

**Summary of the DVM thesis No 15127, Faculty of Veterinary Medicine, Urmia University.**

**The Academic year: 2024-2025**

**Author: Hamid Kiadaliri**

**Thesis Title:** Assessment of changes in hematologic and biochemical parameters associated with pain following pelvic flexure incision in donkeys (*Equus asinus*).

**Abstract:**

Diagnosing pain and identifying behavioral changes in donkeys is challenging due to their stoic nature. Moreover, the limited knowledge of their normal behavior and habits makes it difficult for veterinarians to assess pain and manage adequate analgesia. The objective of this study was to evaluate probable changes in serum biochemical factors and abdominal adhesions formations following pelvic flexure colotomy in donkeys. Seven clinically healthy, sexually mature castrated male donkeys underwent pelvic flexure colotomy. Blood samples were collected before and three consecutive days after surgery for complete blood count and biochemical analysis, including cortisol, C-reactive protein, serum amyloid A, fibrinogen, triglycerides, and cholesterol. Abdominal adhesions were scored two weeks post-surgery through necropsy findings. A significant increase in serum cortisol, C-reactive protein (CRP), serum amyloid A (SAA), fibrinogen, triglycerides, and cholesterol levels were observed three days post-surgery compared to pre-operative levels. The highest score of adhesion formations were observed on cecum and right ventral colon. The sensitivity and specificity of data for clinical signs of pain were 93% for increased cortisol levels, 67% for triglycerides, and 63% for fibrinogen. It appears that serum cortisol measurement is the best indicator for monitoring the general condition and the occurrence of clinical pain following colotomy in donkeys.

**Keywords:** Cortisol, serum amyloid A, C-reactive protein, triglycerides, donkey colotomy.