



A Retrospective Study of Fractures in Dogs and Cats at the Sulaimani Veterinary Teaching Hospital (2019–2023)



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Abstract

THIS retrospective investigation examined the prevalence, underlying factors, and therapeutic approaches for fractures in dogs and cats admitted to the Sulaimani Veterinary Teaching Hospital (SVTH), College of Veterinary Medicine, University of Sulaimani, between 2019 and 2023, with the exception of the COVID-19 lockdown year. A total of 474 clinical cases were reviewed, representing canine and feline patients of various breeds. The analysis revealed that dogs were more frequently affected by fractures than cats, with femoral fractures constituting the most common presentation. Diagnostic confirmation was achieved through evaluation of case history, clinical signs, physical examination, and radiographic imaging. The prevalence of canine femoral fractures showed a progressive increase across the study period, rising from 14.7% in 2019 to a peak of 33.8% in 2022, followed by a modest decline to 27.9% in 2023. A similar trend was observed for pelvic fractures, which became more prominent in 2023, while carpal fractures demonstrated a notable increase in 2022, diverging from the general pattern of orthopedic injuries. Treatment strategies involved the application of both internal and external fixation methods, selected according to fracture type and clinical considerations. The findings indicate that the incidence of fractures in dogs and cats has risen compared with data recorded between 2014 and 2018. Effective fracture management in the region requires not only appropriate surgical fixation techniques and comprehensive postoperative care but also public health measures aimed at controlling the population of stray dogs, which contribute substantially to the incidence of trauma-related fractures.

Keywords: Fractures, Orthopaedic, Intramedullary pin, bones, Fixation.

Introduction

The incidence of fractures in animals is influenced by various factors, such as car accidents and falls from heights [1]. Notably, femur fractures emerge as the most prevalent type of long bone fracture. Research indicates that, compared to cats, dogs exhibit a higher susceptibility to fractures, with local breeds being particularly vulnerable [2]. Moreover, male animals and those younger than six months old manifest increased susceptibility. Fractures are frequently accompanied by varying degrees of soft

tissue injury, including muscle contusion, vascular disruption, and periosteal damage. Traumatic events, such as road traffic accidents or falls, are common causes of fractures, which may present as hairline, complex, or compound in nature. The severity of these injuries is influenced by factors such as etiology, anatomical location, and the age of the animal [4, 5]. Accurate diagnosis requires a thorough evaluation incorporating case history, clinical signs, physical examination, and radiographic imaging [6]. Identifying the precise site of the fracture through

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physical examination and radiographs—such as those of the pelvis, femur, tibia, or fibula is essential for an accurate diagnosis [7]. Radiographic signs of fractures include radiopaque lines, disruption of trabecular patterns, and abnormal bone contour. Compound fractures may additionally exhibit displaced fragments, ballistic injuries, gas shadows, foreign bodies, callus formation, muscle atrophy, or osteoporosis [8].

Treatment strategies depend on the specific case and require choosing carefully between external fixation (e.g., fiberglass casts or external skeletal fixators) and internal fixation (e.g., intramedullary devices, screws, or orthopedic wire). Selecting the correct size for intramedullary pins (IMPs), screws, or plates is crucial to minimizing further soft tissue damage, and diligent postoperative care remains essential. Internal fixation with IMPs combined with cerclage wire continues to be widely used and is considered a standard procedure, despite possible complications. Studies show that when internal fixation is meticulously planned and executed, especially with appropriate implant selection and precise technique, the outcomes are generally favourable and complication rates can be lower than with external fixation methods. For example, in skeletally immature dogs with closed tibial diaphyseal fractures, the short-term complication rate was significantly lower for internal fixation (~20.3%) than for external skeletal fixation (~55.6%) in a 2025 multicenter retrospective study [9]. This retrospective study aimed to determine the prevalence of fractures in different animal species, particularly dogs and cats, admitted to the Veterinary Teaching Hospital, College of Veterinary Medicine, University of Sulaimani, North Iraq, between 2019 and 2022. Furthermore, it sought to analyse the management protocols employed during this period and to assess the effectiveness of the selected treatment approaches in achieving favourable clinical outcomes.

Material and Methods

Animals and study area

A total of 474 fracture cases were documented, primarily in dogs and cats, and their inclusion in this study was based on radiographic confirmation of the affected bones. The research was conducted in northern Iraq, within the region of Southern Kurdistan, located at geographical coordinates 36.18° N and 45.12° E, with an elevation ranging between 1,112 and 3,648 meters above sea level. The Sulaimani Veterinary Teaching Hospital (SVTH) serves a wide spectrum of animal species, including exotic and zoo mammals, domestic livestock, companion animals such as dogs and cats, avian species, and reptiles.

All clinical and management procedures undertaken in this study were approved by the Ethics Committee of the College of Veterinary Medicine, University of Sulaimani, ensuring adherence to established ethical guidelines. Importantly, the SVTH functions as a regional hub for veterinary care, providing access to a broad diversity of animal species. The inclusion of multiple species in the present dataset enhances the ecological validity and broadens the applicability of the study's findings.

Ethical approval

All the procedures and approaches of fractures fixation were conducted and approved according to the principles of the ethics by the college of the veterinary medicine research committee, University of Sulaimani, Kurdistan Regional Government, Kurdistan/ Iraq. Concomitantly, these recorded data on the operated animals to assess the clinical relevance of fracture management in comparison with previous clinical records.

Diagnosis

Diagnostic procedures were based on case history, observable clinical signs, physical examination, and definitive confirmation using digital radiography. Radiographic evaluation was performed with a high-precision digital X-ray unit equipped with a thin-film transistor (TFT) detector (Veterinary Portable Digital Radiographic System, Versa View W, [800] 346-9729). In cases involving trauma, such as vehicular accidents or falls from significant heights, ultrasonography was occasionally employed to assess potential internal hemorrhage or organ injury. Following diagnostic confirmation and prior to surgical management of fractures, informed consent was obtained from the animal's owner to authorize the procedure.

Animals' restraint

Following a comprehensive preoperative assessment, including fasting, physical examination, and laboratory analysis (incorporating liver and kidney tests) for each animal, they underwent admission to surgical anesthesia. The anesthetic protocols techniques were based on factors such as temperament, species, breed, age, fracture location, and severity, encompassing injectable, local, and regional methods. Diverse combinations of anesthetics, sedatives, and analgesics were employed to achieve optimal anesthesia, while in certain cases, physical restraint was applied without resorting to general or local anesthesia.

Anesthetic technique

In dog and cat, anesthesia was made by subcutaneous injection of atropine Sulphate, a premedicated drug, at a dose of 0.04 mg/kg was

followed 10–15 minutes later by intramuscular injection of a mixture of Xylazine 2% and Ketamine 10%, at a dose of 1 mg/kg and 15 mg/kg as one bolus injection. While in birds, ketamine was used as a general anesthesia in a dose of 25 – 40 mg/kg.

Monitoring devices were routinely utilized to observe key physiological parameters, including heart rate, respiration, SpO₂, and blood pressure. This meticulous approach aligns with established academic standards for veterinary surgical procedures.

Management of fractured bones

The fractured bones were grouped into two main groups; the first group involved those cases were immobilized through external coaptation such using cast of Plaster of Paris or fiberglass's. The second group includes those fractures that were fixed through surgical intervention using either IMPs, cerclage wire or bone plate and screw.

Surgical procedure

The surgical procedures were adhered to specific protocols on the basis of location and types of fractures, for example in diaphyseal femoral fracture, an incision along the craniolateral border of the thigh were made, then followed by a lengthwise incision in the superficial fascia lata leaf along the cranial border of the biceps femoris muscle. Subsequently, the biceps femoris was retracted caudally to expose the vastus lateralis muscle. The vastus lateralis was refracted away from the femur's surface to explore the femoral diaphysis. An IMPs was then strategically placed to provide bending support when combined with cerclage wire or an external fixator.

For normograde pin insertion, a small incision was made over the bony protrusion of the greater trochanter, allowing the IMP to enter the body. The IMP was advanced into the most proximal trochanteric ridge, progressing through soft tissue and subsequently into the trochanteric fossa, away from the greater trochanter's medial edge. Kern bone-holding forceps were employed to stabilize the proximal segment during IMP insertion into the proximal metaphyseal cancellous bone in a SL5 fashion. Fracture reduction ensued, with the IMP inserted into the distal segment as it emerged from the marrow cavity at the fracture site. A second pin of identical length served as a reference to ascertain correct IMP penetration into the marrow cavity. Excess pin length in proximal segment was cut at the level of the skin to avoid any external exposure to it and to avoid any possibility of infection.

Post-operative complications:

One of the main post-operation complications were due to by misapplication of principles and

improper selection of IMP size or implantation of the fixation device. The common non-specific complications are infection, implant failure/migration, refractures, mal or non-union, development of seroma, harm to the adjacent joint or peripheral nerve, and skin perforation with or without concurrent infection were all possible side effects. Possibly, the IMPs could protrude into the bone's end tissues due to pin migration or fracture site collapse. This may cause peripheral nerve entrapment or if the IMP enters a joint, direct or indirect entrapment or laceration of the sciatic nerve may occur.

Post-operative care

Antibiotic and analgesic medicines were administered in order to prevent post-operative pain and infections. The owners were advised to follow up the animals through taking an x-ray after 2, 4 and 6 weeks intervals. The IMPs were left in place for up to 6 weeks and finally removed using introducer with pin chuck, while, the cerclage wire, bone plates, and screws were not removed.

Statistical analysis

We used SPSS version 27 to generate the figures and conduct the statistical analyses. We calculated descriptive statistics for all the necessary variables. We applied the chi-square test to evaluate statistically significant differences in categorical data. When comparisons involved more than two groups, we applied the Bonferroni adjustment to determine significance levels between groups. We set the threshold for statistical significance at $p < 0.05$.

Results

This comprehensive analysis of orthopedic cases during a five year-record at SVTH revealed a total of 474 instances across various species, as outlined in Table 1. This table presents a thorough summary of the occurrence of fracture cases in different animal species over a span of five years at the SVTH. The data indicates a significant increase in fracture occurrences in dogs ($X^2=12.68$, $p\text{-value}= 0.005$) and but not in cats ($X^2=6.97$, $p\text{-value}= 0.07$), with both species experiencing a consistent upward trend in frequency from 2019 to 2023. Specifically, dogs demonstrated the greatest most significant percentage rise, reaching a peak of 34.4% of the overall cases in 2023. Similarly, the condition's prevalence in cats rose from 16.7% in 2019 to 31.7% in 2023. Various species, including horses, calves, lambs, and exotic animals such as lions and tigers, exhibited random occurrences without any continuous pattern over the years. According to the research, fractures are more prevalent in domestic animals such as dogs and cats, but they are comparatively seldom rare in other

species. The data indicates a significant increase in fracture occurrences in dogs and in cats.

Table 2 provides a more detailed analysis of fracture incidence in dogs and cats, specifically by sex. Male incidence in dogs consistently outpaces female incidence until 2023, when there is an increase in female fracture incidence, rising to 54.5%. In cats, there is a higher prevalence in males, showing a gradual annual increase, reaching its highest point of 35.6% in 2023. In 2019, there was no significant difference in the distribution of sexes among dogs and cats ($\chi^2 = 0.43$, $p = 0.5$). In 2020, no cases were recorded. In 2021, a significant difference was observed ($\chi^2 = 7.9$, $p = 0.005$), with female cats being more frequently represented compared to males, while dogs showed a relatively balanced distribution. In 2022, the difference became more pronounced ($\chi^2 = 10.3$, $p = 0.001$), largely due to a marked predominance of male dogs, whereas cats showed a balanced sex distribution. In 2023, although female dogs outnumbered males and male cats outnumbered females, the overall distribution did not differ significantly ($\chi^2 = 1.2$, $p = 0.3$).

In dogs, femoral fractures were the most frequently observed type across all study years, accounting for 37.0% in 2019, 36.4% in 2021, 34.8% in 2022, and 35.8% in 2023. Pelvic fractures were the second most common, ranging from 13.6% to 25.9% across the years, followed by carpal and tibial fractures in varying proportions. In cats, fracture distribution was more variable: tibial fractures were most common in 2019 (30.8%), whereas femoral fractures predominated in 2021 (37.5%), and pelvic fractures were most frequent in both 2022 (28.6%) and 2023 (29.3%). Other fracture types, including humeral fractures, were consistently less represented in both species. Statistical analysis revealed no significant differences in the distribution of fracture types between dogs and cats for any year ($\chi^2 = 4.3$, $p = 0.5$ in 2019; $\chi^2 = 6.4$, $p = 0.3$ in 2021; $\chi^2 = 4.9$, $p = 0.4$ in 2022; $\chi^2 = 8.8$, $p = 0.2$ in 2023). Overall, femoral and pelvic fractures remained the most prevalent across both species, although the exact patterns varied between years.

In dogs, the most commonly used fixation method varied slightly across the years but generally showed a predominance of fiberglass casts, particularly in 2021 (51.4%), 2022 (41.2%), and 2023 (46.0%). Pin fixation was also frequently applied, representing 34.4% in 2019 and remaining between 24–26% in subsequent years. Cerclage wire was used in a moderate proportion of cases, ranging from 13.5% to 31.3% across the years. In contrast, plate fixation was only reported in 2023 (4.8%), while coxofemoral luxation management was also documented exclusively in 2023 (4.8%). In cats,

fiberglass fixation consistently represented the highest proportion, accounting for 41.9% in 2019, 43.2% in 2021, 44.2% in 2022, and 44.1% in 2023. Pin fixation was the second most common method, varying between 25.0% and 36.4% across the years, while cerclage wire was applied less frequently (13.6–19.4%). Plate fixation and coxofemoral luxation were reported only in 2023, with 3.4% and 6.8%, respectively. Statistical analysis revealed no significant differences in fixation methods between dogs and cats in any year ($\chi^2 = 2.4$, $p = 0.5$ in 2019; $\chi^2 = 1.6$, $p = 0.7$ in 2021; $\chi^2 = 0.8$, $p = 0.8$ in 2022; $\chi^2 = 1.4$, $p = 0.8$ in 2023). Overall, fiberglass and pin fixation were the most frequently applied methods in both species, with only minor year-to-year variations.

Discussion

This study is a smooth continuation of previous recorded data published in the Iraqi Journal of Veterinary Sciences [10]. In contrast, various frequent fracture types were observed in the Veterinary Teaching Hospital, increased by two times compared to the previous record. Despite this, they were expected to be the species most prone to fractures due to car accidents and/or falls from places of heights [11]. This could be due to the increase in the number of homeless or stray dogs since 2020 as a result of the problem of the global pandemic, quarantine and lack of human food sources for animals, which made them move to cities and breed more quickly through contact with other dogs, or it could be due to increased interest in adoption by different people of different nationalities who were living in Kurdistan region.

Despite this, they were expected to be the species most prone to fractures as a result of car accidents and/or falls from places of heights [12]. This may be due to the increase in street numbers since 2020 as a result of the problem of the global pandemic, quarantine and lack of human food sources for animals, which made them move to cities and breed more quickly through contact with other dogs or it could be due to increased interest in adoption by different people of different nationalities who were living in Kurdistan.

As we noted earlier, male dogs and cats are more likely to suffer than females. The rate of fractures in male dogs at SVTH was around 76%, compared to 24% in female; in male cats, the rate was 63.4% while in females it was 36.6%. This can be explained by the fact that males tend to be more aggressive and roam more than their female counterparts, making them more prone to fractures and this may also be because people prefer to have males over females, which may represent a larger number of males [12].

Similarly, other studies have recorded that fractures usually occur in small ones such as puppies under 6 months of age rather than adults [13]. Because she learns to deal with the dangers of her environment through experience, and because the bones of younger people are more fragile than those of older ones, she is more likely to experience fractures [14]. During accidents, they are often injured from the back because they react slowly from their hind quarters, which can contribute to further fractures of the hind limbs.

Phrenic femoral fractures were the most frequent among long bone fractures. In our study, the incidence of femoral fractures was about 32.7% (123/376), which is more common than joint fractures as reported in a previous study [6]. According to a survey by Athal, the distal half of the femur is not aligned with the long axis of the pelvic limb, making it more susceptible to bending forces and increasing the risk of fracture [11].

Diagnosis of fractures based on history, clinical signs, physical examination and X-rays. Based on the location of the fracture, we would choose where to take the X-ray: pelvic fractures, femoral fractures, or leg and fibula fractures [15]. Under the lines of fracture of the radioactive X-rays, deviation from the trabecular pattern, cortex, or regular shape of the bone are all indicators of fracture. If the fracture is folded, affected, or if it exceeds the cut, the shell and radiation marrow will also increase. Small loose fragments of different sizes, projectiles, gas, foreign objects, signs of healing (primary or secondary), muscular dystrophy, and osteoporosis are all symptoms of compound fractures seen on radiographs [16].

According to these retrospective data from SVTH, based on the diagnosis of cases by X-ray, during the years 2019-2022, a large number of for various clinical reasons were accepted. Fracture was common among these cases, presenting the highest number of fracture cases (54.6%) (77/141), with higher levels of femoral fracture (61%) (47/77), as shown in other studies that are more prone to fractures. For example, a retrospective study was conducted from January 2017 to January 2020 at Cairo University Veterinary Hospital and some private clinics in Egypt to record the incidence and pattern of cat fractures. It has been recorded to account for 87% of all fracture cases, with a high incidence of hip fractures (38% of total posterior limb fractures) [17]. The choice of different methods of treatment depends on the overall cases of the fracture, which makes it essential to choose the right method, the appropriate size of the pin, screw, or plate to use, the least amount of tissue injury, and good care after surgery. This was performed using

intramedullary pins with a fixed cord, a common but still complicating treatment [18]. In this retrospective study, the majority of cases were surgically treated with internal fixation using IMPs and cord banding. We hope that this method will be successfully implemented in most cases because it was chosen for the right size, with the right equipment, and without wasting time, but there are still some cases without result or even death due to limited access to needs such as tools, the right place and time, or a lack of volunteers to care after surgery. Other methods that have been used include external fixation using a mold or fiberglass, partial or total amputation of a limb, depending on the circumstances [19]. Even the best surgeries still have complications, such as those associated with the stabilizer, which are repeated in, with the majority of complications related to implant infection. Despite this, complications are also observed in a few cases, either due to preoperative trauma or postoperative surgery, such as complications associated with the stabilizer, which have been successfully treated. When choosing different fastening techniques, the location and area of the trans-joint tires must be carefully considered in order to arrive at the appropriate installation method [20]. Radiologically, IMPs were found to be successful in treating fracture conditions, since good alignment of bone fragments was achieved. Moreover, postoperative treatment of the patient through medications and relaxation of the animal produces positive effects. Incidentally, she received antibiotic injections as postoperative therapy to reduce the risk of infection and promote faster healing [21]. In addition, the owner was advised to rest and restrict his movement to speed up the healing process; alternative techniques used to promote fracture healing, such as bone marrow and platelet-rich fibrin, which have different effects, have been used in previous research to increase the likelihood of healing [22, 23].

Conclusion

This retrospective study documented that the frequency of the fracture incidences were doubled compare to previously recorded data from 2014 to 2018, this due to increase in the number of street dogs and cats due to global pandemic, lock down and decrease in food supplies from human to animal, which made the animal move to city center as we know that those place are more crowd and there are a huge possibility of car incidents, the study finding show that the male of both animals are more susceptible for the fracture compare to the females and according to the ages the animal up to 6 months age are the target of accidents that lead to fracture due to their less adaptivity to avoid the danger, also we found out in this study that the most fracture were the femoral fracture beside the cat that mostly

suffered from hip fracture this give us more knowledge during the fracture cases in the clinic and hospital to be prepared first hand for those cases. The last finding indicates that by surgical intervention and using IMP and bone plates the fracture cases improve and healed more significant compare to the external fixation by cast and fiberglass's.

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Conflict of interest

All authors declare no conflict of interests.

Statement of human and animal rights

The experimental procedures and the accession of the study were undertaken according to the principles of the Ethics Research Committee of the College of Veterinary Medicine, University of Sulaimani, Kurdistan Regional Government, Kurdistan/ Iraq.

Data Availability

Data used in this study are available from the corresponding author upon reasonable request.

TABLE 1. Occurrence of fracture cases in different species of animals at SVTH from 2019 to 2023.

Species	Years		2021	2022	2023
	2019	2020			
	N (%)	N (%)	N (%)	N (%)	N (%)
Dog	32 (17.5)	0 (0)	37 (20.2)	51 (27.9)	63 (34.4)
Cat	31 (16.7)	0 (0)	44 (23.7)	52 (28.0)	59 (31.7)
Horse	1 (33.3)	0 (0)	0 (0)	1 (33.3)	1 (33.3)
Calf	2 (50.0)	0 (0)	1 (25.0)	0 (0)	1 (25.0)
Sheep	1 (20.0)	0 (0)	3 (60.0)	0 (0)	1 (20.0)
Deer	2 (22.2)	0 (0)	1 (11.1)	4 (44.4)	2 (22.2)
Squirrel	2 (28.6)	0 (0)	1 (14.3)	1 (14.3)	3 (42.9)
Rabbit	8 (32.0)	0 (0)	2 (8.0)	6 (24.0)	9 (36.0)
Guinea pig	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Bird	11(22.4)	0 (0)	9 (18.4)	12 (24.5)	17 (34.7)
Lion	0 (0)	0 (0)	1 (50.0)	0 (0)	1 (50.0)
Tiger	0 (0)	0 (0)	0 (0)	0 (0)	1 (100)
Total	90 (18)	0 (0)	99 (19.8)	127 (25.4)	158 (31.6)

N: Number, %: Percentage of case

TABLE 2. Shows number of fractures cases in cats and dogs with different years.

Species	Sex	2019	2020	2021	2022	2023
		N (%)	N (%)	N (%)	N (%)	N (%)
Dog	Male	25 (18.0)	0 (0)	29 (20.9)	46 (33.1)	39 (28.1)
	Female	7 (15.9)	0 (0)	8 (18.2)	5 (11.4)	24 (54.5)
Cat	Male	22 (18.6)	0 (0)	21(17.8)	33 (28.0)	42 (35.6)
	Female	9 (13.2)	0 (0)	23 (33.8)	19 (27.9)	17 (25.0)
	χ^2	0.43	-	7.9	10.3	1.2
	P value	0.5	-	0.005	0.001	0.3

N: Number, %: Percentage of case, χ^2 : Chi square.

TABLE 3. Shows different types of fractures in dogs and cats from 2019 to 2023.

Year	Species	Type of fractures						χ^2 (P value)
		Femur N (%)	Carpal N (%)	Tibia N (%)	Pelvic N (%)	Humerus N (%)	Other N (%)	
2019	Dog	10 (37.0)	4 (14.8)	3 (11.1)	7 (25.9)	1 (3.7)	2 (7.4)	4.3 (0.5)
	Cat	11(28.2)	3 (7.7)	12 (30.8)	8 (20.5)	1 (2.6)	4 (10.3)	
2021	Dog	26 (36.4)	4 (9.1)	5 (11.4)	11(25.0)	5 (11.4)	3 (6.8)	6.4 (0.3)
	Cat	15 (37.5)	2 (5.0)	1 (2.5)	7 (17.5)	8 (20.0)	7 (17.5)	
2022	Dog	23 (34.8)	16 (24.2)	6 (9.1)	9 (13.6)	7 (10.6)	5 (7.6)	4.9 (0.4)
	Cat	13 (26.5)	8 (16.3)	6 (12.2)	14 (28.6)	5 (10.2)	3 (6.1)	
2023	Dog	19 (35.8)	11(20.8)	5 (9.4)	13 (24.5)	3 (5.7)	2 (3.8)	8.8 (0.2)
	Cat	16 (27.6)	4 (6.9)	7 (12.1)	17 (29.3)	6 (10.3)	8 (13.8)	

N: Number, %: Percentage of case, χ^2 : Chi square.

TABLE 4. Depicts the frequency distribution of diverse surgical methodologies employed for the correction of fractured cases, delineated across various years.

Year	Species	Type of fixation						χ^2 (P value)
		IMP N (%)	Fiberglass N (%)	Cerclage wire N (%)	Bone plate N (%)	Hopeless N (%)	Coxofemoral luxation N (%)	
2019	Dog	11 (34.4)	8 (25.0)	10 (31.3)	-	3 (9.4)	-	2.4 (0.5)
	Cat	10 (32.3)	13 (41.9)	6 (19.4)	-	2 (6.5)	-	
2021	Dog	9 (34.3)	19 (51.4)	5 (13.5)	-	4 (10.8)	-	1.6 (0.7)
	Cat	16 (36.4)	19 (43.2)	6 (13.6)	-	3 (6.8)	-	
2022	Dog	13 (25.5)	21 (41.2)	12 (23.5)	-	5 (9.8)	-	0.8 (0.8)
	Cat	13 (25.0)	23 (44.2)	9 (17.3)	-	7 (13.5)	-	
2023	Dog	16 (25.4)	29 (46.0)	12 (19.0)	3 (4.85)	-	3 (4.8)	1.4 (0.8)
	Cat	19 (32.2)	26 (44.1)	8 (13.6)	2 (3.4)	-	4 (6.8)	

N: Number, %: Percentage of case, χ^2 : Chi square.

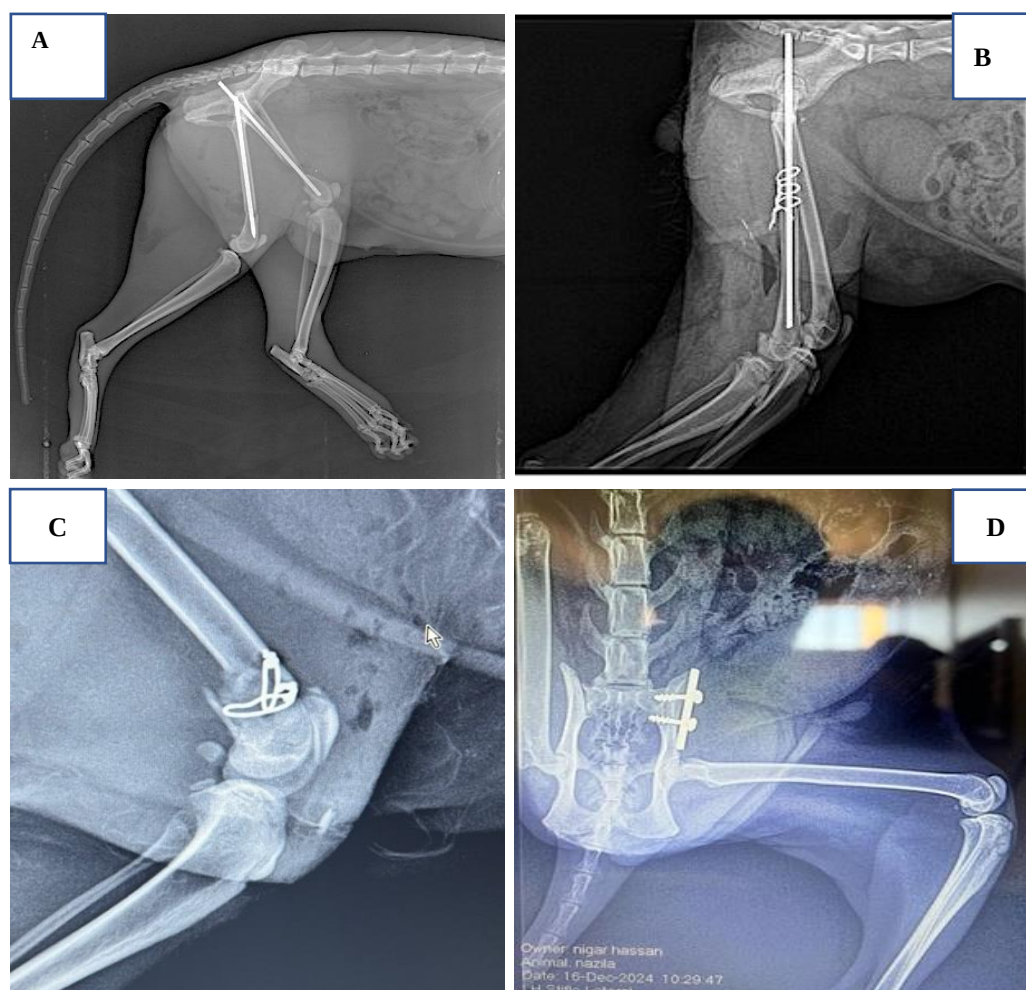


Fig. 1. A, illustrates fractures of the right and left femur fixed with intramedullary fixation. B, intramedullary fixation of the femoral fracture in combination with cerclage wire. C, depicts fracture of the distal epiphysis of the femur, they were reduced and fixed with double inserted cerclage wire through the two reduced fragment. D, bone plate and screws for fixation of the sacroiliac joint in cat.

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دراسة استرجاعية للكسور لدى الكلاب والقطط في مستشفى السليمانية البيطري التعليمي (2019-2023)

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الملخص

تبحث هذه الدراسة الاسترجاعية في معدل حدوث الكسور والعوامل المساهمة فيها وأنظمة علاجها في أنواع مختلفة من الحيوانات التي تم قبولها في مستشفى السليمانية البيطري التعليمي (SVTH)، التابع لكلية الطب البيطري بجامعة السليمانية، من عام 2019 إلى عام 2023، بما في ذلك عام إغلاق كوفيد-19. شملت الدراسة 474 حالة من مختلف الأنواع مثل الكلاب والقطط والخيول والحيوانات الأليفة الغريبة. وقد تم تحديد أن الكلاب كانت أكثر عرضة للكسور مقارنة بأنواع الحيوانات الأخرى، والتي تم تسجيل كسور الفخذ فيها على أعلى مستوى. تم تقديم التشخيص من خلال النظر في التاريخ المرضي، ومراقبة العلامات السريرية، وإجراء الفحص البدني، وأخيرًا إجراء التصوير بالأشعة السينية. أظهر معدل انتشار كسور الفخذ في حالات تقويم العظام في الكلاب اتجاهًا متزايدًا على مر السنين، حيث وصل إلى 33.8٪ في عام 2022. بعد ذلك، في عام 2023، كان هناك انخفاض طفيف إلى 27.9٪. والجدير بالذكر أن عام 2019 شهد بداية ظهور الكسور بنسبة 14.7٪، بينما شهد عام 2021 ارتفاعًا ملحوظًا إلى 23.6٪. وباتباع هذه الأنماط، برزت كسور الحوض كمصدر قلق بارز، وخاصة في عام 2023، بعد الذروة في حالات عظم الفخذ. ومن الجدير بالذكر أن كسور الرسغ احتلت الأولوية في عام 2022، مما يدل على انحراف مميز في حالة العظام. استخدمت إجراءات العلاج المختلفة مزيًا من تقنيات التثبيت الداخلي والخارجي. وخلصت النتائج إلى أن معدل حدوث الكسور قد ارتفع على النقيض من البيانات المسجلة سابقًا وخلال الفترة من 2014 إلى 2018، ولضمان العلاج الناجح، من الضروري السيطرة على الاكتظاظ السكاني للكلاب المشردة من أجل تقليل تواتر الكسور، فضلاً عن استخدام أجهزة التثبيت المناسبة لتوفير رعاية شاملة بعد الجراحة.

الكلمات الدالة: الكسور، جراحه العظام، مسمار نخاعي، العظام، التثبيت.