Article No. (1)
Anatomical and Ultrasonographical Studies on Tendons and Digital Cushions of Normal Phalangeal Region in Camels (Camelus dromidarius)

By

Abu-Seida, A.M.; Mostafa, A.M. and Tolba, A.R.
Introduction

• The camel’s foot resembles a tyre filled with fat instead of air (Blight et al., 1976). It is well designed to accommodate with the loose sandy soils of the desert (Wilson, 1984).

• The foot pad of camels consisted of several layers including: the sole (cornified pad), common coverings, digital cushions and yellow bed (Hifney et al., 1988).
Introduction

• The foot affections in camels represented 42.5% of the total limb affections and the affections of the soft tissues of the foot represented 77.1% of the total foot affections (Zabady, 1999). Another study concluded that foot affections representing 46.9% of the surgical affections causing lameness in camels (Mostafa, 1979).
Introduction

• The impetus of the present study was the observation that most of the studies performed on camel’s feet focused extensively on the osseous components of the digit, either normal (Mostafa et al., 1993) or diseased (Lotfia et al., 1996). Additionally, computed tomography (CT) was previously used to describe the anatomical structures of the fore feet in normal camels (Badawy, 2011).
Introduction

- The ultrasonography has therefore been used in our study to evaluate the tendons and digital cushions in normal camel’s feet. Our aim is to describe the normal anatomic and ultrasonographic findings of the tendons and digital cushions to facilitate future diagnosis of any pathological lesions affecting the soft tissues of the phalangeal region in camels.
Materials and Methods

Ultrasonographic Examination:

It was divided into:

In vitro ultrasonographic study was performed on ten apparently normal feet specimens of both fore- and hind limbs (Five limbs each). The specimens were obtained from recently slaughtered mature camels of both sexes and of different ages and body weights.
Materials and Methods

• Each foot was cleaned, clipped and shaved at the dorsal and planter aspects of the phalangeal region. After using the ultrasound coupling gel, the area from the fetlock to the nails was scanned in both sagittal and transverse planes in each digit. This area was scanned on dorsal, planter and solar aspects using Toshiba ultrasound device connecting to 6-8 MHz linear and transducer.
Materials and Methods

In vivo ultrasonographic screening was performed on the four feet of three clinically normal mature camels using the same screening system applied for the in vitro study. All camels were tranquilized and then examined in both sternal and lateral recumbency using the same ultrasound device.

Anatomical examination

After our ultrasonographic examination of the ten feet specimens, each specimen was immersed in a mixture of formalin (10 %) and phenol (5 %) for routine anatomical dissection.
Results
Digital extensor tendon.

(a) Sagittal ultrasonogram just below the fetlock joint showing the bifurcation of hyperechoic common digital extensor tendon.

(b) Sagittal ultrasonogram at the dorsal aspect of the pastern joint showing the stretching of the extensor tendon.
Middle digital cushion

(a) Transverse ultrasonogram at the middle third of the solar aspect of the claw showing high echogenic oval middle digital cushion and oval hyperechoic fibrocartilaginous enlargement of the deep digital flexor tendon. (b) Sagittal ultrasonogram of the middle digital cushion showing high echogenic fish-like structure surrounded with hyperechoic capsule.
Different layers of the foot

Transverse ultrasonogram at the middle third of the solar aspect of one claw showing, hyperechoic conified sole, anechoic epidermal layer and high echogenic digital cushions. Notice the crescentric appearance of the axial and abaxial digital cushions and the oval appearance of the middle one.
Interdigital Septum

Transverse ultrasonogram at the level of interdigital septum showing two crescentic axial digital cushions, two oval middle cushions of both claws and anechoic interdigital septum.
Dissected dorsal view of the camel's phalangeal region

a) Tendon of M. extensor digitorum lateralis – (b&c) Tendon of M. extensor communi - (d) Common digital extensor tendon - (e) Proper tendon of the digit

1- Metacarpal bone 2-Divided metacarpal bone 3-Fetlock joint 4-Proximal phalanx 5-Pastern joint
1-Superficial digital flexor tendon which splitted to pass 2
2-Deep digital flexor tendon
3-Lower fibrocartilagenous enlargement. (a) Middle digital cushion
(a) Dissected solar view of camel's foot showing the three digital cushions.
(b): Cross section at the level of interdigital septum showing the digital cushions.

1-Middle phalanx. 2-Middle digital cushion 3-Axial digital cushion 4-Abaxial digital cushion 5-Interdigital septum.
Conclusion

• Based on our anatomic and ultrasonographic findings, we strongly recommend ultrasonography as an impressive cross sectional diagnostic imaging in camel foot. Our future clinical study will therefore be allocated to determine the soft tissue abnormalities associated with the phalangeal region of camels using ultrasonography.
Thank you!
Article No. (2)

Ultrasonographic Diagnosis of Some Scrotal Swellings in Bulls

By

Ashraf M. A. Abu-Seida
Introduction

Despite the fact that ultrasonography has been used extensively for the diagnosis of several types of testicular and epididymal affections in human, relatively little literature is available in veterinary practice (Kim et al., 2012; Enginler et al., 2012)
Introduction

Scrotal swellings may be originated from the scrotum itself or from its contents; differential diagnosis of these swellings by physical examination seems difficult.

The aim of the present study was to record the ultrasonographic findings of some scrotal swellings in bulls which could help in the differential diagnosis and prognosis of these affections.
Materials and Methods

• Animals:
Eight bulls of different ages, weights and breeds suffered various scrotal swellings

• Location:
Surgery clinic at Faculty of Veterinary Medicine, Cairo University

• Duration:
Between June 2008 and July 2011.
Materials and Methods
Scrotal ultrasonographic examination was done for all bulls using Toshiba ultrasound device connecting with 3.5-5.0 MHZ convex transducer. The examined area was shaved and ultrasound coupling gel was applied. The scrotum and its contents were scanned in both sagittal and transverse planes (Eilts and Pechman, 1988). Open castration was carried out in one bull with suspected testicular tumor and the histopathological examination of the neoplastic testis was carried out as usual.
Results
Urethral rupture with scrotal swelling

Scrotal ultrasonogram showing thick hyperechoic skin and normal echogenic testes
Urethral rupture with scrotal swelling

The surrounding tissue showing diffuse anechoic areas separated by hyperechoic threads
Urethral rupture with scrotal swelling

Ultrasonogram showing rounded, smooth, hyperechoic urethral calculus with distant shadowing
Urethral rupture with scrotal swelling

Ultrasonogram showing the site of the urethral rupture with distant anechoic area
Testicular hypoplasia

Trans-scrotal ultrasonogram of left testis. Notice, the left testis is less echogenic and smaller than the right one.
Testicular hypoplasia

The left testis is less echogenic than the right one and the left rete testis is more echogenic than the right one.
Testicular Neoplasm
Trans-scrotal ultrasonogram showing mixed echogenicity. Notice, several anechoic areas, hyperechoic masses and areas of normal testicular echogenicity.
Testicular Neoplasm

Sertoli cell neoplasm showing well differentiated elongated cells with multiple nuclei (malignancy) (H&E X 400).
Hydrocele

Scrotal ultrasonogram showing clear hyperechoic skin with anechoic fluid accumulated in the vaginal cavity and normal testicular echotexture
Conclusion

Ultrasonography is a good tool for differential diagnosis of different scrotal swellings in bulls
Thank you!
Article No (3)
Trans-abdominal Intra-prostatic Injection of Ethanol and Oxytetracycline Hcl under Ultrasonographic Guidance as a New Approach for Treatment of Benign Prostatic Hyperplasia in Dogs

By
Ashraf M. A. Abu-Seida and Faisal M. Torad
Introduction

• The canine prostate is a well developed musclo-glandular body that compensates the absence of seminal vesicles and bulbo-urethral glands.

• In dogs, it completely encompasses the proximal portion of the male urethra and neck of the bladder (Victoria and Melonei, 2005)
Introduction

• The most common prostatic diseases are benign prostatic hyperplasia (BPH), intra-prostatic cyst, para-prostatic cysts, prostatic abscess, prostatic calculi, prostatic urethral stricture and neoplasm (Safwat, 1989)

• About 90% of the dogs with prostatic affections were over 4 years of age. Doberman Pinscher was the most common breed with prostate disease (Krawiec and Heflin, 1992)
Introduction

• BPH is a spontaneous and age-related disorder of intact dogs, which is associated with clinical signs of sanguinous prostatic fluid, constipation and dysuria (Johnston et al, 2000)
• The dog is the only species, along with humans, in which prostatic hypertrophy develops spontaneously and almost universally with age.
• Benign prostatic hyperplasia (BPH) is benign enlargement of the prostate glands that is thought to result from hormonal imbalance.
Introduction

• The occurrence of BPH was studied with different incidence. It was recorded in 87% (Hornbuckle, 1978), 60% (Weaver, 1978), and 80% (Johnston et al, 2000) in all male dogs over 5 years of age.

• The following pathophysiologic sequence of prostatic diseases was suggested: prostatic hyperplasia→ductile blockage→prostatic fluid stasis→prostatic cyst formation+infection→prostatitis→prostatic abscess→end-stage prostate disease
Introduction

Diagnosis of BPH in dogs is based on: case history, clinical signs, abdominal and rectal palpations, laboratory investigations, contrast radiography, ultrasonography and ultrasound guided-needle biopsies. Definitive diagnosis of BPH is frequently based upon histopathologic criteria (Thrall, 2005)
Introduction

Various treatment modalities were suggested for treatment of BPH in dogs including: Castration and antiandrogen therapy, transurethral microwave thermo-therapy, oral treatment with chlormadinone acetate at 2.0 mg/kg/day/7 days, chemoablation using transurethral intraprostatic absolute ethanol injection (20 mL/animal), oral administration of a new steroidal anti-androgen, osaterone acetate, 5alpha-reductase inhibitor finasteride, transurethral injection (using prostaject device) of ethyl alcohol and intraglandular injection of ethanol, phenol, polidocanol and oxytetracycline Hcl
Aim of the Work

The aim of the present study is to evaluate a new minimally invasive alternative chemical destruction of prostate in case of BPH by trans-abdominal intra-prostatic injection of absolute ethanol or oxytetracycline Hcl.
Material and Methods

• **Animals:** 12 dogs

• **Location:** Surgery clinic at Faculty of Veterinary Medicine, Cairo University.

• **Collecting data:**

  Full case history, animal description, all clinical signs and all physical, abdominal and rectal examinations' findings.
Material and Methods

Utrasonographic examination was carried out on each case to confirm the diagnosis of benign prostatic hyperplasia. Toshiba ultrasound device connected with 3.7-5 MHz convex transducer was used. The dogs were tranquilized with xylazine HCl. The prostate could be examined in dorsal recumbency with both sagittal and transverse scans.
Material and Methods

**Group I (5 Dogs)**
- Intra-prostatic injected with absolute ethanol (5-10ml) by using the ultrasound guided needle after aspiration of prostatic fluid if present

**Group II (5 Dogs)**
- Intra-prostatic injected with oxytetracycline HCl (5-10ml) by using the ultrasound guided needle after aspiration of prostatic fluid if present
Material and Methods

• The treated dogs were followed up every 15 days for 2 months by ultrasound examination.
• Repeated intra-prostatic injections, whenever required, were carried out after one month of the first injection.
• The animals were followed up till 6 months post injection by phone calls for any recurrence of clinical signs.
• All data about each dog were recorded in a special report
Material and Methods

• Two of the affected dogs were excluded from the treatment protocol because they were suffered cauda equina syndrome with paraplegia beside BPH. These animals were euthanized on the request of the owners by using high dose of thiopental sodium given intravenously. Postmortem examination was carried out and the affected prostates were excised
Results
Results

• The age of the dogs ranged between 4-14 years. Rottweiler breed was the most common affected dogs. The affected dogs’ breed were Rottweiler (4), German shepherd (3), Dopperman (3), Griffon (1) and Bull Mastiff (1).

• The most common signs were tenesmus, dysurea, hematouria, anorexia, spontaneous dripping of blood from the penis without urination and constipation.

• On rectal examination, the dogs had enlarged prostates. The abdominal examination revealed distension and pain.
Ultrasonogram of slight degree of BPH in a 4-year-old German shepherd Dog
Ultrasonogram of moderate degree of BPH in a 4-year-old German shepherd Dog showing homogenous, fine and slightly hyperechoic echotexture with smooth hyperechoic capsule
Ultrasonogram of moderate degree of BPH in a 6-year-old German shepherd Dog showing two intra-prostatic cysts
Ultrasongram of severe degree of BPH in 10-year-old Rottweiler dog.
(a) Ultrasonogram of moderate degree of BPH in a 5-year-old German shepherd dog showing large intra-prostatic cyst

(b) Ultrasonogram of the same dog after aspiration of the cystic fluid and intra-prostatic injection of absolute ethyle alcohol
Ultrasonogram of the same dog after 45 days of intra-prostatic injection of absolute alcohol showing approximately normal-sized and hyperechoic prostate gland.
Ultrasonogram of moderate degree of BPH with intraprostatic cyst in a 5-year-old German shepherd dog
Ultrasonogram of the previous dog after 15 days of intra-prostatic injection of Oxytetracycline HCl showing decreased-sized and hyperechoic prostate gland with regression of the intraprostatic cyst
Ultrasonogram of the same dog in Figure (8) after 3.5 month of intra-prostatic injection of Oxytetracycline Hcl showing decreased-sized and hyperechoic prostate gland with regression of the intraprostatic cyst
Gross appearance of BPH: urinary bladder (U.B) and bilaterally symmetrically enlarged prostate gland (PG)
Conclusions

• In conclusion, Trans-abdominal intra-prostatic injection of either oxytetracycline Hcl or ethanol is an easy applicable, safe, quick, cheap, less invasive and effective approach for treatment of canine BPH and consequently in human BPH especially in high risk or sexually active patients after further study
Thank you !
The Effect of Different Formulations of Calcium Hydroxide on Healing of Intentionally Induced Periapical Lesions in Dogs

By

S. El-Ashry, A. Abu-Seida, H. Al-Boghdady, K. El-Batouty and M. Abdel-Fattah
Introduction

• Calcium hydroxide is considered to be the most frequent intra canal medicament. It gains its action through its chemical dissociation into calcium ions and hydroxyl ions. Many vehicles were used for mixing of calcium hydroxide producing different degrees and rates of chemical dissociation (Podbielski et al., 2003; and Schafer and Bossmann, 2005)
Introduction

The released hydroxyl ions from calcium hydroxide raise the pH of the surrounding media producing unsuitable environment for bacterial growth. Calcium hydroxide is considered a potent antiinflammatory compound through decreasing the adhesion capacity of the macrophages, neutralizing the endotoxins and deactivation of many inflammatory mediators (Khan et al., 2008).
Introduction

All these advantages of Ca (OH)2 are opposed by a critical disadvantage which is the weakening effect of the root canal dentin especially with the prolonged use of calcium hydroxide. This extra weakening of the endodontically treated teeth makes it mandatory to determine the ideal combination and time for the use of Ca (OH)2
Aim of the work

The aim of the present work is to study the effect of different formulations of Ca (OH)2 on healing of induced periapical lesions in dogs.
Materials and Methods

Classification of groups and subgroups
Materials and Methods

Induction and dressing of periapical lesions: General anesthesia was performed. Access cavities were opened in the desired teeth using. A k-file # 15 was introduced into the root canals for traumatization of the pulp. The accesses were left open for three weeks to induce periapical lesions (Thibodeau et al. 2007). Pulp extirpation together with irrigation by saline solution were applied until there were no pulp tissues in the root canal. The dressing materials were applied to the root canals. The access cavities were closed using zinc phosphate cement.
Materials and Methods

- **Euthanasia** of the dogs was done at the end of each experimental period using over dose of Thiopental sodium.

- **Histopathological examination:** The apical third of the root and its surrounding bone were carefully removed. Teeth were placed in 10% neutral buffered formalin for 72 hours then decalcified in 17% ethylene diamine tetra acetic acid (EDTA). After decalcification, specimens were prepared and stained for histopathological examination.
Materials and Methods

• The specimens were evaluated by histopathological examination and the total inflammatory cells count.
• The data of inflammatory cell count were subjected to statistical analysis using ANOVA and T-test to record the statistical difference of each group and subgroups.
Results
Photomicrograph of group (I) (2 weeks): Ca (OH)2 + Saline subgroup
Generalized edema with connective tissue fibrils (H &E X10)
Photomicrograph of group (I) (2 weeks):
Ca (OH)2 + CHX subgroup

Chronic inflammatory surrounded by edematous connective tissue. Fibrillar dissociation was seen in the periodontal ligament (H & E X40).
Photomicrograph of group (I) (2 weeks):
Ca (OH)₂ + Iodoform subgroup
Periapical granulation tissue surrounded by edema (H & E X10).
Photomicrograph of group (I) (2 weeks):

Control subgroup

Dilated and congested blood vessels among mononuclear inflammatory cells and delicate connective tissue fibrils. Notice the presence of osteoclasts (H & E X40).
Photomicrographs of group (III) (6 weeks):

(A) Absence of any periapical lesion and direct contact of the periodontal ligament with the adjacent bone (H& E X10). (B) Mononuclear inflammatory cells, areas of hyaline degeneration and edema (H & E X40). (C) Large edematous area in the periapical tissue (H & E X10). (D) Mnonuclear inflammatory cells, areas of hyaline degeneration, fibrillar dissociation and numerous blood vessels(H& E X40).
Table 1: The main total inflammatory cell count in the different groups and subgroups

<table>
<thead>
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<th>B</th>
<th>C</th>
<th>D</th>
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<td></td>
<td>Saline</td>
<td>CHX</td>
<td>Iodoform</td>
<td>control</td>
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<td><strong>Group I</strong></td>
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<tr>
<td>(2Weeks)</td>
<td>19±5</td>
<td>49±8</td>
<td>32±5</td>
<td>89±12</td>
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<tr>
<td></td>
<td>A</td>
<td>B</td>
<td>C</td>
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<tr>
<td>(4Week)</td>
<td>13±3</td>
<td>23±3</td>
<td>21±3.6</td>
<td>63±9</td>
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<tr>
<td></td>
<td>B</td>
<td>D</td>
<td>D</td>
<td>C</td>
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<tr>
<td><strong>Group III</strong></td>
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<tr>
<td>(6Weeks)</td>
<td>2±1.5</td>
<td>13±4.8</td>
<td>13±5.3</td>
<td>36±4</td>
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<tr>
<td></td>
<td>C</td>
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<td>A</td>
<td>B</td>
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Conclusions

The use of saline as a vehicle for Ca (OH)₂ has a favorable action on periapical tissue healing in endodontically treated dogs' teeth.
Thank you!
Article No. (5)
Efficacy of Diclofenac Sodium Either Alone or Together with Cefatoxime for Control of Postoperative Pain in Dogs Undergoing Ovariohysterectomy

By
Abu-Seida, A.M.
INTRODUCTION

• Ovariohysterectomy is one of the routine laparotomies in small animals practice. This operation is a painful surgery that required postoperative anti-inflammatory drug.

• Several drugs were used as postoperative analgesics in dogs undergoing ovariohysterectomy including: carprofen, ketoprofen, meloxicam, morphine, long acting sufentanil formulation (Slingsby et al, 2006).

• Nonsteroidal anti-inflammatory drugs have been successfully used to control pain in dogs and cats by inhibition of cyclo-oxygenase
INTRODUCTION

• Diclofenac (DF) is a non-steroidal anti-inflammatory drug, which has been used in human pharmacotherapy for many years. Its use in veterinary medicine is relatively limited.

• In veterinary practice, DF is indicated for treatment of various inflammatory and degenerative post-trauma disorders and lameness in horses, cattle and pigs, as well as pre-operative treatment for cataract extraction (Booth 2001).
INTRODUCTION

University of Melbourne pain scale was developed by (Firth and Haldane, 1999) to evaluate postoperative pain in dogs. This scale based upon behavioral and physiologic measurements as reliable evaluation of degree of pain in dogs during the postoperative period and their response to analgesics.
AIM OF THE WORK

The aim of the present study is to assess the efficacy and adverse effects of diclofenac sodium on its own and together with cefatoxime as postoperative pain control in dogs undergoing ovariohysterectomy.
Materials and Methods

Animals: twenty mongrel bitches aged 8 months-3 years and weighted 10-35kg

Location: Surgery clinic at Fac. of Vet. Med., Cairo University

Anesthesia and Surgical Procedure: The same anesthetic protocol and surgery were used for all dogs
MATERIALS AND METHODS

Postoperative Medications (20 bitches)

- **Group I**: Diclofenac sodium 1.1mg/kg
- **Group II**: Control Saline, 1 ml
- **Group III**: Cefatoxim 10mg/kg
- **Group IV**: Diclofenac sodium + Cefatoxim
MATERIALS AND METHODS

• Assessment of Postoperative Pain:
  The dogs were scored for signs of pain at 0,1,2,3,4,5,6,8,12 and 24 hours after surgery using a pain scale modified from University of Melbourne (Firth and Haldane, 1999) Table (1).

• Hematoma formation at the surgical site, persistent bleeding from the incision, or vomiting and diarrhea in the immediate postoperative period was recorded.

• Statistical analysis of the results was carried out
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<td>b)</td>
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<td>e)</td>
<td>- Percentage increase in heart rate relative to preprocedural rate</td>
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<td>&gt;50%</td>
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<td>&gt;100%</td>
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<td>- Percentage increase in respiratory rate relative to preprocedural rate</td>
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<td>- Rectal temperature exceeds reference range</td>
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<td></td>
<td>- Salivation</td>
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<td>Response to palpation</td>
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# Materials and Methods

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| Posture                   | a) Guarding or protecting affected area(includes fetal position)            | 2   |     |     |     |
|                           | b) Choose only one                                                          | 0   | 1   | 1   | 2   |
|                           | - Lateral recumbency                                                        | 1   |     |     |     |
|                           | - Sternal recumbency                                                        | 1   |     |     |     |
|                           | - Sitting or standing, head up                                              | 2   |     |     |     |
|                           | - Standing head hanging down                                                | 1   |     |     |     |
|                           | - Moving                                                                    | 2   |     |     |     |
|                           | - Abnormal position(e.g. prayer position or hunched back)                  |     |     |     |     |

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RESULTS

• The main pain score after ovariohysterectomy (control group) was 6.4±0.9 during the first 24 hours after surgery.
• No pain score was ≥ 9, therefore no supplemental analgesic was required.
• Hematoma, persistent bleeding, or diarrhea was not seen in all bitches. Only one bitch from both the DF group had vomition.
• The mean pain score in the different groups were collected in table (2).
Table (2): Mean pain score in the studied groups at different time intervals

<table>
<thead>
<tr>
<th>Time</th>
<th>Group I (Df+Ct)</th>
<th>Group II (Control)</th>
<th>Group III (CT)</th>
<th>Group IV (DF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zero Hour</td>
<td>2.33 ± 0.33a</td>
<td>3.67 ± 1.67a</td>
<td>3.67 ± 0.33a</td>
<td>3.33 ± 0.33a</td>
</tr>
<tr>
<td>1 Hour Post-operative</td>
<td>4.67 ± 0.33a</td>
<td>6.33 ± 1.33a</td>
<td>6.00 ± 2.31a</td>
<td>4.33 ± 0.33a</td>
</tr>
<tr>
<td>2 Hour Post-operative</td>
<td>2.67 ± 0.67a</td>
<td>5.33 ± 0.33b</td>
<td>8.00 ± 0.00a</td>
<td>3.00 ± 0.58a</td>
</tr>
<tr>
<td>3 Hour Post-operative</td>
<td>2.67 ± 0.67b</td>
<td>7.00± 0.58a</td>
<td>7.33 ± 1.20a</td>
<td>4.33 ± 0.67b</td>
</tr>
<tr>
<td>4 Hour Post-operative</td>
<td>2.67 ± 0.67b</td>
<td>6.67 ± 0.67a</td>
<td>7.33 ± 0.33a</td>
<td>2.00 ± 0.58b</td>
</tr>
<tr>
<td>5 Hour Post-operative</td>
<td>0.67 ± 0.67b</td>
<td>6.33 ± 0.33a</td>
<td>6.67 ± 0.33a</td>
<td>0.67 ± 0.33b</td>
</tr>
<tr>
<td>6 Hour Post-operative</td>
<td>0.67 ± 0.67b</td>
<td>7.33 ± 0.67a</td>
<td>7.00 ± 0.00a</td>
<td>0.67 ± 0.33b</td>
</tr>
<tr>
<td>8 Hour Post-operative</td>
<td>0.67 ± 0.67b</td>
<td>6.00 ± 0.58a</td>
<td>6.67 ± 0.33a</td>
<td>0.33 ± 0.33b</td>
</tr>
<tr>
<td>12 Hour Post-operative</td>
<td>1.67 ± 0.88b</td>
<td>7.00 ± 1.15a</td>
<td>6.33 ± 0.33a</td>
<td>0.67 ± 0.33b</td>
</tr>
<tr>
<td>24 Hour Post-operative</td>
<td>1.00 ± 0.58b</td>
<td>6.67 ± 0.88a</td>
<td>6.67 ± 0.33a</td>
<td>0.67 ± 0.33b</td>
</tr>
</tbody>
</table>
CONCLUSIONS

At the indicated dosage, diclofenac sodium is an excellent anti-inflammatory drug for control of postoperative pain in healthy dogs undergoing moderately painful surgery, without compromising haemostasis or severe gastrointestinal disorders.
Thank you!
Article No. (6)
RADIOGRAPHIC ASSESSMENT OF REGENERATIVE POTENTIALS FOLLOWING REVASCULARIZATION OF IMMATURE PERMANENT TEETH WITH NECROTIC PULP IN DOGS

By
Tawfik H.; Abu-Seida*, A.M.; Hashem, A.A. and Nagy, M.M.
INTRODUCTION

• Treatment of immature permanent teeth with pulp necrosis and apical pathosis constitutes a big challenge for endodontists. These conditions are commonly encountered in cases of trauma to the anterior teeth or untreated carious lesions. Such conditions present much difficulty, not only in root canal debridement and obturation, but also for the thin dentinal walls increasing the risk of subsequent fracture
INTRODUCTION

• Management of such cases was previously done by apexification procedures using calcium hydroxide

• More recently, placement of apical plugs has been advocated by many authors. MTA proved to be excellent in this aspect; however apical plugs do not solve the problem of the thin and weak dentinal root canal walls

• Periapical tissues in immature teeth are rich in blood supply and contain stem cells that have a great potential to regenerate in response to tissue injury
INTRODUCTION

• There are three key elements for tissue regeneration. First, the adult stem cells which have the ability for proliferation and differentiation. Second, the scaffolds; which are three dimensional structures that support cell organization and vascularization. Third, the growth factors which are the extracellular secreted signals governing morphogenesis.
INTRODUCTION

• Revascularization protocol depends on the regenerative capacity of periradicular tissues which acts as an endogenous source of stem cells, growth factors and fibrin blood clot as a natural scaffold

• The aim of the present investigation was to assess radiographically the regenerative potential of young permanent immature teeth with necrotic pulp following different treatment protocols namely; Orthograde apical plug using MTA, revascularization, and revascularization enhanced with growth factor
MATERIALS AND METHODS

9 Dogs

Group I
(3 Dogs)

Group II
(3 Dogs)

Group III
(3 Dogs)

Subgroup (a)
MTA apical plug

Subgroup (b)
Revascularization

Subgroup (c)
Revascularization + Injectable scaffold

Subgroup (d)
MTA over empty canal
MATERIALS AND METHODS

• Positive control subgroup (e) and negative control subgroup (f) were also done. All subgroups were represented in each dog.

• After general anesthesia, all teeth were examined radiographically to confirm incomplete root formation and to establish base line working length for further comparison. Endodontic access cavity was done in all experimental and positive control teeth.
MATERIALS AND METHODS

• Exposing the pulp chamber was done the a piece of cotton was inserted into the entrance of each canal and the access was left open for two weeks.

• After the infection period and under general anesthesia, the previously infected experimental teeth were re-entered under completely aseptic conditions. The soaked cotton was removed and canals were irrigated using 10 cc of 2.6% sodium hypochlorite and then dried using paper points.

• Injection of 1-2 cc of the prepared triple antibiotic paste into each canal was carried out until the canal was filled. The access cavity was then sealed using temporary restoration for three weeks.
MATERIALS AND METHODS

• After 3 weeks of using the triple antibiotic paste, the teeth were re-entered under the same anesthesia and aseptic conditions. The canals were irrigated using 10 cc of sodium hypochlorite 2.6% then dried and treated according to different treatment modalities as follows:

• Subgroup (a): MTA apical plug
  MTA was mixed and inserted apically into the canal. Glass Ionomer filling was used to seal the remaining part of the access cavity.
MATERIALS AND METHODS

• **Sub group (b): Revascularization by blood clot**
  Hand file size #60 was inserted past to the canal terminus until bleeding was induced to fill the canal space. Access cavity was then sealed as mentioned.

• **Subgroup (c): Revascularization by blood clot+injectable scaffold:**
  A mixture of 150 µg of basic Fibroblast Growth Factor and 300µl phosphate buffered saline was carried out to form a suspension. The suspension was dropped onto 2mg dried gelatin hydrogel. Induction of bleeding was done as described before then the prepared hydrogel was inserted into the canals. Access cavities were then sealed as mentioned.
MATERIALS AND METHODS

• Subgroup (d): MTA over empty canal:
  MTA orifice plug (2-3mm) was used to seal the empty canal orifice covered by a small wet cotton pellet. Access cavity was then sealed using glass ionomer filling.

• Radiographic evaluation:
  Periapical radiographs were taken after induction of the periapical lesion and compared with follow up radiographs taken according to each group; at one week, three weeks and three months.
MATERIALS AND METHODS

• The following criteria were assessed.
  Increase in root’s length:
  Increase in root’s thickness:
  Decrease in apical diameter:

• **Statistical analysis:**
  Data were collected, tabulated and statistically analyzed using statistical analysis software SPSS
RESULTS
Table (1): Mean and percentage of increase in root’s length (mm)

<table>
<thead>
<tr>
<th>Groups &amp; Subgroups</th>
<th>Group I</th>
<th>Group II</th>
<th>Group III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subgroup (a)</td>
<td>0%$^A_a$</td>
<td>0 ± 0(0%)$^A_a$</td>
<td>0 ± 0(0%)$^A_a$</td>
</tr>
<tr>
<td>Subgroup (b)</td>
<td>0%$^A_a$</td>
<td>1.1 ± 0.14(10.45%)$^A_a$</td>
<td>1.88 ± 0.18(17.8%)$^B_b$</td>
</tr>
<tr>
<td>Subgroup (c)</td>
<td>0%$^A_a$</td>
<td>1.06 ± 0.11(10%)$^A_a$</td>
<td>1.42 ± 0.23(14.1%)$^B_b$</td>
</tr>
<tr>
<td>Subgroup (d)</td>
<td>0%$^A_a$</td>
<td>0.5 ± 0(5%)$^A_a$</td>
<td>0.6 ± 0(6%)$^A_a$</td>
</tr>
<tr>
<td>Subgroup (e)</td>
<td>0%$^A_a$</td>
<td>0 ± 0(0%)$^A_a$</td>
<td>0 ± 0(0%)$^A_a$</td>
</tr>
<tr>
<td>Subgroup (f)</td>
<td>0%$^A_a$</td>
<td>1.26 ± 0.16(12.7%)$^{A_b}$</td>
<td>1.94 ± 0.24(19.4%)$^{B_c}$</td>
</tr>
</tbody>
</table>
Table (2): Mean and percentage of increase in root’s thickness (mm)

<table>
<thead>
<tr>
<th>Groups &amp; Subgroups</th>
<th>Group I</th>
<th>Group II</th>
<th>Group III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subgroup(a)</td>
<td>0%&lt;sup&gt;Aa&lt;/sup&gt;</td>
<td>0 ± 0 (0%)&lt;sup&gt;Aa&lt;/sup&gt;</td>
<td>0 ± 0 (0%)&lt;sup&gt;Aa&lt;/sup&gt;</td>
</tr>
<tr>
<td>Subgroup(b)</td>
<td>0%&lt;sup&gt;Aa&lt;/sup&gt;</td>
<td>0.25 ± 0.07 (8%)&lt;sup&gt;Aa&lt;/sup&gt;</td>
<td>0.36 ± 0.11 (11.1%)&lt;sup&gt;Bb&lt;/sup&gt;</td>
</tr>
<tr>
<td>Subgroup(c)</td>
<td>0%&lt;sup&gt;Aa&lt;/sup&gt;</td>
<td>0.3 ± 0.1 (9.2%)&lt;sup&gt;Aa&lt;/sup&gt;</td>
<td>0.35 ± 0.11 (14.1%)&lt;sup&gt;Bb&lt;/sup&gt;</td>
</tr>
<tr>
<td>Subgroup(d)</td>
<td>0%&lt;sup&gt;Aa&lt;/sup&gt;</td>
<td>0.3 ± 0 (10%)&lt;sup&gt;Aa&lt;/sup&gt;</td>
<td>0.3 ± 0 (10%)&lt;sup&gt;Aa&lt;/sup&gt;</td>
</tr>
<tr>
<td>Subgroup(e)</td>
<td>0%&lt;sup&gt;Aa&lt;/sup&gt;</td>
<td>0 ± 0 (0%)&lt;sup&gt;Aa&lt;/sup&gt;</td>
<td>0 ± 0 (0%)&lt;sup&gt;Aa&lt;/sup&gt;</td>
</tr>
<tr>
<td>Subgroup(f)</td>
<td>0%&lt;sup&gt;Aa&lt;/sup&gt;</td>
<td>0.39 ± 0.12 (12.2%)&lt;sup&gt;Ab&lt;/sup&gt;</td>
<td>0.55 ± 0.15 (17.6%)&lt;sup&gt;Bc&lt;/sup&gt;</td>
</tr>
</tbody>
</table>
Table (3): Mean and percentage of decrease in apical diameter (mm)

<table>
<thead>
<tr>
<th>Groups &amp; Subgroups</th>
<th>Group I</th>
<th>Group II</th>
<th>Group III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subgroup(a)</td>
<td>0 ± 0 (0%)</td>
<td>0 ± 0 (0%)</td>
<td>0 ± 0 (0%)</td>
</tr>
<tr>
<td>Subgroup(b)</td>
<td>0 ± 0 (0%)</td>
<td>0.39 ± 0.11 (6.5%)</td>
<td>0.85 ± 0.6 (29.9%)</td>
</tr>
<tr>
<td>Subgroup(c)</td>
<td>0 ± 0 (0%)</td>
<td>0.34 ± 0.09 (5.7%)</td>
<td>0.98 ± 0.6 (32%)</td>
</tr>
<tr>
<td>Subgroup(d)</td>
<td>0 ± 0 (0%)</td>
<td>0.27 ± 0.04 (4.5%)</td>
<td>0.78 ± 0.33 (10%)</td>
</tr>
<tr>
<td>Subgroup(e)</td>
<td>0 ± 0 (0%)</td>
<td>0 ± 0 (0%)</td>
<td>0 ± 0 (0%)</td>
</tr>
<tr>
<td>Subgroup(f)</td>
<td>0 ± 0 (0%)</td>
<td>0.79 ± 0.12 (13.2%)</td>
<td>1.39 ± 0.6 (46.5%)</td>
</tr>
</tbody>
</table>
Representative radiographs of subgroup (a) (MTA apical plug); preoperative (a) and one week (b), 3 weeks (c) and 3 months (d) following MTA application
Representative radiographs of subgroup (b) (Revascularization); preoperative (a) and one week (b), 3 weeks (c) and 3 months (d) postoperative
Representative radiographs of subgroup (c) (Revascularization + growth factor); preoperative (a) and one week (b), 3 weeks (c) and 3 months (d) postoperative
Representative radiographs of subgroup (d) (MTA over empty canal); preoperative (a) and one week (b), 3 weeks (c) and 3 months (d) postoperative.
Representative radiographs of subgroup (e) (positive control); preoperative (a) and one week (b), 3 weeks (c) and 3 months (d) postoperative.
Representative radiographs of subgroup (f) (Negative control); original radiograph (a) and one week (b), 3 weeks (c) and 3 months (d) later.
CONCLUSIONS

• Although both treatment protocols; MTA apical plug and revascularization were successful treatment option with regard to closure of open apices. The MTA apical plug treatment protocol didn't enhance increase in root length, thickness or diameter.

• Revascularization procedure can be considered a reliable treatment option for open apices in dogs.
Thank you!
Article No. (7)
A Comparative Study between Different Kinds of Meshes on Postoperative Adhesions in Dogs

By
A.M. Abu- Seida*, A. Ayad** MD N. Shaban* *MD, M. Elmarzouky** MD and M. Hassan** MD.
INTRODUCTION

• Different kinds of meshes are more and more frequently used in current surgical practice with a wide range of indications.

• Absorbable meshes as vicryl (polyglactin) used to prevent intestinal injury from radiotherapy, for splenorrhaphy, renorrhaphy, rectal prolapse, oesophageal hernia repair, and haemostasis.

• Non absorbable meshes as prolene (polypropylene) are preferred for repair of different abdominal wall defects.
INTRODUCTION

• Intra-abdominal adhesions are the most common cause of intestinal obstruction and implantation of non absorbable biomaterial in the intraperitoneal position add a risk factor

• Combined liquid and membrane barriers might be an effective way to decrease intra-abdominal adhesion formation in dogs
Aim of the Study

The aim of the present study was to compare the effect of different kinds of meshes on postoperative adhesions in dogs.
MATERIALS AND METHODS

12 Dogs

- Prolene mesh group (3 Dogs)
- Vicryl mesh group (3 Dogs)
- Ultrapro mesh group (3 Dogs)
- Control group (3 Dogs)
MATERIALS AND METHODS

• Middle midline Laparotomy was carried out in all animals under general anesthesia.
• A defect of 5 cm diameter was carried out in the abdominal rectal muscles.
• An intestinal loop was exteriorized and two pieces of mesh 3x3 cm were implanted into the intestinal wall of each dog and fixed by 3/0 vicryl stitches.
• The abdominal muscles defect was closed with a piece of mesh 6x6 cm according to the dog group and fixed by 0 vicryl stitches.
MATERIALS AND METHODS

• Relaparomtomies were done forty days after the mesh implantation.

• The implantation sites were exposed. Any adhesions observed between the implanted meshes and tissues were evaluated, and graded according to the adhesion scoring scale shown in table (1).

• Several specimens were taken from each dog for histological examination
# Materials and Methods

## Table 1: Adhesion score scale

<table>
<thead>
<tr>
<th>Parameter</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Adhesion area</strong></td>
<td>no</td>
<td>1-25%</td>
<td>26-50%</td>
<td>51-75%</td>
<td>76-100%</td>
</tr>
<tr>
<td><strong>Adhesion vascularisation</strong></td>
<td>no</td>
<td>yes</td>
<td>_</td>
<td>_</td>
<td>_</td>
</tr>
<tr>
<td><strong>Adhesion thickness</strong></td>
<td>no</td>
<td>&lt;5mm</td>
<td>5-10mm</td>
<td>11-15mm</td>
<td>&gt;15mm</td>
</tr>
<tr>
<td><strong>Adhesion strength</strong></td>
<td>no</td>
<td>Spontaneous separation</td>
<td>Separation by traction</td>
<td>Separation by dissection</td>
<td>_</td>
</tr>
</tbody>
</table>
MATERIALS AND METHODS

- Statistics evaluation was conducted using descriptive analysis. The unpaired Mann-Whitney U test was used to compare data from different study groups, data are expressed as mean ± SD. p<0.05 was considered significant.
RESULTS
Table (2): The degree and incidence of adhesion in the studied groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Adhesion degree</th>
<th>Incidence</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Control</em> (<em>n=3</em>)</td>
<td>1±0.7</td>
<td>33</td>
</tr>
<tr>
<td><em>Prolene mesh</em> (<em>n=3</em>)</td>
<td>8.9±0.84</td>
<td>100</td>
</tr>
<tr>
<td><em>Vicryl mesh</em> (<em>n=3</em>)</td>
<td>2.9±1.15</td>
<td>100</td>
</tr>
<tr>
<td><em>Ultrapro mesh</em> (<em>n=3</em>)</td>
<td>4.5±0.6</td>
<td>100</td>
</tr>
</tbody>
</table>
(a) Prolene mesh and marked adhesion.
(b) Ultrapro mesh on the intestine and minimal adhesions
Histological aspect of ultrapro mesh with mild inflammatory response
Conclusions

• Vicryl and ultrapro meshes can be recommended for intraperitoneal application specially during herniorrhaphy, while prolene meshes are not recommended for intraperitoneal placement, because of their high grade of adhesion formation.
Thank you !
Comparison between Surgery and Surgery Adjunctive with Immunotherapy for Treatment of Ocular Squamous Cell Carcinoma in Cattle

By

Abu-Seida, A.M.; El-Tookhy, O. and Kawkab, A. Ahmed
INTRODUCTION

• Bovine ocular squamous cell carcinoma (BOSCC) or “cancer eye” is the most common neoplasm involving the eyelids and eyeball of cattle.

• This neoplasm interferes with normal vision of cattle, hence causes serious economic losses in dairy.

• In addition, BOSCC was chosen as a therapy model for squamous cell carcinoma in the head and neck in human.

• Cancer eye is commonly seen in Herefords, Holstein-Friesian, Shorthorn, Charalais and Simmental cattle specially in females over three years old with a peak incidence during summer.
INTRODUCTION

• In Egypt, BOSCC was recorded in 1% of the total examined animals of both native (1.6%) and foreign (0.92%) breeds of cattle.

• Several causes were incriminated in the development of BOSCC including; Hereditary factors, environmental factors (e.g., exposure to sunlight), lack of eyelid pigmentation, age and dietary habits. Trauma and a number of viral agents, especially bovine papilloma virus (BPV) and bovine herpes virus types 1 and 5, have all been supposed to play a role in the etiopathogenesis of BOSCC.
INTRODUCTION

• Excisional surgery, cryosurgery, radiotherapy, hyperthermia, immunotherapy and CO₂ laser ablation were the considered alternatives for the treatment of BOSCC with various degrees of success.

• Intralesional injection of BCG either as a single injection or multiple injections was used as immunotherapy for BOSCC with cure rate ranged between 60-70%.

• The goal of this study is to compare between surgery and surgery combined with immunotherapy using BCG vaccine and Levamisol HCl as methods of treatment of BOSCC.
MATERIALS AND METHODS

• Clinical Cases:
  Fourteen clinical cases of BOSCC were reported at the surgery clinic of Faculty of Veterinary Medicine, Cairo University, Dina-Farms, El-Tobgy Farms, and private clinics at Fayoum and Giza provinces.

• All data including: case history, age, sex, breed, lesion characteristics, circumocular and corneoscleral pigmentation, clinical signs and any signs of metastasis were collected for each case.
MATERIALS AND METHODS

• Biopsy Specimens and Histopathology:
After intramuscular tranquillization with 0.1 mg xylazine HCl/kg body weight and instillation of topical eye anesthetic drops, biopsy was taken for confirmation of BOSCC in each case. The obtained specimens were prepared as usual for histological

• While awaiting biopsy results, topical treatment of the affected eyes with antibiotics eye drop and atropine sulphate eye drops was initiated every 8 hours to control the ocular infection and pain.
MATERIALS AND METHODS

• Animals grouping:
  The confirmed clinical cases of BOSCC were randomly divided into two groups:
  • Group I (7 cases) were treated only with various surgical interventions.
  • Group II (7 cases) were treated with various surgical interventions together with intra-operative local infiltration of BCG vaccine at a dose of 1 ml/1 cm of the lesion and S/C injection of levamisole HCl at a dose of 2 mg/Kg body weight for three days then stopped for three days and repeated for another three days
MATERIALS AND METHODS

• Anesthesia and Surgical Interventions:
• In both groups, the neoplastic eyes were desensitized by retrobulbar and auriculopalpebral nerve blocks using Lignocain HCl 2% sol.
• Excisional surgery was carried out for the neoplasms of the limbus, sclera, upper and lower eyelids (7 cases). Blepharectomy of the 3rd eyelid was performed in (4) cases, and extirpation of the eyeball was done in (3) invasive cases.
MATERIALS AND METHODS

• Evaluation of response:
  The treated animals were followed up for 6 months postoperative. The criteria used to evaluate the response to therapy in both groups were: (1) regression, (2) recurrence at initial site and (3) recurrence with metastasis.
RESULTS
Table (1) Data of the recorded BOSCC in fourteen animals

<table>
<thead>
<tr>
<th>Breed</th>
<th>Total No.</th>
<th>Mean Age</th>
<th>Sex</th>
<th>Location</th>
<th>No. of cases</th>
<th>Invasion</th>
<th>Metastasis to Regional Lymph Node</th>
</tr>
</thead>
<tbody>
<tr>
<td>Holestien</td>
<td>8</td>
<td>7y</td>
<td></td>
<td>3rd eyelid</td>
<td>2</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Upper eyelid</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower eyelid</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Limbus</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sclera</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friesian</td>
<td>3</td>
<td>8y</td>
<td>Females</td>
<td>3rd eyelid</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Upper eyelid</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Native</td>
<td>3</td>
<td>6y</td>
<td></td>
<td>3rd eyelid</td>
<td>1</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower eyelid</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Limbus</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table (2): The results of treatment in both animals groups

<table>
<thead>
<tr>
<th>Groups</th>
<th>Regression</th>
<th>Recurrence at the initial site</th>
<th>Recurrence with metastasis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>%</td>
<td>No</td>
</tr>
<tr>
<td>Gr. I (Surgery)</td>
<td>4</td>
<td>57.1</td>
<td>3</td>
</tr>
<tr>
<td>Gr. II (Surgery + immunotherapy)</td>
<td>6</td>
<td>85.7</td>
<td>-</td>
</tr>
</tbody>
</table>
(a) OSCC in the right nictitating membrane of an eight-year-old Friesian cow. 
(b) Pathognomonic keratin pearls of squamous cell carcinoma surrounded by inflammatory cells
(a) OSCC in the left upper eyelid of a 7-year-old Holstein cow. Neoplastic epithelial cells associated with fibroplasia (b) of the stroma and massive leucocytic cells infiltration
(a) OSCC in the left lower eyelid in a 6-year-old native cow
(b) Neoplastic epithelial cells with mitotic figures
(a) OSCC in the right nictitating membrane of an 8 year-old Friesian cow.  
(b) The same cow post blepharectomy of the nictitating membrane and local BCG injection showing conjunctivitis.
An eight-year-old Holstein cow showing recurrence of OSCC one month after exenteration of the globe
In conclusion, addition of immunotherapy to various surgical interventions of BOSCC is helpful method to improve the regression rate especially in neoplasms of the conjunctiva and eyelids particularly that of large sized.
Thank you!
Article No. (10)  
Clinicopathological Aspects of Canine Skin Neoplasms in Egypt  

By  
Abuseida, A.M.; Sherein, S.A El Gayed and Azab, A.
INTRODUCTION

• Many surveys of the prevalence, predilection sites, sex, breed and age effects on the occurrence of canine skin neoplasms, have been published. These information are scarce for the Egyptian canine population.

• In Korea, the incidence of skin neoplasms was 25% of the total canine skin biopsies (Pakhrininet al., 2007).

• In Zimbabwe, the incidence was reported as 60 % of the cases with cutaneous swellings (Mukaratirwa et al., 2005).
INTRODUCTION

• **In UK**, skin was the most common site for tumors development, with a standardized incidence rate of 1,437 per 100,000 dogs per year (*Dobson et al.*, 2002)

• **In Egypt**, fibroma, mast cell tumor and sebaceous gland adenomas representing 39.3% of the total recorded canine neoplasms (*Fahmy and Hegazy*, 1977).
INTRODUCTION

- These neoplasms were categorized into epithelial, melanocytic, mesenchymal and hematopoietic tumors located in the skin.
- Several methods were used for treatment of canine skin neoplasms including; electrochemotherapy, immunologic and genetic therapies for malignant melanomas, and radiation therapy for the treatment of squamous cell carcinoma and cutaneous melanoma.
**AIM OF THE STUDY**

- This study aimed to provide data regarding the prevalence and distribution of several types of skin neoplasm depending on the histopathological diagnosis and to investigate the likely effect of breed, sex, age and predilection sites of the dog on the developing skin neoplasms.
MATERIALS AND METHODS

• The population of cases comprised 26 dogs with cutaneous neoplasms that had been admitted to the surgery clinic at Fac. of Vet. Med., Cairo University and a private clinic at Giza Province during a one year period. Dogs with non-neoplastic cutaneous tumors or mammary neoplasms were not included in this study.

• All data of every case were recorded including breed, age and sex of the dog. Case history and clinical findings were recorded.

• All tumors were treated with surgical excision as usual under general anesthesia and the result of treatment was followed up till six months post operative. Specimens of the skin tumors were examined histopathologically.
### RESULTS

<table>
<thead>
<tr>
<th>Breed</th>
<th>Male</th>
<th>Female</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Griffon</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Rottweiler</td>
<td>2</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>German shepherd</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Dopperman</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Dalmatian</td>
<td>-</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Great Dane</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Boxer terrier</td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Chiewawa</td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Cocker Spaniel</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Golden Retriever</td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Mastiff Neapolitan</td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Mongrel</td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>15</td>
<td>11</td>
<td>26</td>
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</table>

Breeds and sexes of the examined dogs
## RESULTS

<table>
<thead>
<tr>
<th>Neoplasms</th>
<th>No</th>
<th>%</th>
<th>% of Total Neoplasms</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Epithelial Neoplasms</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Papillomas</td>
<td>9</td>
<td>82</td>
<td>34</td>
</tr>
<tr>
<td>Squamous Cell Carcinomas</td>
<td>1</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>Sebaceous Gland Adenoma</td>
<td>1</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>11</td>
<td>100</td>
<td>42%</td>
</tr>
<tr>
<td><strong>Mesenchymal Neoplasms</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lipoma</td>
<td>5</td>
<td>42</td>
<td>19</td>
</tr>
<tr>
<td>Fibroma</td>
<td>4</td>
<td>33</td>
<td>15</td>
</tr>
<tr>
<td>Fibrosarcoma</td>
<td>2</td>
<td>17</td>
<td>8</td>
</tr>
<tr>
<td>Haemangioma</td>
<td>1</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>12</td>
<td>100</td>
<td>46%</td>
</tr>
</tbody>
</table>
## Results

<table>
<thead>
<tr>
<th>Neoplasms</th>
<th>No</th>
<th>%</th>
<th>% of Total Neoplasms</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lymphohistiocytic Tumors</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Histocytoma</td>
<td>2</td>
<td>100</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>2</td>
<td>100</td>
<td>8</td>
</tr>
<tr>
<td><strong>Melanocytic Tumors</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benign Melanoma</td>
<td>1</td>
<td>100</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>1</td>
<td>100</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>26</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>

Prevalence of the recorded skin neoplasms in the examined dogs
RESULTS

<table>
<thead>
<tr>
<th>Neoplasms</th>
<th>Benign (B)</th>
<th>Malignant (M)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>%</td>
</tr>
<tr>
<td>Epithelial Tumors</td>
<td>10</td>
<td>43</td>
</tr>
<tr>
<td>Mesenchymal Tumors</td>
<td>10</td>
<td>43</td>
</tr>
<tr>
<td>Lymphohistiocytic Tumors</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>Melanocytic Tumors</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>23</td>
<td>100%</td>
</tr>
</tbody>
</table>

Benign and malignant skin neoplasms in the examined dogs
# RESULTS

<table>
<thead>
<tr>
<th></th>
<th>Epithelial Neoplasms</th>
<th>Mesenchymal Neoplasms</th>
<th>Lymphohistiocytic Neoplasms</th>
<th>Melanocytic Neoplasms</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No</strong></td>
<td><strong>%</strong></td>
<td><strong>No</strong></td>
<td><strong>%</strong></td>
<td><strong>%</strong></td>
</tr>
<tr>
<td>Head/ Neck</td>
<td>9</td>
<td>82%</td>
<td>4</td>
<td>33%</td>
</tr>
<tr>
<td>Trunk</td>
<td>-</td>
<td>-</td>
<td>8</td>
<td>67%</td>
</tr>
<tr>
<td>Limbs</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>50%</td>
</tr>
<tr>
<td>Ext. Genitalia</td>
<td>2</td>
<td>18%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>11</td>
<td><strong>100%</strong></td>
<td>12</td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

predilection sites of various skin neoplasms in the examined dogs
Cutaneous papillomas

(A) At the right ear of a 7-month-old Dopperman terrier dog.
(B) At the right periocular region in a 10-month-old Mastiff Neapolitan dog
Cutaneous papilloma

(A) Hyperplastic epidermis in which acanthosis and hyperkeratosis are observed (H&E x100).

(B) Degeneration in the St. granulosum and vaculation in the Prickle cell layer (H&E x400).
Multiple sebaceous adenomas

(A) Multiple sebaceous adenomas at the back and right elbow of a 5-year-old *Boxer terrier* dog.

(B) Sebaceous gland adenoma showing new acini of variable sizes and shapes and lined by malignant cells. A vascular connective tissue stroma containing inflammatory cells was seen (H&E x200).
Multiple lipomas

(A) At the pectoral region of a 7-year-old *Griffon* bitch.

(B) Lipoma showing large, polygonal and vaculated adult fat cells. Notice the nuclei are flattened and compressed against the cell membrane (Signet ring) (arrows), (H&E x100).
Fibrosarcoma

(A) Periocular fibrosarcoma in a five-year-old *Rottweiler* dog.

(B) Fibrosarcoma (Spindle cell type) showing mitotic activity (arrows) in spindle cells with little evidence of collagen fibers (H&E X400).
Histoyocytoma

(A) At the pectoral region in a 3-year-old Dopperman terrier dog.
(B) At the right elbow joint in a 14-year-old Chiwawa dog.
Fibrous histocytoma

(A) Densely packed sheets of tumor cells with fibrous connective tissue proliferation in between (H&E x100)

(B) Malignancy of the tumor cells in the form of pleomorphism and frequent mitotic activity (H&E x 400)
Melanoma

Perineal melanoma in a 6-year-old Mongrel dog. Notice the blackish ulcerated tumor
CONCLUSIONS

• All of the affected dogs were pure breed except one case was belong to mongrel dog.
• Twenty cases (77%) had single neoplasm and just 6 cases (23%) had multiple neoplasms.
• The recorded neoplasms were classified as; epithelial tumors ( papilloma, carcinoma & adenoma ), mesenchymal tumors ( lipoma, fibroma, fibrosarcoma & hemangioma ), lymphohistocytic tumors ( histocytoma ), and melanocytic tumors ( melanoma ) with a representative percent of 42%, 46%, 8% & 4% respectively.
• Potentially malignant neoplasms (12%) were less frequently recorded than benign neoplasms (88%).
• Head, neck and trunk were the most common predilection sites for skin neoplasms
• Surgical excision was found to be sufficient for treatment of most cases.
Thank you!