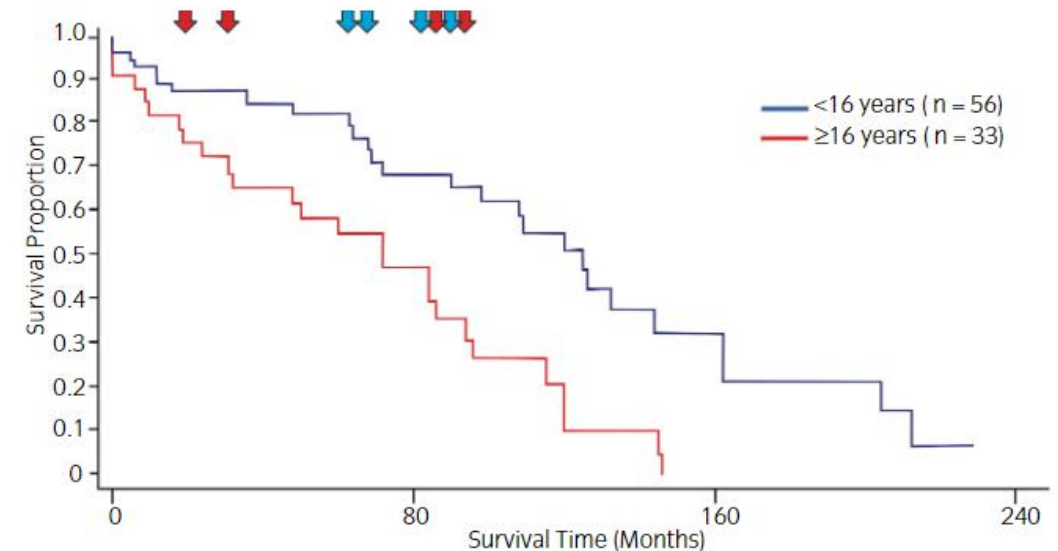
Geriatric horses

- No difference in survival to discharge
 - 59-91% (> 16 yrs) vs. 70-96% (< 16 yrs)
 - Southwood, EVJ 2010; Gazzerro, VS 2014; Rudnick, EVJ 2022
- 1.5x more likely to have surgical lesions
 - Strangulating small intestinal lesions: 60% vs. 19%
 - Gazzerro, VS 2014



Geriatric horses

- Higher odds of inappetance post-op
 - Gazerro, VS 2014
- No difference in post-op reflux
 - Gazerro, VS 2014; Boorman, VS 2019
- No difference in duration of hospital stay
 - Boorman, VS 2019
- Shorter long term survival
 - 6 yrs vs. 10 yrs
 - Rudnick, EVJ 2022



Foals

- 59-85% survival
 - If recovered from GA, 79-100%
 - Bartmann, 2002; Santschi, 2000; MacKinnon, 2013
 - No difference btw medical vs. surgical
 - MacKinnon, JAVMA 2013
- Adhesions: 8%
 - Highest risk in foals 15d – 6mo
 - Santschi, EVJ 2000





Foals

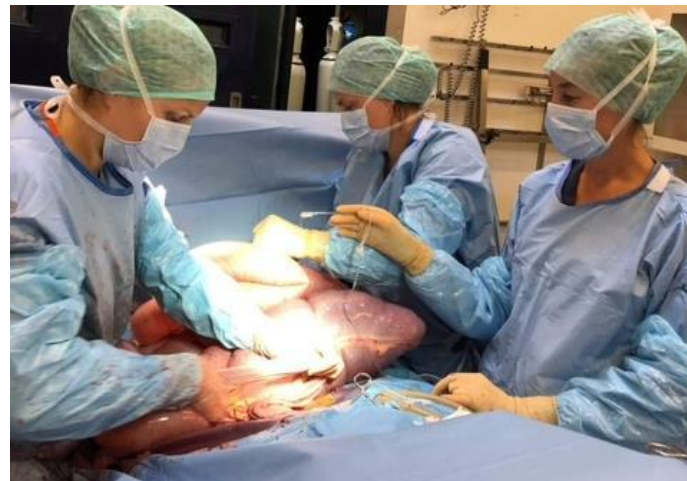
- 93% alive at 1 year
 - 83% used as intended
 - 96% performed at expected age
 - MacKinnon, JAVMA 2013
- TB foals: 63% went on to race
 - Significantly lower than siblings – 82%
 - No difference in earnings or starts
 - Santschi, EVJ 2000

Prognosis

Bjerke Dyrehospital

Our personal experience

- Statistics accumulated from August 2018 through March 2024
- Total survival to discharge = 71%
 - All colics including those euthanized under anesthesia due to grave prognosis, financial concern, etc.
- Survival among horses recovered from anesthesia = 84,5%



Return to Use

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- At 6 months post-op:
 - 68% performing intended use
 - 54% at/above previous level of performance



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- “Long term”:
 - 84 – 86% in use
 - 78,5 – 83,5% at/above previous level
 - 89% of horses without previous work started in work



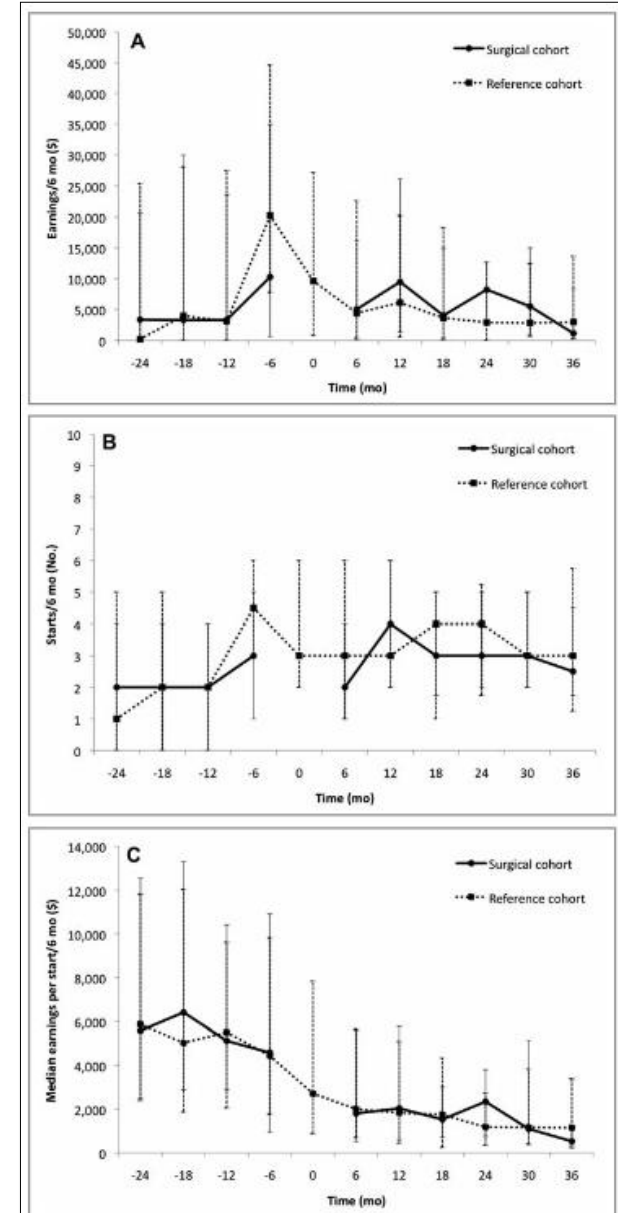
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- **Less likely to return to use:**
 - Incisional infection, hernia, laminitis, diarrhea, prior orthopedic condition, prior colic surgery



Thoroughbred racing horses

- 3 studies focused solely on racehorses
 - Must have raced prior to surgery
 - TBs undergoing colic sx vs. 2 age matched controls
- 65-76% return to racing
- Variable findings on performance
 - US studies: no significant difference in starts, overall earnings
 - Lower earnings in first 6 months post-op
 - Korean study: decreased performance in 3 & 4 year olds
 - Smaller groups?
- No difference in career length in any study



What to expect after surgery

recovery and rehabilitation time

Immediate expectations

- Typical hospital stay: 7 days
 - Off all medications at discharge
 - Tolerating hay and mash – client may need to continue refeeding
- Cost estimate: 80.000 – 100.000



General aftercare plan

- Weeks 1-4: Box rest. Hand walk 5 minutes twice daily.
 - Increase length of walking 5 minutes each week.
 - Weeks 5-6: Medical paddock. Hand walk up to 30 minutes twice daily.
 - Weeks 7-9: Regular paddock. Begin walk and trot work under saddle.
 - Total 30 minutes riding daily.
 - Week 10: Return to full training.
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- Clients advised to begin CARE physiotherapy 4 weeks after surgery.



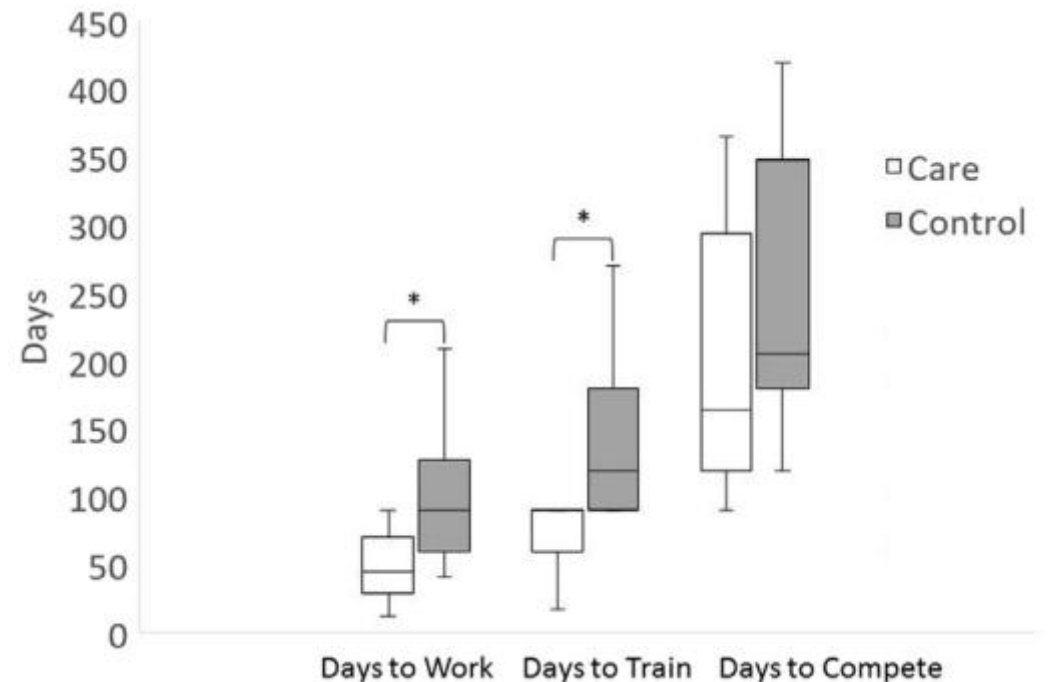
Physiotherapy

- Commonly see loss of epaxial and abdominal muscle after surgery
 - Loss of core strength, diminished performance
- 4 weeks of core exercises vs. control
 - Started 4 weeks post-op
- CARE horses
 - Faster return to under saddle work
 - Faster return to full training
 - Improved performance as compared to pre-op

The Effect of Core Abdominal Muscle Rehabilitation Exercises on Return to Training and Performance in Horses After Colic Surgery

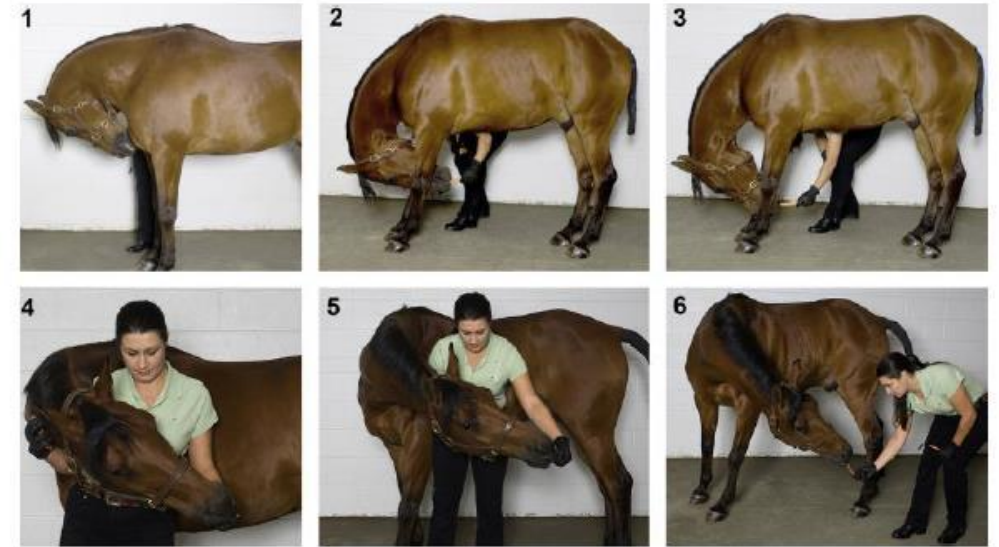
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Picture 7: Place hand under chest and press upwards, so horse lifts withers

Picture 8: Place hand just above tail head and press downward, so horse tucks hind end



Bjerke Dyrehospital

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