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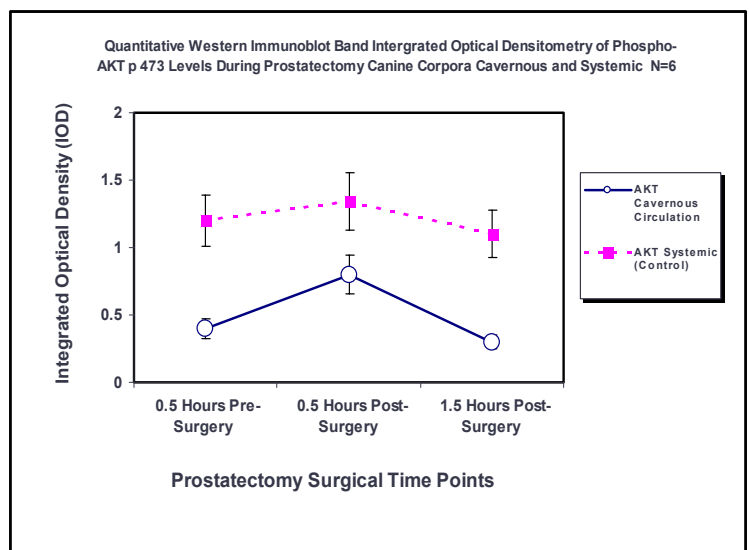
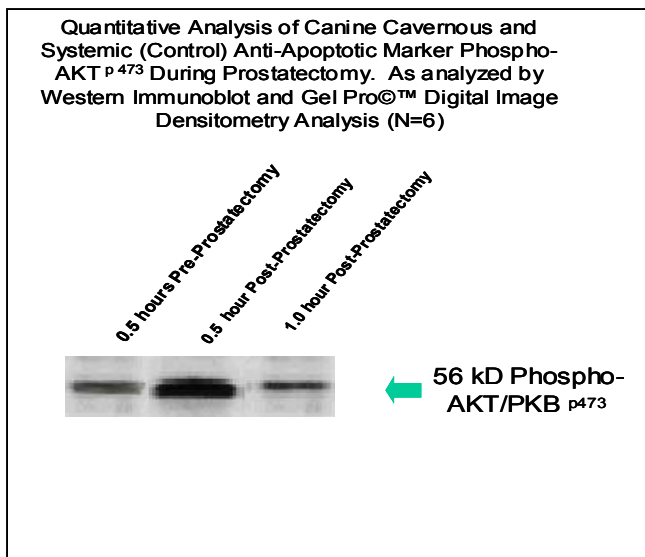
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CORPORAL CAVERNOSAL APOPTOSIS FOLLOWING RADICAL PROSTATECTOMY IN THE CANINE MODEL

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Introduction and Objective: Erectile dysfunction (ED) following human radical prostatectomy (RP) is a well-documented event that may involve a neuropraxia-induced apoptosis leading to corporal fibrosis. We developed a canine model to assess anti-apoptotic protein, phosphorylated AKT⁴⁷³ (AKT/PKB⁴⁷³) and the pro-apoptotic protein, phosphorylated-Bad^(pSer136), as markers of apoptosis in the corporal cavernosal tissue. We hypothesize that these markers may reflect the degree of neuropraxia injury following radical prostatectomy. **Methods:** Six adult male canines (n =6) underwent RP. At three RP time points (0.5 hr pre-RP, 0.5 hr post-RP, and 1 hr post-RP), whole blood was extracted from corporal cavernosal tissue and systemic brachial veins of each animal. To avoid rapid commencement of apoptosis, samples were stored on ice (≤ 30 sec.) and centrifuged at $14,000 \times g$ for 15 minutes. Equal amounts of protein were resolved on 4-20% gradient SDS-PAGE gels and probed with rabbit antibodies against phosphorylated-AKT/PKB^(pSer473), phospho-Bad^(pSer136), and endothelial nitric oxide synthase (eNOS). Results were quantified by the Gel-Pro[©]™ program and expressed as mean integrated optical densitometry units (IOD). **Results:** In four of the six samples, phospho-AKT^(pSer473) levels in the corpora cavernous plasma increased from the pre-RP to 0.5-hour post-RP, returning to baseline at 1-hour post-RP. AKT levels remained unchanged in the peripheral plasma. Phospho-Bad^(pSer136) levels were obtained in three of the six samples and were elevated at 1-hour post-RP. eNOS levels reflected the activity of AKT and were elevated only at the 0.5-hour post-RP. **Conclusions:** Our early results in a canine model demonstrate that radical prostatectomy induces corporal cavernosal apoptosis with early up-regulation of phospho-AKT and eNOS and subsequent elevation of the pro-apoptotic Bad^(pSer136) protein. These protein markers reflect ongoing apoptosis in

the corporal cavernosal tissue and can quantify the degree of neuropraxia following radical prostatectomy.



Data are presented as mean \pm SD unless otherwise noted

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