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Effects of electroejaculation and ketamine-HCl on serum cortisol, progesterone, and testosterone in the male cat

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The influence of manual restraint, ketamine-hydrochloride anesthesia and electroejaculation under anesthesia on circulating levels of cortisol, progesterone and testosterone was examined in male domestic cats. In the first experiment, cats were anesthetized with ketamine-HCl (17.5 mg/kg of body weight) and serially bled (controls) or serially bled and electroejaculated. These animals showed signs of recovering from anesthesia within 45 to 60 minutes of ketamine-HCl injection. Average serum cortisol concentrations increased (P less than 0.01) over the 84-minute sampling interval in both the electroejaculated and control groups. Cortisol levels reached their maximum concentration in the electrically stimulated males immediately postelectroejaculation (95.1 ng/ml) and were significantly greater (P less than 0.01) than in the controls (36.1 ng/ml) at a comparable time. Maximal mean cortisol concentrations in the control group (62.8 ng/ml) occurred 54 minutes after the first blood sample and occurred together with the onset of anesthesia recovery. Mean testosterone levels did not differ between electroejaculated and control cats, but did decrease (P less than 0.05) between the first and last blood sampling in both groups. In the second experiment, cats were bled on the same time schedule as in Experiment 1, but were bled while awake and manually restrained, or else during a deeper plane of anesthesia induced and maintained with higher doses of ketamine-HCl (initial dose, 23 mg/kg). Mean serum cortisol levels were greater (P less than 0.05) during manual restraint (range, 36.3-41.1 ng/ml) compared to deep anesthesia (range, 16.7-25.8 ng/ml), but did not change over the 84 minute sampling interval in either group. (ABSTRACT TRUNCATED AT 250 WORDS)

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