

Field Survey on Most Common Medicinal and Surgical Diseases in Police Guard and Explosive Dogs from 11/ 2007- 2/ 2010

Haithem, A. M. , Farghali¹, Wael, M. Kelany², Mahmoud Ebada³

¹ Dept. of Surgery, Anesthesiology and Radiology, Faculty of Vet. Med., Cairo University, Giza, Egypt.

² Dept. of Internal Medicine, Faculty of Vet. Med., Cairo University, Giza, Egypt.

³ Vet. Director of K9 Center, Police officers Insurance Fund, Giza, Egypt.

wael6kelany@yahoo.com

Abstract: Medicinal and surgical diseases are most common health problems in police guard and explosive dogs used for protection of organizations of high economic importance and tourism in Egypt. The present study was aimed to calculate the percentage of most common diseases and to evaluate the degree of success for routine management of these problems. The present survey was carried out on 151 dogs resulted in 1229 cases in different body systems from 11/ 2007 to 2/ 2010. These problems arranged according to percentage in descending manner as follow: pruritus (24.8%) which recorded the highest percentage followed by Ticks (16.4%), surgical wounds (9.8%), diarrhea (9.1%), otic pruritus or ear infection (8.5%), vomiting (5.2%), scrotal affections (4.2%), general weakness (3.4%), bone affections (2.6%), respiratory signs (2.4%), ear trauma or ear hematoma (2.12%), fever (2.1%), tail arrada (1.7%), alopecia without itching (1.51%), deaths and euthanasia (1.5%), muscle affections (1.4%), hemorrhage (1.1%), abscesses (0.7%), joint affections (0.5%), eye affections (0.5%), urinary signs (0.2%) and nervous signs (0.08%). Effective nursing plans were designed to minimize and control all these problems.

[Haithem, A. M., Farghali, Wael, M. Kelany, Mahmoud Ebada. **Field Survey on Most Common Medicinal and Surgical Diseases in Police Guard and Explosive Dogs from 11/ 2007- 2/ 2010**. Journal of American Science 2011;7(4):816-826]. (ISSN: 1545-1003). <http://www.americanscience.org>.

Keywords: dogs, diseases, gastroenteritis, pruritus, otic, respiratory, lameness, scrotal, wounds, urinary, nervous

1. Introduction

Police working dogs' utility and longevity are presumably affected by diseases common to the specific sizes, breeds and functions of these dogs, as well as by procurement standards. Although diseases that affect these dogs have been identified in previous studies in military dogs (Moore et al., 2001), advances in veterinary diagnostic and therapeutic capabilities should correlate with advancing quantity and quality of life for these valuable dogs. Determination of those diseases that shorten a working dog's service life would ideally allow the implementation of preventive medicine and management practices to improve longevity. These police dogs trained for guarding and for detection of explosives in important hotels, hypermarkets; and private and governmental organizations; and international conferences.

There was also zoonotic aspect of some skin affections to human as sarcoptic mange, ringworm and resistant staphylococci which were easily transmissible to contact human (Van Duijkeren et al., 2004).

The most popular signs of gastroenteritis were vomiting and diarrhea which caused by numerous etiologies. Gastroenteritis caused by dietary indiscretion, organophosphorus poisoning, irritable bowel syndrome, hepatobiliary diseases, renal diseases, Canine distemper virus, Corona virus,

Parvo virus, colibacillosis, salmonellosis, campylobacteriosis, Clostridium perfringens, Entameba histolytica, Blantidium spp., Giardia spp. (Leib and Monroe, 1997).

Respiratory manifestations were commonly seen in groups of dogs as military working dogs (Moore et al., 2001). Predisposing factors played an important role in upper and lower respiratory tract infections as over-crowdness, unhygienic kennels, traveling and over- exertion. Many etiologies incriminated in respiratory diseases as Adeno virus, Canine distemper virus, Mycoplasma spp., Bordetella bronchiseptica (Leib and Monroe, 1997).

Fibrotic Myopathy is a chronic, progressive disorder of severe muscle contracture and fibrosis. The exact cause is usually unknown. Fibrotic myopathy may result from acute trauma, chronic repetitive trauma, autoimmune disease, drug reactions, infections, neurogenic disorders, and vascular abnormalities. Ischemia secondary to trauma may also lead to fibrosis. Severely damaged muscle undergoes necrosis followed by fibrosis and contracture. Histologically, muscle is replaced by dense, collagenous connective tissue (Trout, 2008).

Osteoarthritis (i.e., DJD) is a syndrome of pathologic changes in diarthrodial or synovial joints accompanied by signs of pain and disability. It develops secondary to trauma, or from application of normal forces on abnormal joints, such as with hip

dysplasia or cranial cruciate ligament disease. Other less common causes include sepsis, prolonged joint immobilization, inflammatory joint disease, or developmental diseases (e.g., OCD) after Trout (2008).

The Causes of conjunctivitis may be infectious agents (Bacteria and other organisms like Gram-positive bacteria: *Staphylococcus* spp., *Bacillus* spp., *Corynebacterium* spp., viruses like canine distemper: nonspecific conjunctivitis during acute disease or parasites like *Thelazia* spp., *Cuterebra* spp., *Dirofilaria* spp. Larvae and systemic infections like *Blastomyces dermatitidis*, *Histoplasma capsulatum* or *Borrelia burgdorferi*). Immune-mediated disorders like atopy, type I hypersensitivity, cell-mediated inflammation or irritative conditions (drying of tissue from exposure or KCS, abnormal hairs: distichia, ectopic cilia, entropion, or trichiasis rubbing on the conjunctival surface, environmental irritants: chemicals, smoke, dust, foreign bodies, trauma or conditions accompanying other ocular diseases: uveitis, episcleritis, glaucoma, or corneal ulceration (Larocca, 2000 and Ring, 2008).

Bacterial UTIs are commonly associated with other primary abnormalities that increase the bladder's susceptibility to infection such as recessed vulva (the vulva is partially hidden by overhanging skin and is not readily visible, this leads to a warm, moist environment for bacteria to grow and ascend to the bladder), urinary cystoliths, bladder catheterization, urinary incontinence, with wicking of bacteria through the urethra from decreased midurethral pressure, diseases that decrease urine specific gravity (hyperadrenocorticism, chronic renal failure, diabetes mellitus, diabetes insipidus) and anatomical abnormalities of the bladder and ureters (urachal diverticulum, ectopic ureter, patent urachus, urachal cyst and detrusor areflexia and hyporeflexia or other neurological abnormalities of the bladder) as reported by Langston (2008).

Nervous signs as convulsions were rare condition in canine practice as it was mostly occurred in unvaccinated puppy in Canine distemper virus, traumatic affections as fractures of skull or spinal cord, epilepsy and spondylosis (Leib and Monroe, 1997).

The most serious and cause of rapid deaths was Gastric dilatation-volvulus. Gastric dilatation-volvulus (GDV) is an acute, life-threatening condition in dogs (one of the most common causes of death in working dogs) characterized by rapid accumulation of gas in the stomach, malposition of the stomach, increased intra-gastric pressure, and circulatory shock. Gastric dilatation is an acute over distension of the stomach with gas, fluid, or ingesta. Gastric volvulus is rotation of the stomach around its

long axis in a clockwise direction (when viewed from the ventro-dorsal perspective), which obstructs outflow of the duodenum and esophagus and compromises the blood supply to the stomach and spleen and subsequent splenomegally (Moore, 2008).

The target of the present field survey was to record the incidence of common medicinal and surgical diseases affecting police working dogs. The purposes of the present study reported here were to determine cause-specific morbidity and mortality rates and causes of death or reasons for euthanasia in these dogs. Also the present investigation was aimed to identify any apparent breed predispositions and to determine the most important causes of diseases and to identify potential interventions that could reduce the incidence of these recorded diseases.

2. Materials and Methods:

A total number of 151 guard and explosive dogs in K9 police center- police officers insurance fund were thoroughly examined; and age, breed and sex were recorded in table 1. Medical history of previous treatments and routine health care, such as deworming and vaccination programs was recorded. All investigated dogs were vaccinated and received Drontal® plus (50 mg praziquantel, 150 mg Febantel, 144 mg pyrantel- Embonat, made in Germany by Bayer) as internal worm prophylaxis. Clinical examination was performed by inspection and recording of different clinical signs and physical examination was also performed (Leib and Monroee, 1997).

Skin scrapings performed for all examined dogs manifested dermatological lesions as mentioned by Leib and Monroee (1997). Fecal concentration floatation was performed to exclude nematodes and cestodes as described by Thiopont et al. (1986). Hypoallergenic (Elimination) dietary trial was performed to identify an adverse reaction to food as directed by Leib and Monroee (1997).

X-ray and ultrasonographic examinations were performed in department of Surgery, Anesthesiology and Radiology, Faculty of Vet. Med., Cairo University, Giza, Egypt. Seven dogs underwent chest radiography, they were not sedated; and a ventro-dorsal and a right lateral view were performed according to Kirschvink et al, 2006. Ultrasonography was performed to 10 dogs after 24 hrs fasting. The examined dogs were positioned in dorsal recumbency. Cranial ventral abdomen were clipped and sheaved then covered with coupling gel. Transverse and longitudinal scans were taken using Toshiba Scanner (Japan) with alternating frequency convex transducer of 5.0-7.5 MHz according to the method described by Nyland et al., (1989).

Table (1): Total numbers, breed and specialties of the police working dogs under the survey in K9 center.

Specialty \ Breed	German shepherd			Malino			Labrador			Golden retriever			Rottweiler			Total Number		
			Total			Total			Total			Total			Total			Total
Explosives	64	5	69	9	4	13	8	3	11	2	2	4	2	1	3	86	15	100
Guards	3	-	3	1	-	1	-	-	-	-	-	-	-	-	-	3	1	4
Breeding	-	3	3	-	2	2	-	2	2	-	1	1	1	3	4	1	11	12
Prepared	9	1	10	-	1	1	-	-	-	-	-	-	-	-	-	9	2	11
Newly entered	23	1	24	-	-	-	-	-	-	-	-	-	-	-	-	23	1	24
Total	99	10	109	10	7	17	8	5	13	2	3	5	3	4	7	122	30	151

A national questionnaire-based study was conducted to identify the incidence of common diseases, and circumstances of trauma affecting

police working dogs in a period between November 2007 and February 2010. All recorded data collected in the designed table (2).

Table (2): The most common affections and numbers of affected dogs and their breeds in the period between 11/2007 and 2/2010:

Breeds	Skin					GIT		Respiratory	Musculoskeletal			Eye	Ear		General			Tail	Scrotal affections	Urinary	Nervous	Dead & euthanasia	Total			
	Wound	Abscess	Pruritus	Alopecia	Ticks	Vomiting	Diarrhea		Muscle	Bone	Joint		Infection	Trauma	Weakness	Hemorrhage	Fever									
German shepherd																										
Malino																										
Rottweiler																										
Golden Retriever																										
Labrador Retriever																										
Total																										

3. Results

The results recorded in table 3. Skin affections (654 out of 1229-53.21%) recorded the highest proportion in police working dogs (Fig I 2 , 3, 4 and 5). The manifestations and affections of skin consisted of pruritus (305 out of 1229- 24.8%), ticks (201 out of 1229- 16.4%), wounds (121 out of 1229- 9.8%, Fig. I, 7), alopecia (19 out of 1229- 1.54%) and abscesses (8 out of 1229- 0.7%). Wounds represented 9.8% in the present survey which revealed that incised form (46 out of 121- 38%) recorded the higher incidence among the cases affected with wounds followed by ulcerating (24 out of 121- 19.8%), granulating (17 out of 121- 14%), lacerated (14 out of 121- 11.7%), contusions (8 out of 121- 6.6%), abrasion (7 out of 121- 5.8%), then penetrating (5 out of 121- 4.1%) while abscesses were represented by 0.7%. Alopecia attributed to infestation by internal worms (4 cases of Dipyliidium caninum (Fig. II-2 & 3), 5 cases of Toxocara canis in

puppies (Fig. II-1), one case of Toxascaris leonina in puppies) detected during fecal examination, 5 emaciated cases with malnutrition without other detectable causes and 2 cases of ringworm. Gastroenteritis (177 out of 1229- 14.3%) represented the second common problem in police working dogs which manifested by vomiting (64 out of 1229- 5.2%) and diarrhea (113 out of 1229- 9.1%, Fig. I-1). Clinical examination revealed hypermotility (increased peristaltic movements or borborygmal sounds). Respiratory manifestations (29 out of 1229- 2.4%) were the third problem. Respiratory problems consisted of upper respiratory tract infections (22 out of 29- 76%) and lower respiratory tract infections (7 out of 29- 24%). Upper respiratory tract infections manifested by sneezing, serous to mucoid nasal discharge, inspiratory dyspnea, moist coughing and ocular discharge while lower respiratory tract infections marked by mucopurulent nasal discharge, progressive coughing, expiratory dyspnea (with

severely extended head and neck) and systemic reaction (anorexia, lethargy and fever). Respiratory problems were commonly occurred in cold season in winter (27 out of 29- 93%) and the rest of cases in spring (2 out of 29- 7%). Musculoskeletal affections (36 out of 1229- 4.5%) showed lameness and recumbency (3 cases). These cases showed affections in muscle, bone and joints. There were 10 cases suffering from muscle affections. The main affection of the muscle was chronic fibrotic myopathy (8 cases) which occurred as complication to deep wounds (5 cases), chronic debilitating diseases (2 cases) and deep abscess (one case). Bacterial myositis was recorded in 2 cases as secondary to punctured wounds. Dogs suffering from bone affections were 22 cases. Fracture was recorded in 9 cases, varied between metacarpal fracture (4cases), femoral fracture (3 cases) and metatarsal fracture (2 cases). Panostitis was reported in 8 cases. These dogs were aged between six to nine months (offspring of the k-9 center). Osteomyelitis (bone infection) was recorded in 5 dogs as complication to deep wounds. Four dogs were recorded with joint affections. Three of them showed DJD and one case showed sprain (Fig. IV, 5). Eye affections (6 out of 1229- 0.5%) manifested mainly by ocular discharge. Ear affections (132 out of 1229- 10.62%) consisted from ear infections characterized by otic pruritus and purulent ear discharge and ear trauma or aural hematoma (Fig. I- 8) manifested by swelling of ear pinna. General conditions (82 out of 1229- 6.6%) constituted of general weakness with emaciation (43 out of 1229- 3.4%), high fever (26 out of 1229- 2.1%) ranged from 39.8 to 41.3°C and hemorrhage (13 out of 1229- 1.1%). Tail affections (21 out of 1229- 1.7%) displayed signs of pyoderma in 6 cases and tail arrada in 15 cases. Scrotal affections (52 out of 1229- 4.2%, Fig.I- 9) showed thickening of scrotal skin and

purulent exudates with very offensive odor. Urinary problems (2 out of 1229- 0.2%) consisted of case of nephrosis and case of cystitis in female detected by palpation. Nervous signs (1 out of 1229- 0.08%) displayed chorea and respiratory signs in a preparatory puppy.

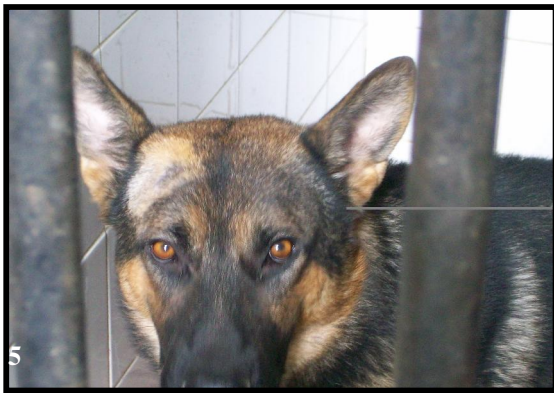
Skin scraping revealed one case of Demodex and 3 cases of Sarcoptes spp.. Fecal examination detected macroscopically and microscopically 4 cases of Dipylidium caninum , 5 cases of Toxocara canis in puppies, one case of Toxascaris leonina. Hypoallergenic diet trial detected 8 cases of food allergy. X-ray confirmed cases of pneumonia and also detected their types as diffuse interstitial pneumonia (one case, Fig. IV- 2), lobar pneumonia (2 cases, Fig. IV- 3), or lobular pneumonia (4 cases, Fig. IV- 4). Also radiography detected one case of severe gastric dilatation prior to death (Fig. I- 6 & Fig. IV- 1). Ultrasonography diagnosed one case of chronic nephritis & chronic hepatitis (Fig. II-1), 7 cases of chronic hepatitis in dogs manifested diarrhea and vomiting (Fig. II-2), one case of hepatic cirrhosis (Fig. II-3) and one case of cystitis.

1-3.8 Ys old German shepherd dog suffered from profuse watery diarrhea and lethargy. 2-7 months old German shepherd puppy displayed fleas and alopecia in ventral abdomen. 3- 8.4 Ys old German shepherd showed alopecia and excoriations on back (food allergy). 4- 4.9 Ys old German shepherd manifested by redness, patchy alopecia and crusts around nostrils (Demodicosis detected microscopically). 5-3.2 Ys old German shepherd dog suffered from patchy alopecia and crust (pyoderma). 6-Gross postmortum findings of 5.3 Ys old German shepherd dog displayed gastric dilatation and splenomegally (Gastric dilatation- volvulus).

Table (3): The most common affections and numbers of affected dogs and their breeds in the period between 11/2007 and 2/2010:

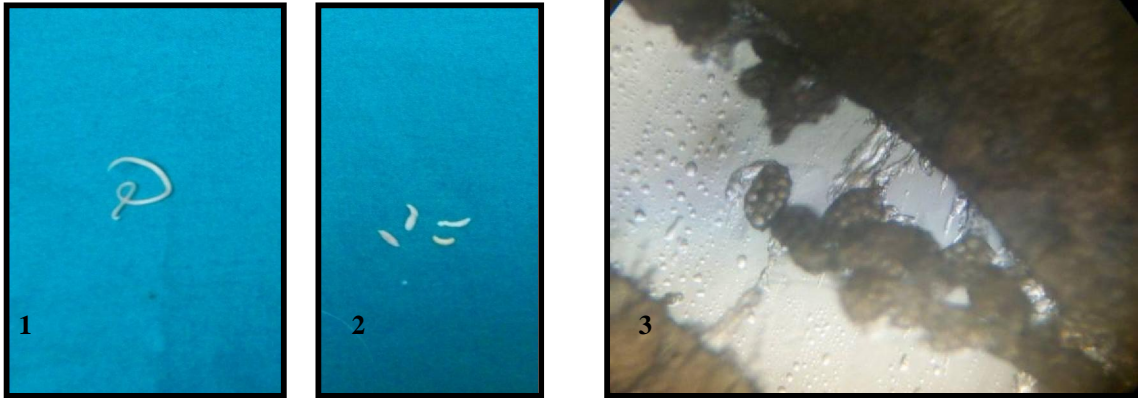
Breeds	Skin					GIT		Respiratory	Musculo-skeletal			Eye	Ear		General			Tail	Scrotal affections	Urinary	Nervous	Deaths & euthanasia	Total
	Wounds	Abscess	Pruritus	Alopecia	Ticks	Vomiting	Diarrhea		Muscle	Bone	Joint		Infection	Trauma	Weakness	Hemorrhage	Fever						
German shepherd	61	3	181	7	78	39	81	18	10	22	4	4	71	14	25	10	11	9	27	2	1	11	689
Malino	18	0	31	2	21	8	4	3	5	6	0	2	10	7	2	0	2	12	12	0	0	1	146
Rotweiler	7	0	26	1	17	2	7	1	0	2	0	0	4	1	6	1	4	0	2	0	0	1	82
Golden Retriever	5	0	24	1	23	4	8	2	2	0	0	0	6	1	1	0	3	0	1	0	0	2	83
Labrador Retriever	30	5	43	8	62	11	13	5	0	2	2	0	14	4	9	2	6	0	10	0	0	3	229
Total	121	8	305	19	201	64	113	29	17	32	6	6	105	27	43	13	26	21	52	2	1	18	1229
Percentage (%)	9.8	0.7	24.8	1.54	16.4	5.2	9.1	2.4	1.4	2.6	0.5	0.5	8.5	2.12	3.4	1.1	2.1	1.7	4.2	0.2	0.08	1.5	

Figures (I): Different working dogs suffered from most common diseases:



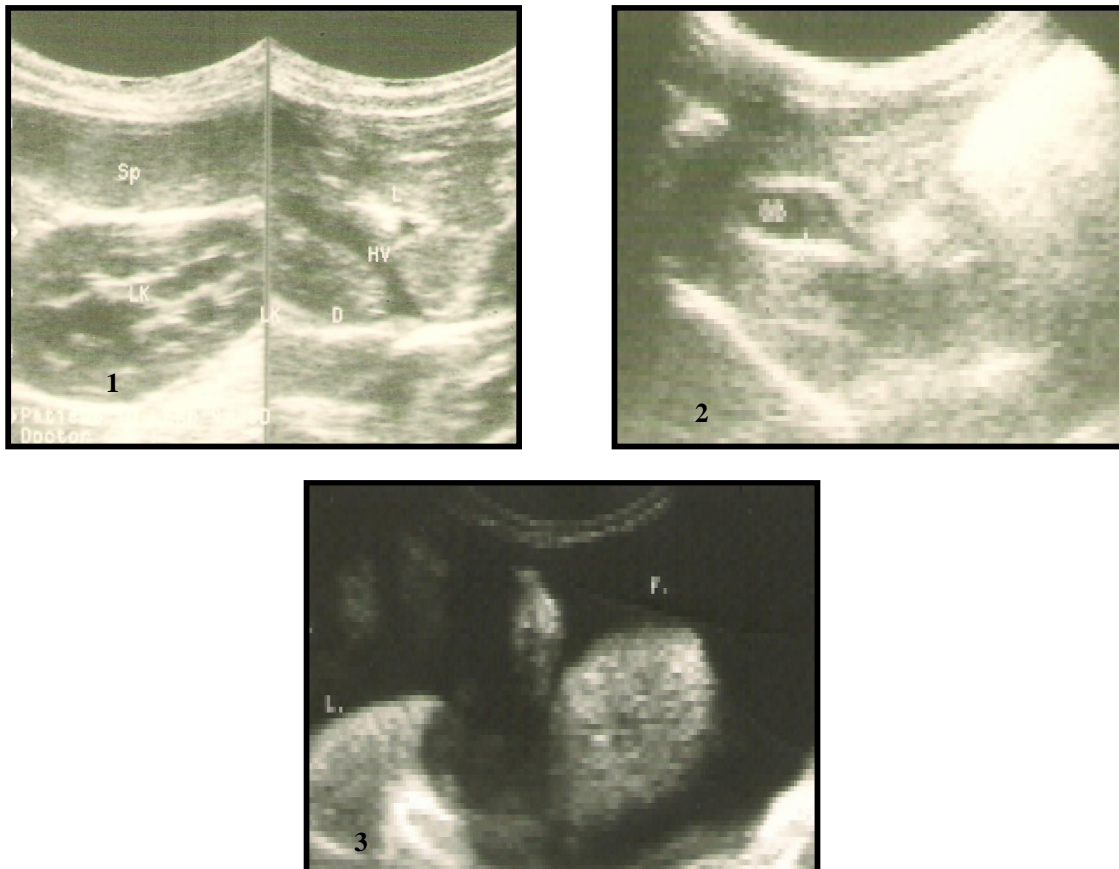
7-Ys old Labrador retriever dog showed external wound in the face under the eye. 8-7.8 Ys old German shepherd dog showed dropped right ear (ear hematoma). 9-4.2 Ys old German shepherd dog displayed thickened inflamed scrotal skin.

***Figures (II): Results of fecal examination:**



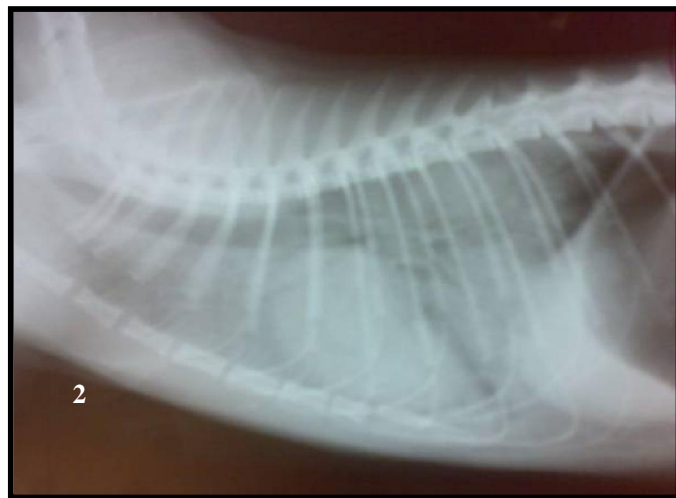
1-Gross fecal examination revealed adult worm of *Toxocara canis* in 9 weeks German shepherd puppy. 2-Gross fecal examination displayed *Dipylidium caninum* gravid segments in 4.7 Ys old German shepherd dog. 3- Microscopical examination of fecal sample in the same German shepherd dog of fig. (II-2) revealed *Dipylidium caninum* egg nest (10X).

Figures (III): Ultrasonographic findings:



1-Sagittal double B-scan of liver, left kidney and spleen in 7.9 Ys old German shepherd dog showed the parenchyma of the liver and renal cortex was little bit more echoic than spleen with disclearance of echogenic portal vein walls (chronic nephritis and chronic hepatitis). 2-Hepatic scan of 6.3 Ys old German shepherd bitch revealed marked increase in echogenicity with absence of echogenic walls of portal veins and increased echo-density of gall bladder wall (increased thickness) in chronic hepatitis. 3-Hepatic scan of 8.2 Ys old German shepherd dog revealed marked increase in echogenicity, clear sublobes of the liver and ascetic fluid (hepatic cirrhosis).

***Figures (IV): Radiographic findings:**



1-Lateral radiograph of 6.9 Ys old German shepherd dog suffering of gastric dilatation and volvulus showed severe distention of the stomach and aerophagia. 2-Lateral radiograph of the thorax of 3.5 Ys old Labrador retriever bitch suffering of pneumonia showed diffused radio-opaque patches of the cranial, middle and caudal lobes of the lung

(diffused interstitial pneumonia). 3-Ventro-dorsal radiograph of the thorax of 5.6 Ys old German shepherd suffering of pneumonia showed diffused radio-opaque patches of the cranial and middle lobes of the lung (lobar pneumonia). 4-Lateral radiograph of the thorax of 2.8 Ys old German shepherd suffering of pneumonia showed focal radio-opaque patches of the middle lobes of the lung (lobular pneumonia). 5- X-ray of 7.5 Ys German shepherd dog suffered from osteoarthritis (DJD).

4. Discussion

The zoonotic importance of diseases of dogs and the high value and price of these well trained dogs under our field investigation ensured thorough research work-up of each individual problem to perform a strategic plan to decrease incidence of these diseases and to save life of these valuable dogs.

Skin affections (654 out of 1229-53.21%) constituted the highest proportion in police working dogs. The manifestations and affections of skin consisted of pruritus (305 out of 1229- 16.4%), Ticks (201 out of 1229- 16.4%), wounds (121 out of 1229- 9.8%), alopecia (19 out of 1229- 1.54%) and abscesses (8 out of 1229- 0.7%). Pruritus recorded the highest percentage in our field survey. It attributed to numerous etiologies as allergic conditions (flea allergic dermatitis, atopy, food allergy and contact allergic dermatitis), pyoderma (surface, superficial and deep pyoderma), sarcoptic and demodectic mange. Food allergy detected and managed by hypoallergenic diet (8 cases). Ticks recorded an increased incidence during summer, autumn and spring (193 out of 201- 96%) but recorded very low incidence in winter (8 out of 201- 4%). It was recommended to use alternative methods as ultrasonic apparatus which used to repel ticks and weekly dipping of dogs by different acaricidal solutions and firing of walls. Faires et al. (2010) recorded that Methicillin resistance (MR) in recurrent pyoderma is an increasingly important problem in staphylococci and choice of suitable antibacterial to combat it, needs further investigations. Wounds represented 9.8% in the present survey which revealed that incised form (46 out of 121- 38%) recorded the higher incidence among the cases affected with wounds followed by ulcerating (24 out of 121- 19.8%), granulating (17 out of 121- 14%), lacerated (14 out of 121- 11.7%), contusions (8 out of 121- 6.6%), abrasion (7 out of 121- 5.8%), then penetrating (5 out of 121- 4.1%) while abscesses were represented by 0.7%. The low % of the some recorded cases surgical wounds was attributed to the ill developed signs of these forms of wounds, so they did not get attention of the dog trainer (Boden, 2005). The higher incidence of the traumatic injuries among working dogs may be due to the heavy duty and efforts which faced by those dogs. The results from the present study revealed that incised form (38 %) recorded the higher incidence among the cases affected with wounds which may be due to trauma

during transportation of the dogs from the kennel to the site of work. Alopecia in the present survey attributed to infestation by internal worms (4 cases of *Dipylidium caninum*, 5 cases of *Toxocara canis* in puppies, one case of *Toxascaris leonina* in puppies) detected during fecal examination, 5 emaciated cases with malnutrition without other detectable causes and 2 cases of ringworm which detected during skin scraping. Internal worms as a cause of alopecia were of very low % as the effective control measures by the use of broad spectrum anthelmintic Drontal® every 3 months (Leib and Monroee, 1997).

Gastroenteritis (177 out of 1229- 14.3%) represented the second common problem in police working dogs which manifested by vomiting (64 out of 1229- 5.2%) and diarrhea (113 out of 1229- 9.1%). Perhaps the greatest single cause of diarrhea is a change of diet. Thus, a dog that has been used to eating a commercial brand dog food and is suddenly given table scrapes is very likely to suffer diarrhea. It was detected and solved by the use of hypoallergenic diet within 6- 8 weeks in our work-up (94 cases) which was detected the offending commercial dry food. Abrupt changes in diet are particularly distressing to puppies whose intestinal tracts are still very sensitive. Summer is also the season of another serious source of diarrhea – spoiled food. Our investigation recommended being cautious of moist food that becomes moldy. Dietary therapeutic management was instituted taking into account all these consideration. The general protocol was as follows. Other causes of vomiting and diarrhea were detected by other investigations as ultrasonography which detected 7 cases of chronic hepatitis and one case of hepatic cirrhosis. Treatment was generally begun with a 24-48 hour fast (Leib and Monroe, 1997 and Cave et al., 2009). The rest of cases was diagnosed as undifferentiated cases of gastroenteritis and responded in a good manner to symptomatic treatment.

Respiratory manifestations (29 out of 1229- 2.4%) were the third problem. Respiratory problems consisted of upper respiratory tract infections (22 out of 29- 76%) and lower respiratory tract infections (7 out of 29- 24%) which confirmed by radiography. Upper respiratory tract infections manifested by sneezing, serous to mucoid nasal discharge, inspiratory dyspnea, moist coughing and ocular discharge while lower respiratory tract infections marked mucopurulent nasal discharge, progressive

coughing, expiratory dyspnea (with severely extended head and neck). Respiratory problems were commonly occurred in cold season in winter (27 out of 29- 93%) and the rest of cases in spring (2 out of 29- 7%). This recorded incidence of respiratory diseases in cold season as dogs exposed to faulty system of working. This faulty system planned to work the dogs an hour outside the hotels and hypermarkets then kept indoor for rest an hour and released suddenly again outdoor to chilly and sometimes rainy environment and so on. These factors predisposed the working dogs to infection attributed to destruction of the respiratory clearance mechanisms. These predisposing factors also reported by Leib and Monroe (1997) and Eldredge (2007).

Musculoskeletal affections (36 out of 1229- 4.5%) showed lameness and recumbency in 3 cases. The causes may attributed to myositis or degenerative joint diseases or bone affections. Bacterial Myositis may be focal myositis arised from direct infection of traumatized and devitalized muscle and often associated with contamination of a wound or may result from injection of bacteria into muscle (bite wounds). Myositis may develop from hematogenous infections also as reported by Trout (2008). Osteoarthritis (i.e., DJD) is a syndrome of pathologic changes in diarthrodial or synovial joints accompanied by signs of pain and disability. It developed secondary to trauma, or from application of normal forces on abnormal joints, such as with hip dysplasia or cranial cruciate ligament disease. Other less common causes include sepsis, prolonged joint immobilization, inflammatory joint disease, or developmental diseases (e.g., OCD) after Trout (2008).

Eye affections (6 out of 1229- 0.5%) manifested mainly by ocular discharge. Pannus keratitis may be the principal cause which characterized by infiltration of the cornea with lymphocytes, plasma cells, neutrophils, melanocytes, and granulation tissue. It was also known as *chronic superficial keratitis* or *Ueberreiter's syndrome* (Ring, 2008). Atypical pannus, or plasmoma, is a variation of pannus involving the third eyelid, thought to be immunemediated. Breed predisposition was German shepherd dog (primarily) and other herding dogs: Golden retriever and Rottweiler (Moore, 1999). Superficial erosion also may be the second common cause which is a loss of the corneal epithelium only while stromal ulceration (Corneal Ulceration) involved loss of both the epithelium and some portion of stroma (with a descemetocoele, stroma is lost down to Descemet's membrane or perforation in which there is a wound in Descemet's membrane, with leakage of aqueous humor and/or iris prolapsed

(Ring, 2008). The main cause was trauma (External sources: cat scratch, foreign body, or eyelid disease: distichiasis, ectopic cilia, entropion. The other causes are tear film disease like Keratoconjunctivitis sicca (KCS), Goblet cell deficiency or Lipid tear film abnormality from meibomian gland pathology (Moore, 1999). Also Exophthalmos (pathologic or conformational) and decreased blink frequency (It may occur from corneal denervation after trigeminal nerve injury or Brachycephalic dogs have relatively few corneal nerves and often an incomplete blink) may be involved. Other causes of corneal ulcer are infections: bacterial (Tolar et al., 2006), fungal: aspergillosis (Marlar et al., 1994) or viral: FHV, thermal or chemical burns, immune-mediated disease: marginal keratitis and secondary to other corneal disease like calcium infiltrates, edema (especially bullous keratopathy) or corneal epithelial basement membrane disorder.

Ear affections (132 out of 1229- 10.62%) consisted from ear infections characterized by otic pruritus and purulent ear discharge and ear trauma or aural hematoma manifested by swelling of ear pinna. This agreed with Gotthelf (2005) who said that aural hematoma is uncommon findings in chronic skin diseases and many dogs affected with aural hematoma did not have signs of any concurrent auricular, cutaneous or systemic disease.

General conditions (82 out of 1229- 6.6%) constituted of general weakness with emaciation (43 out of 1229- 3.4%), high fever (26 out of 1229- 2.1%) ranged from 39.8 to 41.3°C and hemorrhage (13 out of 1229- 1.1%). General weakness or overexertion was attributed to long time of working hours which may reached in some explosive German shepherd to over 12 hours. High fever attributed to numerous etiologies but some cases previously infested by ticks may resulted from infection by *Ehrlichia* or *Babesia* which need further investigations. Cases of hemorrhage mostly attributed to trauma or fights. These findings also recorded by Leib and Monroe (1997) and Eldrege (2007).

Tail affections (21 out of 1229- 1.7%) displayed signs of pyoderma in 6 cases and tail arrada in 15 cases. It need a massive medicinal therapeutic approach in cases of pyoderma and surgical intervention in cases of tail arrada. Weekly cleaning and rinsing resulted in obvious decrease in % of these problems as recorded by Fossum et al. (2002).

Scrotal affections (52 out of 1229- 4.2%) showed thickening of scrotal skin purulent exudates with very offensive odor. Weekly cleaning and rinsing and wide space resulted in a marked decrease in incidence of these affections as recorded by Fossum et al. (2002).

Urinary problems (2 out of 1229- 0.2%) consisted of case of chronic nephritis and case of cystitis in bitch. They were attributed to one case of chronic nephritis and the other case of cystitis which were detected by ultrasonography. These cases advised to be treated massively to prevent the further chronic renal failure (Freitag et al., 2006).

Nervous signs (1 out of 1229- 0.08%) displayed chorea and respiratory signs in a preparatory puppy. Unvaccinated preparatory puppy was attributed as it matched with signs recorded by Leib and Monroe (1997)

Death and euthanasia were recorded in 18 cases. Nine cases died (four cases were suffering from gastric dilatation and volvulus, three were suffering from senility and two cases suffering from heart attack diagnosed by auscultation of heart murmurs antemortum). Nine dogs were euthanized, 6 cases showed chronic osteoarthritis (DJD), 2 cases suffering from general weakness and one case suffering from chronic hepatitis.. The first cause was GDV (gastric dilatation volvulus) in 4 cases. The true cause of GDV is unknown and overall prevalence in the general dog population is low. Middle-aged to older, large- and giant-breed, deep-chested dogs are at greatest risk; however, GDV has also been reported in small breeds (e.g., dachshund, basset hound, pug) and the cat (rare) (Moore, 2008). A combination of environmental, anatomical, physiological, and pathologic risk factors include (Rasmussen, 2003; Glickman et al., 2000) increased risk in large- and giant-breed dogs, dogs with a first-degree relative with a history of GDV, large, thoracic, depth-to-width ratio (deep-chested), lean body condition, age, behaviors that promote aerophagia, eating from a raised food bowl, stress and nervous temperament, feeding a large volume of food per meal (Raghavan et al., 2004), feeding of dry foods containing a fat or oil in the first four listed ingredients (Raghavan et al., 2006) and pyloric outflow obstruction. One case was confirmed with plain x-ray film. These cases died within 12 hours and reported as dead cases. Postmortem examination confirmed the diagnosis as it showed rotation of the stomach around its long axis in a clockwise direction and congestion of the spleen. The causes of GDV were unclear and overall prevalence in the dog population was low which agree with Moore (2008). All cases were recorded in male German shepherd dogs with age between three to six years which parallel to findings of Moore (2008)

Cave et al. (2009) recorded in a survey of diseases of working farm dogs in New Zealand that trauma was identified as a cause of injury in 848 (38%) visits. Huntaways dogs were apparently over-represented in cases of constipation, gastric

dilatation-volvulus (GDV), theriogenological problems, laryngitis, hip dysplasia, and degenerative lumbosacral disease. In contrast, Heading dogs were over-represented among cases of multiple ligamentous injury of the stifle, disruption of the gastrocnemius or Achilles tendon, tarsal injuries, and hip luxation. Traumatic injury involved injury by stock (20%), automotive incidents (19%), transit across fence lines (16%), and dog bites (12%). Loss occurred following 10% of visits, of which trauma was known to be involved in 32%. The most important non-traumatic causes of loss were GDV, degenerative joint disease, mammary neoplasia and diseases involving the female reproductive tract, cardiac disease, and poisoning

Our field investigation was concluded that there were 21 recorded signs in different body systems and deaths. These problems arranged according to percentage in descending manner as follow: pruritus (24.8%) which recorded the highest percentage followed by Ticks (16.4%), surgical wounds (9.8%), diarrhea (9.1%), otic pruritus (8.5%), vomiting (5.2%), scrotal affections (4.2%), general weakness (3.4%), bone affections (2.6%), respiratory signs (2.4%), ear swellings or ear hematoma (2.12%), fever (2.1%), tail arrada (1.7%), alopecia without itching (1.51%), deaths (1.5%), muscle affections (1.4%), hemorrhage (1.1%), abscesses (0.7%), joint affections (0.5%), eye affections (0.5%), urinary signs (0.2%), nervous signs (0.08%).

5. Conclusion

Medicinal and surgical diseases in guard and explosive dogs are common health problems. The present survey was succeeded to direct the efforts to control serious and common diseases which affect life of these valuable dogs and health of human. It was recommended to make an strategic plan to each individual problem and also to do every effort by further thorough investigations to compate unsolved problems. Kennels, transmitting vehicles if repaired and fights if prevented; surgical wounds, ear hematoma, otitis externa, musculoskeletal affections and eye affections will be minimized. Wide space in transmitting vehicles and hygienic kennels were advised to reduce percentage of scrotal affections. It was advised further thorough investigation in skin affections as huge percentage to select an effective therapeutic plan.

References

1. Boden, E. (2005). Wounds. Black's Veterinary Dictionary Textbook. 21st edition, A and C Black Publishers Limited. 38 Soho Square, London W1D 3HB.

2. Cave, N.J.; Bridges, J.P.; Cogger, N. and Farman, R.S. (2009). A survey of diseases of working farm dogs in New Zealand. *N Z Vet J.* 2009 Dec; 57 (6):305-12.
3. Eldredge, D.M.; Carlson, L.D.; Carlson, D.G. and Giffin, J.M. (2007). *Dog Owner's Home Veterinary Handbook* (4th Edition). Copyright © 2007 by Howell Book House. All rights reserved. *Published by Wiley Publishing, Inc., Hoboken, New Jersey.*
4. Faires; Meredith, C.; Michelle Traverse; Kathy, C.; Tater; David, L.; Pearl and J. Scott Weese (2010). "Methicillin-Resistant and -Susceptible *Staphylococcus aureus* Infections in Dogs." *Emerging Infectious Disease Journal*; 16,1.
5. Fossum, T.W.; Hedlund, C.S.; Hulse, D.A.; et al. (2002). *Small animal surgery*, 2nd edn. St Louis, MO: Mosby.
6. Freitag, T.; Squires, R.A. and Schmid, J. et al. (2006). Antibiotic sensitivity profiles do not reliably distinguish relapsing or persisting infections from reinfections in cats with chronic renal failure and multiple diagnoses of *Escherichia coli* urinary tract infection. *J Vet Intern Med.* 20: 245,
7. Glickman, L.T.; Glickman, N.W.; Schellenberg, D.B. et al. (2000). Non-dietary risk factors for gastric dilatation-volvulus in large and giant breed dogs. *J Am Vet Med Assoc* 217:1492.
8. Gotthelf, L.N. (2005). *Small animal ear diseases: an illustrated guide*, second edition, ISBN 0-7216-0137-5. Elsevier Inc.
9. Kirschvink N., Leemans j., Delvaux F., Snaps F., Jaspert S., Evrard B., Delattre L., Cambier C., Clercx C. and Gustin, P. (2006). Inhaled fluticasone reduces bronchial responsiveness and airway inflammation in cats with mild chronic bronchitis. *Journal of Feline Medicine and Surgery*, 8, 45-54.
10. Langston, C.E. (2008). *Urinary system: Handbook of small animal practice* (Fifth Edition). Copyright © 2008, 2003, 1997, 1992, 1988 by Saunders, an imprint of Elsevier Inc. ISBN: 978-1-4160-3949-5. Pp. 526-539.
11. Larocca, R.D. (2000). Eosinophilic conjunctivitis, herpesvirus and mast cell tumor of the third eyelid in a cat. *Vet Ophthalmol* 3:221.
12. Leib, M.E. and Monroe W.E. (1997). *Textbook of Practical Small Animal Internal Medicine* (1st ed.). Copyright by W.B. Saunders Company, printed in the united States of America.
13. Marljar, A.B.; Miller, P.E., Canton, D.D. et al (1994). Canine keratomycosis: a report of eight cases and literature review. *J Am Anim Hosp Assoc* 30:331.
14. Moore, C.P. (1999). Diseases and surgery of the lacrimal secretory system. In Gelatt KN (ed): *Veterinary Ophthalmology*. 3rd Ed. Lippincott Williams & Wilkins, Philadelphia. Pp. 583.
15. Moore, G.E.; Burkman, K.D; Carter, M.N. and Peterson, M.R. (2001). Causes of death or reasons for euthanasia in military working dogs: 927 cases (1993-1996). *JAVMA*, Vol 219, No. 2, July 15, 2001, Pp. 209-214.
16. Moore, L.E. (2008). *Digestive system: Handbook of small animal practice* (Fifth Edition). Copyright © 2008, 2003, 1997, 1992, 1988 by Saunders, an imprint of Elsevier Inc. ISBN: 978-1-4160-3949-5. Pp. 350-356.
17. Nyland, T.G.; Hager, D.A. and Herring, D.S. (1989). Sonography of the liver, gall bladder and spleen. *Seminars in Veterinary Medicine and Surgery (Small Animal)*; 4, 13-31.
18. Raghavan, M.; Glickman, N. and McCabe, G. et al (2004). Diet-related risk factors for gastric dilatation-volvulus in dogs of high-risk breeds. *J Am Anim Hosp Assoc* 40,192.
19. Raghavan, N.; Glickman, N.W. and Glickman, J.T. (2006). The effect of ingredients in dry dog foods on the risk of gastric dilatation-volvulus in dogs. *J Am Anim Hosp Assoc* 42:28.
20. Rasmussen, L. (2003). Stomach, In Slatter, D. (ed): *Textbook of Small Animal Surgery*. 3rd Ed. *WB Saunders, Philadelphia*. Pp. 592.
21. Ring, R.D. (2008). *Diseases of the eye: Handbook of small animal practice* (Fifth Edition). Copyright © 2008, 2003, 1997, 1992, 1988 by Saunders, an imprint of Elsevier Inc. ISBN: 978-1-4160-3949-5. Pp. 915-967.
22. Thiopont, D.; Rochette, F.; Vanparijs, O.F.J. (1986). Fecal floatation concentration, direct method. *Diagnosing Helminthiasis by coprological examination second edition textbook*, 32-34.
23. Tolar, E.L.; Hendrix, D.V.H.; Rohrbach, B.W. et al (2006). Evaluation of clinical characteristics and bacterial isolates in dogs with bacterial keratitis: 97 cases (1993-2003). *J Am Vet Med Assoc* 228, 80.
24. Trout N.J. (2008). *Musculoskeletal system: Handbook of small animal practice* (Fifth Edition). Copyright © 2008, 2003, 1997, 1992, 1988 by Saunders, an imprint of Elsevier Inc. ISBN: 978-1-4160-3949-5. Pp. 763-777.
25. Van Duijkeren, E.; Wolfhagen, M.J.H.M.; Box, A.T.A.; et al. (2004). Human-to-dog transmission of methicillin-resistant *Staphylococcus aureus*. *Emerg. Infect. Dis.*; 10: 2235.

4/5/2011