



## Immobilization of Fractures of Long Bones in Dogs with Age and Gender Bases and Plaster Casts

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**Annotation:** The article provides information on age and gender-related age and sex of tubular bone fractures in dogs, advantages and disadvantages of conservative treatment, and results obtained in veterinary practice.

**Keywords:** anamnesis, proximal, distal, epiphysis, diaphysis, plaster bandage, immobilization, reposition, bone fracture, X-ray apparatus, X-ray image.

**Relevance of the topic.** Limb fractures occupy a special place among injuries, since they often cause a number of functional disorders of the musculoskeletal system and become the cause of the development of various complications. In recent years, the number of traumatic diseases in dogs has been increasing, especially in the musculoskeletal system, shoulder, wrist and elbow joints of the front leg, hip, greater and lesser tibia of the next leg, cases of fractures of tubular bones in outbred, small young males, bone fractures have been observed hips are more common in males than females, and fractures of the hind limbs are more common than the forelimbs. The most commonly affected bone in dogs and cats is the femur. Car accidents are the leading cause of fractures. When comparing the body weight of dogs, the highest incidence was found predominantly in dogs with an average body weight of 10-25 kg, followed by 5-10 kg. Regarding the causes of bone fractures, the causes of bone fractures have been identified as a result of road traffic accidents. The pelvic organs, especially long bones such as the femur, are most commonly affected in dogs and cats and are most common in dogs under one year of age. [6, 542-546 p., 1, 638-652 p., 5, 127-139 p., 3, 531-534 p., 2, 1-8 p.,]. Complications of long bone fractures are a major concern for veterinary orthopedic surgeons, and considerations must be given to age, weight, type of bone fractured, type of fracture, fracture position, concurrent soft tissue injury, type of reduction, and method of fixation. If one or more of these factors is neglected, one or more complications will appear [4, pp. 314-336].

**Research methods.** The studies were conducted on 21 dogs with fractures of tubular bones out of 48 dogs delivered with mechanical injuries from February 2022 to May 2023 to the veterinary clinic of the Samarkand State Veterinary Medical University of Animal Husbandry and Biotechnology, to the Department of Veterinary Surgery and Obstetrics (Table 1) . In the process of conducting scientific research, we used the following methods and instruments: sighting, palpation, auscultation, percussion, thermometric, radiological and X-ray equipment. For this, we used the model of the X-ray machine DK // -525 R/F (FHD 525). X-ray diagnosis is of great importance because it helps to determine the level of bone fracture and apply plaster casts, which are used for subsequent treatment. Additionally, x-rays of broken bones show how to immobilize broken bones.

FOR 2022-2023 OF THE 48 DOGS WITH MECHANICAL INJURIES BROUGHT TO THE CLINIC, THE TABLE SHOWS 21 DOGS WITH FRACTURES OF LONG BONES.

**TABLE 1**

<b>№</b>	<b>DATE OF. MONTH. YEAR</b>	<b>BREED</b>	<b>AGE</b>	<b>GENDER</b>	<b>PLACE OF FRACTURE</b>	<b>CAUSE OF FRACTURE</b>
1	21.02.2022	CUR	6 MONTH	MALE	FRACTURE OF THE ULNA OF THE DIAPHYSEAL PART OF THE WRIST	AS A RESULT OF A TRAFFIC ACCIDENT
2	25.02.2022	SHABAN SHEPHERD DOG	7 MONTH	MALE	FRACTURE OF THE DIAPHYSEAL PART OF THE ULNA OF THE FOREARM AND THE DISTAL PART OF THE TIBIA AND FIBULA	AS A RESULT OF A TRAFFIC ACCIDENT
3	05.03.2022	LAPDOG	6 MONTH	MALE	FRACTURE OF THE DISTAL HUMERUS	WHEN FALLING FROM A HEIGHT
4	16.04.2022	SHABAN SHEPHERD DOG	6 MONTH	MALE	FRACTURES OF THE DISTAL PART OF THE TIBIA AND FIBULA	WHEN PINCHED BY A DOOR
5	19.04.2022	CUR	11 MONTH	MALE	FRACTURE OF THE ULNA OF THE DIAPHYSEAL PART OF THE WRIST	WHEN BEATEN
6	30.04.2022	SHABAN SHEPHERD DOG	4 MONTH	MALE	FRACTURES OF THE DISTAL PART OF THE TIBIA AND FIBULA	WHEN FALLING FROM A HEIGHT
7	03.05.2022	CUR	9 MONTH	MALE	FRACTURE OF THE DISTAL FEMUR	AS A RESULT OF A TRAFFIC ACCIDENT
8	18.05.2022	SHEPHERD DOG	8 MONTH	MALE	FRACTURES OF THE DIAPHYSEAL PART OF THE TIBIA AND FIBULA	AS A RESULT OF A TRAFFIC ACCIDENT
9	30.05.2022	ALABAI	5 MONTH	MALE	FRACTURE OF THE DIAPHYSEAL PART OF THE FEMUR	AS A RESULT OF A TRAFFIC ACCIDENT
10	07.06.2022	SHABAN SHEPHERD DOG	7 MONTH	MALE	FRACTURE OF THE DISTAL HUMERUS	AS A RESULT OF A TRAFFIC ACCIDENT
11	05.08.2022	CUR	15 MONTH	MALE	FRACTURE OF THE DISTAL FEMUR	AS A RESULT OF A TRAFFIC ACCIDENT
12	06.09.2022	CUR	6 MONTH	FEMALE	FRACTURE OF THE DISTAL EPIPHYSIS OF THE TIBIA AND FIBULA	AS A RESULT OF A TRAFFIC ACCIDENT
13	19.12.2022	SHABAN SHEPHERD DOG	6 MONTH	MALE	FRACTURE OF THE PROXIMAL FEMUR	AS A RESULT OF A TRAFFIC ACCIDENT
14	19.12.2022	ALABAI	3 MONTH	FEMALE	FRACTURE OF THE DISTAL FEMUR	WHEN FALLING FROM A HEIGHT
15	02.02.2023	SHEPHERD DOG	6 MONTH	MALE	FRACTURES OF THE DIAPHYSEAL PART OF THE TIBIA AND FIBULA	BROKEN BY A HORSE

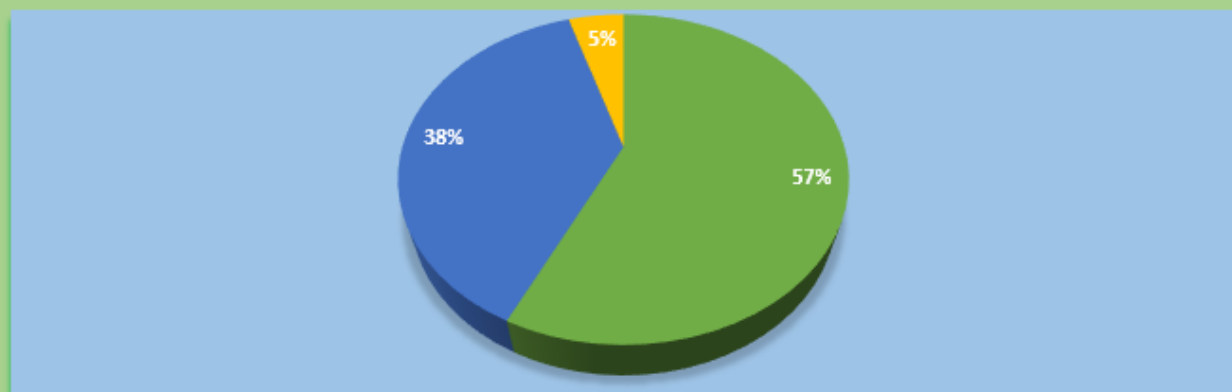
16	13.03.2023	CUR	5 MONTH	MALE	FRACTURE OF THE DIAPHYSEAL PART OF THE FEMUR	AS A RESULT OF A TRAFFIC ACCIDENT
17	17.03.2023	ALABAI	4 MONTH	MALE	YELKA SUYAGINIG PROKSIMAL EPIFIZ QISMIDAN SINISHI	AS A RESULT OF A TRAFFIC ACCIDENT
18	05.04.2023	CUR	9 MONTH	FEMALE	FRACTURE OF THE DIAPHYSEAL PART OF THE FEMUR	AS A RESULT OF A TRAFFIC ACCIDENT
19	20.04.2023	SHEPHERD DOG	7 MONTH	MALE	FRACTURES OF THE PROXIMAL PART OF THE TIBIA AND FIBULA	AS A RESULT OF A TRAFFIC ACCIDENT
20	04.05.2023	PUG	3 MONTH	MALE	FRACTURE OF THE PROXIMAL FEMUR	WHEN FALLING FROM A HEIGHT
21	11.05.2023	CUR	9 MONTH	MALE	FRACTURES OF THE DISTAL PART OF THE TIBIA AND FIBULA	AS A RESULT OF A TRAFFIC ACCIDENT

**Results.** When reviewing the case history of 21 dogs presenting to the clinic with long bone fractures, 57% of cases occurred in dogs under six months of age, 38% of cases occurred in dogs over six months of age, and 5% of cases of bone fractures occurred in dogs older than one year of age. Table 2 and diagram.

2-JADVAL VA DIAGRAMMA

№	SUYAKLARI SINGAN ITLARNING YOSHI	SUYAKLARI SINGAN ITLAR SONI
1	OLTI OYLIKGACHA BO'LGAN	12
2	OLTI OYLIKDAN KATTA BO'LGAN	8
3	BIR YOSHGACHA BO'LGAN	1
4	JAMI:	21

SUYAKLARI SINGAN ITLAR YOSHINING FOYIZ XISOBIDA KO'RINISHI



■ OLTI OYLIKGACHA BO'LGAN

■ OLTI OYLIKDAN KATTA BO'LGAN

■ BIR YOSHGACHA BO'LGAN



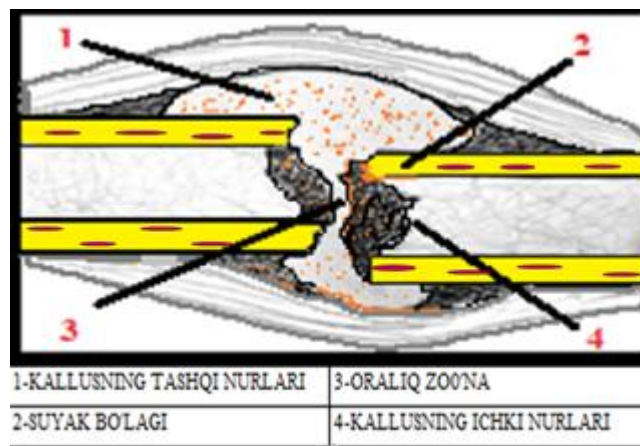
A-rasm

**Clinical example.** A local breed dog named Simba, age 6 months, weight 18.3 kg, medical history No. 6, was delivered to the clinic at the Department of Veterinary Surgery and Obstetrics of the Samarkand State University of Veterinary Medicine, Animal Husbandry and Biotechnology. On February 21, 2022, as a result of a traffic accident, his front legs were broken from the ulna. The animal was delivered



B-rasm

to the clinic on February 22, 2022, and was diagnosed with a closed fracture of the diaphyseal part of the carpal ulna of the forelimbs. (Figure A-B). The diameter of the bone increased due to the formation of a bone lump at the fracture site. Bone healing takes 46-52 days (average 50 days), that is, after clinical and radiological confirmation



C-rasm

of complete bone fusion. The day of removal of the plaster casts is scheduled; if the bone is correctly set, the installation process will speed up and the animal will move without defects (Figure C).





D-rasm



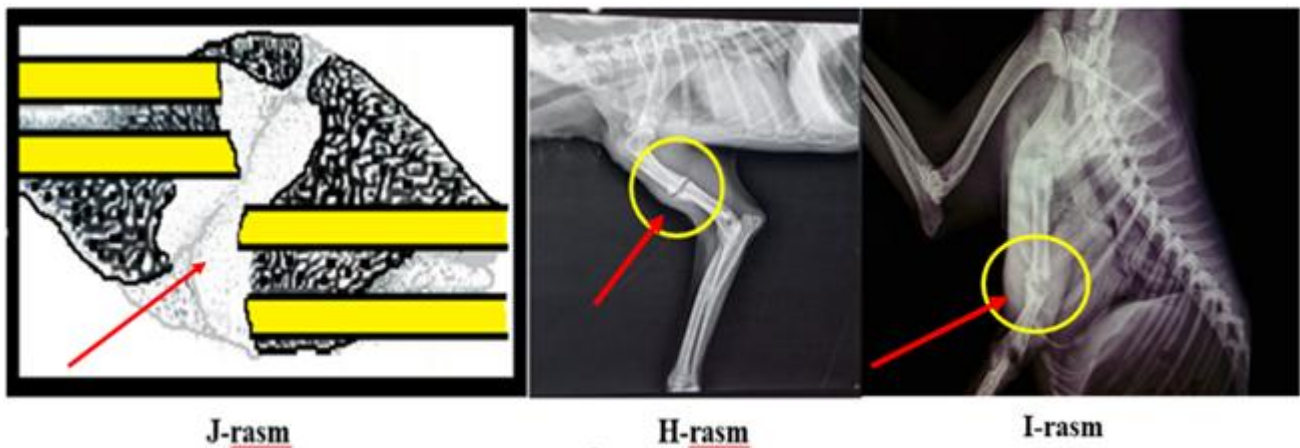
E-rasm

**Clinical example.** A lapdog, purebred dog, gender male, nickname Belka, 6 months, weight 6.3 kg, medical history No. 3, delivered to the clinic at the Department of Veterinary Surgery and Obstetrics of the Samarkand State University of Veterinary Medicine, Animal Husbandry and Biotechnology. On March 4, 2022, the dog suffered a leg injury as a result of a fall from a height. On March 5, 2022, the animal was delivered to the clinic, the diagnosis of a fracture of the distal part of the right humerus of the dog was established by X-ray methods (Figure D). According to the results of a clinical examination, the dog's condition was satisfactory; in case of a closed fracture, a plaster cast was applied using conservative methods. (Figure E-F). When osteosynthesising broken bones, the practical value of plaster casts is great; they quickly harden when fixing closed



F-rasm

fractures, and surgery is not required; with proper reposition and fixation of the bone, the cupping process in a broken bone takes 45-55 days (on average 50 days). X-ray diagnostics is of great practical importance when planning the day of removal of plaster casts from bones after clinical and radiological examination and formation of a



bone package. If the bones are not moved correctly or fixation is not performed properly, the bones may fail to heal and a pseudarthrosis may occur (Figure J-H-I). If closed fractures are not treated in time, after 5 or 6 days, and then the bone is immobilized using conservative methods, a false joint may develop in the bones. In such cases, it is recommended to use surgical methods, since if you wait until the broken bones heal without scraping the bone surface, the bone plate will develop separately in both broken bones, which will lead to the development of a pseudarthrosis (Figure H-I).

### Conclusions

1. 57% of bone fractures in dogs occur before the age of six months, at which time their bones are very fragile and one of the leading causes of bone fractures is road traffic accidents.
2. The reason why bone fractures in dogs occur predominantly in male dogs is because interest in male dogs is very high and the majority of dogs kept in households are male dogs.
3. Whatever methods of immobilization of fractures of tubular bones in dogs are used, the bone is fixed, only the timing of bone fusion with conservative plaster casts is delayed by 10-15 days compared to surgical methods.
4. Plaster casts belong to the methods of osteosynthesis and are considered simple and effective methods for immobilizing fractures of tubular bones.
5. Reparative regeneration of bone tissue in fractures of long bones is based primarily on the formation of endosteal and intramedullary bone packing.

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