

## The Prevalence of Some Affections That Required Surgical and Obstetrical Interferences in Ruminants in Kalubya Governorate

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### ABSTRACT

This study was carried out on 1765 clinical cases, and fully monitored for surgical, obstetrical and conservative interventions. Out of 1765, 627 animals (35.53 %) has been exposed to conservative treatment, while 1138 cases have been exposed to surgical (786 cases; 44.53 %) or obstetrical (352 cases; 19.94 %) interventions. All our collected cases admitted from different localities of Kalubya governorate. The surgical affections (n=786) were grouped on the bases of affected region or system into 5 main categories: external swellings (n=443), musculoskeletal affections (n=122), urinary tract affections (n=81), foreign body syndrome (n=27), and miscellenice or other affections (n=113). The other obstetrical affections (n=352) were uterine torsion (n=12), uterine prolapse (n=155), vaginal prolapse (n=13), abnormal attitude fetus (=172). The incidence of surgical and obstetrical affections was studied in relation to species, age and sex. Besides, both surgical and obstetrical affections were managed using conservative and or surgical techniques. The obtained results revealed that the prevalence of surgical and obstetrical affections is affected by species, age, and sex; respectively. Besides, the success rate of all managed cases was about 95 %. In conclusion, this study proved that the prevalence of different affections that required surgical and obstetrical interferences in ruminant animals are affected by species, age, and sex of animals. Besides, the surgical and obstetrical interferences gave encouraging results.

**Keywords;** *Obstetrical affections, Ruminants, Surgical affections, Success rate, Prevalence*

### 1. INTRODUCTION

In Egypt, ruminants mostly include cattle, buffaloes, sheep, and goats and these animals are economically important as a source of meat, milk, and hide (Hale et al., 2005). Most of ruminants' disorders are treated medicinally, while few percentages need surgical and obstetrical interventions. However, the importance of surgery is to save, prolong the life of an animal, and to hasten recovery from an injury (Sarker et al., 2014). In general, surgical affections in ruminants such as TRP, fractures, abscess, Patellar luxation and hernia cause substantial loss to the farmers (Hossain et al., 1986). Besides, it decreases the animal performance (Sarker et al., 2014). Surgical

disorders are serious abnormal condition in animals and may cause fatality if not treated in time (Sarker et al., 2014). Various violence and accidents hinder growth, performance and in turn decrease the economic value of affected animals (Hossain et al., 1986). Urolithiasis, for example, can cause significant economic losses due to urethral obstruction, causing rupture of the urethra or bladder or death of animal (Misk et al., 2013). Some minor affections such as teat affections can be predisposing factor to mastitis, by adversely affecting defenses and speeding the process of infection and making it more severe (Mavrogianni et al. 2006). On the other hand, affections that required obstetrical interferences such as uterine torsion, uterine

prolapse and dystocia usually lead to economic loss, and finally reflected on the economic value of the ruminant animals if not treated in time. Hence, better knowledge on different affections that required surgical and obstetrical interferences in ruminant animals are found to be highly needed (Mahdy, 1998). However, a few works on surgical affections in ruminants are done in Egypt (Awad *et al.*, 2008). Importantly, studying different factors that contributed with the incidence of surgical and obstetrical interferences such as the species, age, and sex of the animals (Haque and Samad, 1997; Samad, 2001) is highly motivated and urgently important. Therefore, this study was designed to record the prevalence of the most common surgical and obstetrical affections in ruminants in El-Kalubia Governorate As well as to determine the effect of species, sex, and age on the incidence of surgical and obstetrical affections as well as the success rate of all managed cases.

## 2. MATERIAL AND METHODS

### 2.1. Animals of this study

This study was carried out on 1765 animals of different species, sex and age at different localities in Kalubia governorate, Egypt during the period from March 2013 until January 2019. All animals were brought to different Governmental Veterinary Hospitals at Kalubia governorate with the complaints of surgical or obstetrical conditions.

### 2.2. Design and Methodology of this study

The animals with surgical diseases were classified on the basis on species, sex and age. All animals in this study were subjected to thorough clinical examination to pick up those suffering from surgical or obstetrical affections and each case was fully filled in an examination sheet a sin page. After that, conservative and /or surgical or obstetrical interference were applied in all cases according to the nature of the affection and the permission of the animal's owner, and prognosis of the case (Awad *et al.*, 2008). Medical approaches have been done for some cases include using of antibiotics, anti-inflammatory, local applications of some ointment or betadine. However, surgical treatment had been performed in other cases as the primary treatment or in some cases where the medical interference fails to recover the case. For surgical interference, Preparation and

anaesthetization of the affected area or organ have been performed firstly by using the adequate program of anesthesia. The animal should be adequately restrained, I/M injection of light tranquilizer if necessary, such as Xylazine (0.1-0.17)/kg BW (ADWIA Pharmaceutical Co.). In some cases, local infiltration analgesia of Lidocaine Hydrochloride (Lidocaine Hydrochloride; Al-Debeiky pharma.) 2 % was infiltrated into subcutaneous tissue and muscular layers. In some obstetrical interference such as uterine prolapse and caesarian sections, posterior analgesia was performed.

### 2.3. Preoperative technique

All metal instruments such as, forceps, scalpels, scissors, artery forceps, needle, and needle holders, and retractors were sterilized in hot air oven at 180 °C for 20 minutes. Surgical towels and tampon were sterilized by autoclaving. The area of the skin at the operation site of the affected animals was clipped, shaved, washed, and disinfected with 10 % povidone iodine.

### 2.4. Post-operative care

Systemic antibiotic was given intramuscularly for 5 successive days. Skin stiches were removed 7-10 days following the operation. Follow up the success rate of all managed cases was performed by visiting the cases.

### 2.5. Data analysis

The data were checked manually for inconsistencies, recording errors or missing information. All cases that were not fully monitored during the study or incomplete data were excluded from the analysis. All statistical analyses were processed with SPSS version 16, in which, percentages of surgical and obstetrical affections in different species, sex, and age of animals were calculated as proposed by Awad *et al.*, (2008), and Samir *et al.* (2016). The results were considered significant at the P value less than 0.05 levels. In this vein, the effect of each factor such as species, age, and sex on the prevalence of surgical and obstetrical interferences was studied using univariate analysis. To study the influence of the age of animals on the prevalence (%) of surgical and obstetrical interferences, animals within each species were subdivided into few days to 1 year, 1-3 years, and over 3 years aged animals. Moreover, for sex effect, animals were subdivided into either males or females. The

statistical significance between percentages of surgical and obstetrical affections was performed by nonparametric tests (chi square).

### 3. RESULTS

Out Of 1765 ruminant animals, 627 animals (35.53%) have been conservatively treated while 1138 animals (64.47%) have been exposed to surgical and obstetrical interventions. The observed cases are fully described in (Table 1, 2) for surgical and obstetrical (Table 3) interference. In the current study, obstetrical cases that required surgical handling were 352 cases (19.94 %), while surgical affections that required surgical handling were 786 cases (44.53 %) of the total cases that admitted during this study. After handling of these cases, success rate was about 95 % in this study.

#### 3.1. The surgical interferences

Distribution of surgical affections among large ruminant animals in relation to the method of management and the success rate was fully described in (Table 1, 2). According to the affected region or system, it was divided into external swelling (hematoma, abscess, hernia, papilloma, cyst, and bursitis), musculoskeletal affections (patellar luxation, and fracture), foreign body syndrome (choking, and TRP), urinary tract affections (urolithiasis), and other affections (atresia ani, horn fracture, tail necrosis, and gangrenous mastitis).

Cases of abscess were common recorded in sheep and goats compared that in cattle and buffaloes. On opposite, umbilical abscess were common recorded in calves in this study. On the other hand, high incidence of capped elbow was recorded in this study in buffaloes (57/72) due to bad bedding management. Conservative treatment covered about 50 % of affected cases as early as possible. Otherwise, surgical interferences were urgently needed. Concerning hernia, high incidence of congenital and acquired hernia were recorded in this study and the technique of commercial plastic tie (CPT) for closing the hernial ring was highly effective and give good successful results. From observations of the present study, the total cases of hernia, which managed surgically, were 77 (48 umbilical hernia and 29 abdominal hernias). The most affected animals were cattle (40 cases), buffaloes (20), goats (10), and sheep (7). In addition, the affected

males were 46 while the females were 31 cases. The hernia contents were the small intestine and omentum. In this perspective, animal affected with congenital hernias were 17 cases, while the acquired hernias were 60 cases. For musculoskeletal affection, patellar luxation that recorded in this study was found in buffaloes only Medial patellar desmotomy by using the tentome and local infiltration anesthesia gave high successful results.

On the other hand, most cases of the foreign body in the esophagus that admitted to this study were treated using stomach tube and some medicaments such as muscle relaxants (Finadin, inj.), and some purgative to lubricate the stomach tube before its intromission. However, only one case was treated by surgical interference. In this study, high incidence of foreign body in rumen that required rumenotomy was recorded in goats. Most cases of urethral calculi that reported in this study were in male sheep and goats (35/45).

Atresia ani was the most common congenital surgical affections in the studied species admitted to the clinics 1-3 days after birth. Delaying interferences resulted in bad prognosis. Concerning horn fractures, it is important to stop bleeding immediately after fracture handling using cauterization which considered the most effective method especially in cattle and buffaloes. In this study, tail affections that required surgical handling were rare while the topical application of counter irritant gave good results as a conservative treatment. Few cases of mastectomy were recorded in the current study for treatment of gangrenous mastitis (only 3 cases). Two cases were in goats.

#### 3.2. The obstetrical interferences

Regarding the obstetrical interferences, it was found that cases of uterine torsion (n =50) were mostly treated in cows and buffaloes by rolling of the animal at the same site of the torsion after casting it on the same site of torsion. In some cases, Plank in flank technique was used before rolling if the torsion is precervical. Rolling of the animal as a treatment of uterine torsion in large animals gave fair successful rate results (26/48), while the cases of uterine torsion in sheep and goats (10) were treated by CS (success rate =8/10). Dystocial cases that represented feto-pelvic disproportions and or abnormal attitude fetus (abnormal presentation,

position and posture) that admitted during this study were 623 cases. Correction and pulling of the fetus were performed to 451 cases (mostly in cattle and buffaloes; success rate=320/451), while inducing CS to relief the dystocia cases were performed on 172 cases (mostly in sheep and goats) with high success rate (160/172).

In the current study, total cases of vaginal and uterine prolapse were 168 cases. Most common animals exposed to uterine prolapse were sheep (70) and goats (50) compared to cattle (15) and buffaloes (20). The early interference through epidural anesthesia, washing of the prolapsed part and reposition it by fist of the hand followed by closure of vulvar lips gave high success rate (13/15 in cows, 18/20 in buffaloes, 65/70 in sheep, and 45/50 in goats). On contrary, vaginal prolapse that recorded during the period of this study were only in cattle and buffaloes with high success rate.

### 3.3. Factors affecting on prevalence of surgical and obstetrical interferences

Regarding the effect of species (Table 4), high incidences ( $P < 0.05$ ) of the affections that required surgical or obstetrical or both interventions were recorded in sheep and goats compared to that recorded in cows and buffaloes. It was observed that surgical and obstetrical affections were 163/1138 (14.32%) in Cows, 202/1138 (17.75 %) in buffaloes, 416/1138 (36.55%) in sheep, and 357/1138 (31.37%) in goats.

Moreover, the effect of age (Table 5) that studied in the current study revealed a high significant ( $P \leq 0.05$ ) incidence of surgical affections in all animals aged few days to 1 year (477/786; 60.69 %), than animals of 1.3 year (183/786; 23.41 %) and of over 3 years aged animals (125/786; 15.90 %). Similar findings were found also within each species (Table 5). In addition, surgical and obstetrical affections were performed on 750 females (65.90 %) ruminants compared with 388 males (34.10 %) ruminants. However, in surgical affections only, the ratio was 398 females: 388 males ( $P > 0.05$ ) (Table 6). The effect of sex of animal on the prevalence of affections that required surgical interferences was significant obvious in cows (856 M: 53 F) and buffaloes (44 M: 125 F) compared to sheep and goats that showed non-significant effect (Table 6).

## 4. DISCUSSION

This study is important because it presented many types of congenital and acquired surgical and obstetrical affections which affect the performance of ruminant animals. Also, it aimed to detect the prevalence of surgical and obstetrical affections in ruminant animals with special references to their treatment either by surgical or conservative interferences.

The most common surgical affections of this study were atresia ani, umbilical abscess, hernias, capped elbow, foreign body in rumen, urethral calculi, patellar luxation, horn fractures, foreign body in oesophagus, tail affections, gangrenous udder, skin papilloma, cyst, hematoma, and metacarpal fractures. While, the obstetrical affections reported in this study were vaginal prolapse, uterine prolapse, uterine torsion, abnormal attitude of the fetus that required caesarean section.

A high percentage of success was recorded for treating of abscess that commonly found in sheep and goats compared with that in cattle and buffaloes. The high percentage of abscess in large animals was found in early age till 6 month as umbilical abscess which need some counter irritant as a local treatment and proved to be the suitable method for treatment, plus systemic injection of broad-spectrum antibiotics. The same results are obtained by Oehme and Prier, 1974, and Islam *et al.*, (2016).

Hernias that observed in our study may be due to congenital or acquired cause and may be associated with defects of the other parts of the body systems. Congenital hernias that observed in our study were umbilical hernia. These finding were in agreement with that was mentioned by Dennis *et al* (1968). In the present study, radical operation was performed to correct the umbilical hernia in affected animals by performing an incision through the skin, reducing the hernia contents, and freshening the hernia edges of the hernia ring and suturing it by CPT technique, then suturing the skin. These results agreed with that mentioned by other studies (Gadallh 2009).

In the present results, the operation for umbilical hernia was easier in female calves than in male ones, in which, the preputial orifice was near to the operation site, and hernial ring sometimes extend inside the prepuce. So, we did V-Shape incision under the site of prepuce for performing this operation.

These findings agreed with that mentioned by Dennis et al (1968), and Gadallah (1995).

**Table 1.** Distribution of surgical affections among large ruminant animals in relation to method of management and the success rate

Species	Category	Affections	no	Management		Method of Management		Success rate	
				Cons.	Surg.	Conservative	Surgical	Cons.	Surg.
Cows	External swelling	Abdominal hematoma	8	-	8	-	Incision	-	8
		Umbilical abscess	40	-	40	-	Incision	-	40
		Gluteal abscess	10	-	10	-	Incision	-	10
		Umbilical hernia	30	-	30	-	Herniorrhaphy by CPT	-	30
		Lateral abdominal hernia	10	-	10	-	By CPT	-	10
		Skin papilloma	5	3	2	Topical counter irritant	Excision	3	2
		Wattle cyst	1	-	1	-	Excision	-	1
		Presternal bursitis	15	15	-	Intra bursal injection of corticosteroids	-	10	-
	Musculoskeletal affections	Metacarpal fracture	6	-	6	-	External fixation by gypsona	-	6
	Foreign body syndrome	Choking	21	20	1	Stomach tube	Oesophagostomy	20	1
		TRP	7	5	2	Rumen magnet	Rumenotomy	3	2
	Urinary tract affections	Urolithiasis	60	60	-	Muscle relaxant	-	40	-
	Other affections	Gangrenous udder	1	-	1	-	Mastectomy	-	0
		Tail necrosis	5	3	2	Topical counter irritant	Tail amputation	3	2
		Horn fracture	10	-	10	-	(C.H+AB+A.T.) +Bandage	-	9
		Atresia ani	15	-	15	-	Artificial opening	-	15

CPT: Commercial Plastic ties; C.H: Chemical Haemostasis; A.B: Antibiotic; A.T.S :Anti Tetanic Serum

**Table 2.** Distribution of surgical affections among large ruminant animals in relation to method of management and the success rate

Species	Category	Affections	no	Management		Method of Management		Success rate	
				Cons.	Surg.	Conservative	Surgical	Cons.	Surg.
Buffalo	External swelling	Umbilical abscess	32	-	32	-	Incision	-	32
		Submandibular abscess	8	-	8	-	Incision	-	8
		Umbilical hernia	23	-	18	-	By CPT	-	18
		Lateral abdominal hernia	2	-	2	-	By CPT	-	2
		Presternal bursitis	55	55	-	Local application of Iodine ointment	-	35	-
		Capped elbow	2	-	2	-	Excision	-	2
	Musculoskeletal affections	Metacarpal fracture	6	-	6	-	External fixation by gypsona	-	6
		Patellar luxation	70	-	70	-	Medial patellar desmotomy	-	66
	Foreign body syndrome	Choking	20	20	-	Stomach tube	-	17	-
		TRP	15	12	3	Magnet swallowing	Rumenotomy	12	3
	Urinary tract affections	Urolithiasis	10	10	2	Muscle relaxant +Diuretics	Urethrotomy	7	1
	Other affections	Teat obstruction	20	20	-	Teat syphon	-	17	-
		Tail necrosis	22	20	2	Counter irritant	Tail amputation	18	2
		Horn fracture	9	-	9	-	(C.H+AB+A.T.S)+Bandage	-	9
		Atresia ani	16	-	16	-	Artificial opening	-	14

**Table 3:** Distribution of surgical affections among small ruminant animals in relation to method of management and the success rate

Species	Category	Affections	No.	Management		Method of Management		Success rate	
				Cons.	Surg.	Cons.	Surg.	Cons.	Surg.
Sheep	External swelling	Casious lymphadenitis	170	-	170	-	By incision	-	170
		Lateral abdominal hernia	7	-	7	-	By CPT	-	7
		Skin papilloma	2	-	2	-	By excision	-	2
	Musculoskeletal affections	Metacarpal fracture	20	-	20	-	By external fixation using gypsona	-	20
	Foreign body syndrome	TRP	1	-	1	-	By rumenotomy	-	1
	Urinary tract affections	Urolithiasis	35	-	35	-	By snipping of urethral process	-	30
	Other affections	Horn fracture	11	-	11	-	(C.H+AB+A.T.S)+Bandage	-	11
		Atresia ani	14	-	14	-	By artificial anal opening	-	13
Goats	External swelling	Casious lymphadenitis	90	-	90	-	By incision	-	90
		Lateral abdominal hernia	10	-	10	-	By CPT	-	10
		Wattle cyst	1	-	1	-	By excision	-	1
	Musculoskeletal affections	Metacarpal fracture	20	-	20	-	By external fixation using Gypsona	-	20
	Foreign body syndrome	TRP	20	-	20	-	By rumenotomy	-	18
	Urinary tract affections	Urolithiasis	45	-	45	-	By snipping of urethral process	-	40
	Other affections	Gangrenous udder	2	-	2	-	By mastectomy	-	2
		Horn fracture	15	-	15	-	(C.H+AB+A.T.S)+Bandage	-	15
		Atresia ani	15	-	15	-	By artificial anal opening	-	14

**Table 4.** Distribution of obstetrical affections among ruminant animals in relation to method of management and the success rate

Species	Affections	no	Management		Method of Management		Success rate	
			Cons.	Surg.	Conservative	Surgical	Cons.	Surg.
Cow	Uterine torsion	21	20	1	By rolling	By C.S	12	1
	Uterine prolapse	15	-	15	-	By Reposition and closing of vulva	-	13
	Vaginal prolapse	3	-	3	-	By Reposition and closing of vulva	-	3
	Abnormal foetal attitude	100	95	5	By correction	By C.S	65	4
Buffalo	Uterine torsion	29	28	1	By rolling	C.S	14	0
	Uterine prolapse	20	-	20	-	By Reposition and closing of vulva	-	18
	Vaginal prolapse	10	-	10	-	By Reposition and closing of vulva	-	10
	Abnormal foetal attitude	123	121	2	By correction	By C.S	98	1
Sheep	Uterine torsion	6	-	6	-	By C.S	-	5
	Uterine prolapse	70	-	70	-	By Reposition and closing of vulva	-	65
	Abnormal foetal attitude	140	60	80	By correction	By C.S	45	75
Goats	Uterine torsion	4	-	4	-	By C.S	-	3
	Uterine prolapse	50	-	50	-	By Reposition and closing of vulva	-	45
	Abnormal foetal attitude	165	80	85	By correction	By C.S	65	80

C.S: Caesarian Section

**Table 5.** Effect of species on surgical and obstetrical interferences

species	No of obstetrical cases	%	No of surgical cases	%	No of Surgical and obstetrical cases	%
<b>Cows</b>	24 <sup>a</sup>	6.82	139 <sup>a</sup>	17.69	163 <sup>a</sup>	14.32
<b>Buffaloes</b>	33 <sup>a</sup>	9.38	169 <sup>a</sup>	21.50	202 <sup>a</sup>	17.75
<b>Sheep</b>	156 <sup>b</sup>	44.32	260 <sup>b</sup>	33.08	416 <sup>b</sup>	36.56
<b>Goats</b>	139 <sup>b</sup>	39.49	218 <sup>b</sup>	27.74	357 <sup>b</sup>	31.37
<b>Total</b>	352	100 %	786	100 %	1138	100

Values with different lower case (a, b) superscripts indicate significance at least at P less than 0.05 within each column.

**Table 6:** Effect of age of animal on the prevalence of affections that required surgical and obstetrical interferences

Species	Surgical affections			Obstetrical affections			
	Age	Days-1year	1-3 years	Over 3 years	Days-1year	1-3 years	Over 3 years
<b>Cows</b>		96 <sup>a</sup>	33 <sup>b</sup>	10 <sup>c</sup>	-	5 <sup>a</sup>	18 <sup>b</sup>
<b>Buffaloes</b>		74 <sup>a</sup>	20 <sup>b</sup>	75 <sup>a</sup>	-	1 <sup>a</sup>	32 <sup>b</sup>
<b>Sheep</b>		180 <sup>a</sup>	51 <sup>b</sup>	29 <sup>b</sup>	-	128 <sup>a</sup>	28 <sup>b</sup>
<b>Goats</b>		127 <sup>a</sup>	80 <sup>b</sup>	11 <sup>c</sup>	-	108 <sup>a</sup>	32 <sup>b</sup>
<b>Total</b>		477 <sup>a</sup>	184 <sup>b</sup>	125 <sup>b</sup>	-	242 <sup>a</sup>	110 <sup>b</sup>

Values with different lower case (a, b) superscripts indicate significance at least at P less than 0.05 within each species for either surgical or obstetrical interferences.



**Table 7:** Effect of sex of animal on the prevalence of affections that required surgical interferences

Species	males	females
<b>Cows</b>	86 <sup>a</sup>	53 <sup>b</sup>
<b>Buffaloes</b>	44 <sup>a</sup>	125 <sup>b</sup>
<b>Sheep</b>	135 <sup>a</sup>	125 <sup>a</sup>
<b>Goats</b>	123 <sup>a</sup>	95 <sup>a</sup>
<b>Total</b>	388 <sup>a</sup>	399 <sup>a</sup>

Values with different lower case (a, b) superscripts indicate significance at least at P less than 0.05 within each species for either surgical interferences only.

To operate ventral abdominal hernias following traumas, it is advisable to wait until the inflammatory reaction disappears; otherwise recurrence is liable to occur and interfere with the healing (Dennis et al 1968, Weaver, 1968). Interestingly, we used the commercial polyester fabric and tie method (CPT) that possesses most of the characters. Mesh herniorrhaphy is important in veterinary practice for treatment of hernia, in terms of durability, pliability, resistance to infection, induction of rapid fibroplasia and biocompatibility with adjacent tissue. Moreover, its cost is nil in comparison with other prosthetic materials. Therefore, it is strongly recommended to be used by veterinary surgeons to manage hernias with extraordinary defects in animal (Gadallah 2009).

In this study, presternal bursitis was recorded and was commonly in buffaloes calves (55 cases) compared with that in cattle (15 cases). The causes are mainly due to continuous traumatization of the site of presternal region with the hard or bad bedding management. The involvement of congenital causes may be possible (Oehme and Prier, 1974). Local treatment of cystic form of bursitis was successfully and gave high success rate in the present study. In those cases, treatment was performed by aspiration of cystic fluids and intracystic injection of corticosteroids. Also, surgical removal of the fibrous form of bursitis proved to be the suitable method for treatment under the effect of local infiltration anaesthesia if the conservative treatment fails. These results were consistently with that discussed by Oehme and Prier (1974).

Patellar luxation was recorded in this study in buffaloes only and may be attributed to hereditary factors and vigorous behavior of buffaloes. Medial patellar desmotomy by using tentome and local infiltration anaesthesia gave high successful results and commonly practiced

to relieve the animal suffering this problem, but the procedure is not free from mishaps e.g., delayed recovery, sepsis and incomplete severing of the medial patellar ligament. Further, daily dressing, antibiotic injections and veterinarian's visits incur considerable expenditures (Turner and McIlwraith, 1982, Dhillon *et al.*, 2009). Most cases of fractures admitted in this study were metacarpal and metatarsal fractures in ruminant animals and were healed using external fixation using gypsona which gave high success rate due to early interventions (Anderson and St Jean 1996).

Oesophageal obstruction was most common in cows and buffaloes in the current study and these findings may be due to the nature of Egyptian field. Egyptian farmers give plenty of potato as a feed to cows and buffaloes. Using of stomach tube to push this foreign body to the rumen is commonly successful practice (Diego *et al.*, 2014). Regarding rumenotomy, in this study, it was found a high incidence of foreign body in rumen that required rumenotomy in goats than buffaloes and cattle and sheep. It might be attributed to the bad grazing system of goat's flocks in Egypt.

In this investigation, animals suffered from urolithiasis revealed a history of urine retention, and that animals were reared for fattening and kept on high grain rations such as horse bean and corn and bran mixtures for a long period before the occurrence of the urine retention. These results were consistent with that observed by Misk *et al.* (2013). It is riveting to record here that all cases suffering from such affection were males because of the nature of the urethral process (Oehme and Prier, 1974, Adamu *et al.*, 1991, Misk *et al.* (2013). Atresia ani was the most common anomaly in calves and lambs that found in the current study, in which, symptoms observed were absence of anal opening, bulging of the anal

area accompanied by tenesmus few days after birth. Surgical creation of anal opening was found optimum in cases of atresia ani, and a circular piece of skin was removed at usual location of the anus, and the mucous membrane was then sutured to the cut edges of the skin (Noden and Lahunta 1985).

Concerning horn fractures, it is important to stop bleeding during surgical removal of horns using cauterization which considered the most effective method especially in cattle and buffaloes (Mistry JN 2009).

Coincidentally with Nouh (1991), the present result revealed that the incidence of mammary gland affections that required surgical affections is high in goats compared to other animals. The anatomical characteristics of goats mammary gland is predisposing to such affections. These finding agree with those of Nouh (1991) and Awad *et al.* (2008). The incidence of mastitis that required medicinal treatment is significantly high compared with that need surgical treatment. The neglected cases especially in goats resulted in gangrenous mastitis. Results of this work revealed that, early diagnosis and correction of pendulous udder were essential (Awad *et al.* 2008). In this vein, Youssef (1999) recorded that total mastectomy is easier than the partial because in term of control of hemorrhage needs more effort in the latter, wound closure and union in the former is easier, faster and best cosmetic. On the other hand, the other half of udder regained its full functional capacity and the animals gained weight in a relatively short period after partial mastectomy. Similar results were found by Nouh (1991), Youssef (1999), Awad *et al.* (2008), and Islam *et al.*, (2016).

Regarding obstetrical interferences, our findings revealed that vaginal and uterine prolapse were recorded in the preparturient period, last weeks of gestation or during parturition as a consequent complication to dystocia or few days after parturition. This fact agree to great deal with that reported by Jackson, (2004). Most common cases were reported in buffaloes then cattle then sheep and goats.

Results of previous work showed that Buhner's technique was efficient and preferred than the other techniques in order to give a good control for closure of the vulvar lips (Jackson, 2004; Hanie, 2006). Urine retention with distended

urinary bladder was recorded in complicated cases of post-parturient vaginal prolapse. Similar findings recorded by (Hanie, 2006). Concerning caesarean section, the present work showed that caesarean section is the solution for the irrepressible dystocia. Our study revealed a high percentage of success after performing of C.S. The lateral left flank, low down approach is preferred than the right side, since the right side is crowded by the intestine which lead to difficult manipulation of the uterus. It is of interest to record that low-down site of the left flank approach was preferred than the highest site, especially in cases of emphysematous or dead fetus in buffaloes or cows to get rid a good drainage for the infected fetal fluids and reduce the risk of abdominal contamination. This resembles or is consistently with that reported by other studies (Campbell and Fubini, 1990, Hoeben *et al.*, 1997, Newman and Anderson, 2005, Schultz *et al.*, 2008).

Involvement of different factors such as species, age, and sex on animals on the prevalence of affections that required surgical or obstetrical interferences are of great values. In this vein, high incidence was recorded in sheep and goats compared to those in cattle and buffaloes. Authors found these results might be attributable to different factors such as the cost of treatment, and the population of small ruminants compared to large ruminants. High incidence of surgical affections was found in young aged animals (few days- 1 year). These results may refer to the possibility of congenital origin of some affection such as atresia ani.

The effect of sex of animal on the prevalence of affections that required surgical interferences was significant obvious in buffaloes (44 M: 125 F) compared to sheep and goats that showed non-significant effect. In Egypt, buffalo (*Bubalus bubalis*) is considered the main dairy animal. Egyptian buffaloes (3.69 million heads) constitute about 10.90 % and 1.97 % of the world buffalo's milk and meat, respectively (FAOSTAT, 2016). The great importance of buffaloes compared to cattle in Egypt lies in their greater capacity for adaption to the tropical climate, resistance to various diseases and the preference of consumers for buffalo milk because of its white color and good flavor (Abdel-Salam *et al.*, 2010).

## **CONCLUSION**

In conclusion, different affections that required surgical and obstetrical interferences are important practice in ruminant animals and its prevalence is affected by sex, species and age of animals, and gave a high success rate.

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