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DESCRIPTIVE OSTEOLOGY OF THE PELVIC LIMB OF BOVINE

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SUMMARY
The bovine pelvic limb performs essential functions for the animal's locomotion, weight support and stability. Composed of robust and articulated bones, this limb is essential for the daily life of cattle, especially in activities such as grazing and moving across varied terrain. The main bones of the pelvic limb include the femur, tibia, fibula, tarsus, metatarsals, phalanges and sesamoids, including the largest of them, the patella. The femur, the largest bone in the limb, connects to the hip and is crucial for transmitting force during walking and running. The tibia and fibula, located in the leg, support the weight of the body and allow flexion and extension of the knee joint. The tarsus, made up of several smaller bones, forms the ankle and facilitates foot mobility. The metatarsals and phalanges make up the distal part of the limb, providing support and stability when walking. Studying the osteology of the pelvic limb is important to understand the biomechanics and health of cattle. Knowing the bone structure helps veterinarians diagnose and treat injuries, in addition to improving management practices and animal welfare. It is important to highlight that this detailed anatomical information is generally found in specialized books, and not in scientific articles. Therefore, this article aims to describe the osteology of the bovine pelvic limb, offering an accessible and practical reference for professionals and students in the field. **Key words:**Anatomy. Bovine. Hind limb. Bone.

ABSTRACT
The pelvic limb of cattle performs essential functions for locomotion, weight support, and animal stability. Composed of robust and articulated bones, this limb is fundamental to the daily life of cattle, especially in activities such as grazing and moving over varied terrains. The main bones of the pelvic limb include the femur, tibia, fibula, tarsus, metatarsals, phalanges, and sesamoids, including the largest one, the patella. The femur, the largest bone in the limb, connects to the hip and is crucial for force transmission during walking and running. The tibia and fibula, located in the leg, support the body's weight and allow for the flexion and extension of the knee joint. The tarsus, composed of several smaller bones, forms the ankle and facilitates foot mobility. The metatarsals and phalanges constitute the distal part of the limb, providing support and stability while walking. Studying the osteology of the pelvic limb is important for understanding the biomechanics and health of cattle. Knowing the bone structure helps veterinarians diagnose and treat injuries, as well as improve animal management and welfare practices. It is important to highlight that these detailed anatomical information are generally found in specialized books, not in scientific articles. Therefore, this article aims to describe the osteology of the pelvic limb of cattle, offering an accessible and practical reference for professionals and students in the field.
Keywords: Anatomy. Beef. Posterior Limb. Cap.

1. INTRODUCTION

Cattle, animals of great economic and ecological importance, perform essential functions in the production of meat, milk and dairy products, in addition to contributing to the maintenance of pastoral ecosystems. Their daily activities, such as grazing, locomotion and social interaction, directly depend on the integrity and functionality of their musculoskeletal system. Among the components of this system, the skeleton plays a crucial role in providing structural support, protecting internal organs, and facilitating movement.

Particularly, the pelvic limb of cattle is essential for locomotion and support of body weight. Composed of robust and articulated bones, such as the femur, tibia, fibula, tarsus, metatarsals and phalanges, this limb allows the animal to perform complex movements and resist the forces imposed by the environment. A detailed understanding of the descriptive anatomy of these bones is essential for students and

veterinary medicine professionals, as it facilitates the diagnosis and treatment of injuries, in addition to improving management practices and animal welfare.

However, there is a lack of detailed information on bovine pelvic limb osteology in scientific articles. Most of the available data is dispersed in specialized books, making quick and practical access difficult for students and professionals. This article aims to fill this gap, offering a comprehensive and accessible description of the anatomy of the bovine pelvic limb bones, contributing to the advancement of knowledge and improvement of practices in the area.

2 THEORETICAL FRAMEWORK

2.1 Pelvis

From the Latin “pelvis”, which means “basin” or “container”, the word pelvis refers to the shape of the bony structure that supports the spine and protects the internal organs.

The pelvis, also anatomically referred to as the thigh, is a robust and complex bony structure that plays a crucial role in supporting body weight, protecting internal organs and facilitating locomotion. It begins its development as three separate bones on each side that eventually fuse into a solid structure. The two halves of the pelvis are joined ventrally by a cartilaginous joint called the pelvic symphysis. The three bones (on each side) that fuse to form the pelvis are: the ilium, ischium and pubis, which together create a bony pelvis that articulates with the spinal column in the sacral region. The pelvis serves as an anchor point for several muscles and ligaments that control the movements of the pelvic limbs and the animal's posture.

In all species, the pelvis also plays a vital role in reproduction, providing a bony passage through which young are born. The shape and structure of the pelvis varies between species to meet their specific needs for movement, support and reproduction, reflecting each animal's evolutionary adaptation to its environment and lifestyle.

Ilium : from the Latin “ilium”, which is the plural of “ile”, meaning “flank” or “side”, the word ilium refers to the upper and wider part of the hip bone. The ilium is the largest and most cranial of the three bones that make up the pelvis. It extends dorsally and laterally, forming the wings of the ilium, which are broad and robust to support the weight of the body and provide attachment points for important muscles. The ilium articulates with the sacrum, forming the sacroiliac joint, which is crucial for the stability of the pelvis and the transmission of forces between the spine and pelvic limbs.

ischium : from the Greek “ischion”, which means “hip” or “hip”, the word ischium refers to the lower and posterior part of the hip bone. The ischium is the caudal portion of the pelvis and is characterized by its massive and robust structure. It forms the back part of the pelvic floor. The ischium provides anchorage points for muscles and ligaments that are essential for the locomotion and posture of cattle, especially those involved in the extension and flexion of the pelvic limbs.

Pubis : From the Latin “pubes”, which means “groin bone” or “pubic bone”, the word pubis refers to the anterior part of the hip bone. The pubis is the smallest of the three pelvic bones, it is the ventral portion of the pelvis and is found in the lower part of the pelvic structure. It articulates with the ischium and ilium, completing the pelvic ring. The pubis is relatively thinner compared to the ilium and ischium, but it still plays an important role in forming the pelvic floor and supporting internal organs. It serves as an attachment point for muscles and ligaments that help stabilize and move the pelvic limbs.

In relation to anatomical features, the pelvis, in general, is characterized by great diversity. A wing of the ilium is a broad, flat structure that projects laterally from the body of the ilium, providing an attachment surface for important muscles. Agluteal face , located on the external surface (facing caudally) of the wing of the ilium, is where the gluteal muscles are inserted. In contrast, thesacropelal face-vica , located on the inner surface (facing cranially) of the wing of the ilium, articulates with the sacrum, forming a crucial part of the sacroiliac joint, which provides stability to the pelvis.

Ajoint rough area , found on the sacropelvic surface, is characterized by an irregular surface that facilitates the firm connection between the ilium and the sacrum. Athigh tuberosity , a bony prominence at the lateral end of the wing of the ilium, serves as an insertion point for ligaments and muscles that support the pelvis. Next to it, thesacral tuberosity , more medial, is located at the junction of the ilium and the sacrum, which is why it gets its name, in addition to contributing to the fixation of important ligaments.

Ailiac crest , an upper, curved edge of the wing of the ilium, located between the coxal and sacral tuberosities of each wing of the ilium, serves as an insertion point for abdominal and dorsal muscles.

Obody of the ilium , the narrowest and central portion of the bone, connects the wing of the ilium to the acetabulum, forming the structural basis of the iliac bone.

Agreater sciatic notch , a curvature at the posterior edge of the ilium, allows the passage of important nerves and blood vessels to the posterior region of the pelvis. Just below, thelesser sciatic notch , a less pronounced curvature, also facilitates the passage of neurovascular structures. Aischial spine , a bony projection between the greater and lesser sciatic notches, serves as an insertion point for ligaments and muscles that stabilize the pelvis.

To theischial tuberosities are the most caudal structures of the pelvis, they are a robust bony prominence at the posterior end of the ischium, an important support point when the animal is at rest. Oischial arch , a curve formed by the junction of the ischial branches, contributes to the formation of the pelvic opening.

Already theacetabulum , a deep and spherical cavity, articulates with the head of the femur, forming the hip joint, essential for the animal's mobility. The acetabulum is still formed by the acetabular cavity, which is the articular area, and the acetabulum fossa, where the femoral head ligament is inserted and still has an irregular edge, presenting a cranial and caudal notch.

Oobturator foramen , a large opening between the ischium and pubis, allows the passage of nerves and blood vessels to the lower part of the body, but its main function is to make the pelvis lighter.

Apelvic or pelvic symphysis is the ventral union of the two sides of the pelvis, creating a cartilaginous junction between the pubic and ischial bones that provides flexibility and stability to the pelvis. This symphysis can be further subdivided intoischial symphysis It ispubic symphysis .

Ailiopubic eminence , a bony elevation at the junction of the ilium and pubis, serves as an insertion point for muscles and ligaments. Finally, thepecten of the pubis , the upper edge of the pubic ramus, is an insertion area for abdominal muscles and ligaments that support the pelvic structure.

These anatomical features, interconnected and interdependent, form the complex structure of the bovine pelvis, providing support, stability and mobility essential for the lives and daily activities of these animals.

2.2 Femur

From the Latin “femur”, which means “thigh”, the word femur refers to the thigh bone, the longest and strongest bone in the body. Therefore, the femur is the longest and most robust bone in the hind limbs of domestic animals. It articulates proximally with the pelvis, forming the coxofemoral joint..Distally, the femur articulates with the tibia and patella, forming the knee joint..The structure of the femur is adapted to withstand great forces and tensions, being essential for the stability and mobility of animals.

Aproximal epiphysis The femur is the upper end of the bone, which articulates with the acetabulum of the pelvis, forming the hip joint. On the contrary, thedistal epiphysis , located at the lower end of the femur, articulates with the tibia and patella, forming the knee joint. Between these two ends is thediaphysis , which is the long, cylindrical portion of the bone, responsible for supporting and distributing the forces generated during movement.

Being a long bone, the femur has four surfaces or faces, namely the cranial, caudal, lateral and medial. Acranial face of the femur is the anterior surface of the bone, which is toward the animal's head. In contrast, thecaudal face is the posterior surface.Already theside face is located on the external part of the femur, while themedial face , on the inside. All surfaces of the bone have insertion areas for various muscles and ligaments that stabilize and move the hind limb.

Ahead of the femur is a spherical structure on the proximal epiphysis that fits into the acetabulum, allowing a wide range of movement in the hip. Afovea of femoral head is a small depression on the surface of the head, where the femoral head ligament is inserted, contributing to the stability of the femur.

articulation. Ofemoral head neck is the narrow region that connects the head to the body of the femur, providing activating a lever for the muscles that move the hip.

Ogreater trochanter is a bony prominence on the lateral surface of the proximal epiphysis. Already the lesser trochanter It is located on the medial surface, below the head of the femur. There is also a third trochanter that receives precisely this name (third trochanter) , which is a small prominence on the lateral surface of the femur and which, despite being less developed in cattle, still serves as a muscle insertion point. Atrochanteric fossa is a depression between the greater trochanter and the body of the femur.Already theintertrochanteric crest is a bony line that connects the greater trochanter to the lesser trochanter, serving as an insertion point for muscles and ligaments.

Proceeding distally is thefemur body , in the diaphysis, the long, cylindrical portion of the bone, being characterized by being quite straight.

In the distal epiphysis, and on the cranial surface of the femur, there istrochlea, a articular surface on which the patella slides, facilitating smooth movement of the knee.

Youlateral and medial condyles are rounded prominences on the distal epiphysis that articulate with the tibia, forming the knee joint. Aintercondylar fossa , which gets its name because it is located between the condyles, is a depression that accommodates ligaments crucial to the stability of the knee. In turn, the supracondylar fossa It is a depression above the condyles, as the name suggests, where muscles and ligaments are inserted.

Youlateral and medial epicondyles , located at the ends of the condyles, laterally and medially, respectively, serve as insertion points for ligaments that stabilize the knee joint. They are easily palpable and can be used as landmarks in live animals.

2.3 Patella

From the Latin “patella”, which means “small dish” or “small pan”, the word patella refers to the sesamoid bone that protects the knee joint.

The patella, also known as the kneecap, is the largest sesamoid bone in the body and is located in front of the knee joint in domestic animals. It is inserted into the tendon of the quadriceps femoris muscle and acts as a pulley, increasing the efficiency of muscle strength during knee extension. The patella protects the knee joint against impacts and distributes the forces exerted on the tendon, reducing wear and tear and the risk of injury.

The patella has two surfaces or faces: the cranial and the caudal. Acranial surface of the patella , facing the front of the body, has a smooth and convex surface, which facilitates sliding under the skin and subcutaneous tissues during knee flexion and extension movements. Acaudal face , in turn, is concave and articulates with the trochlea of the femur, forming a synovial joint that allows smooth and efficient movement of the knee. This articular surface is covered by hyaline cartilage, which reduces friction and absorbs impacts during locomotion.

Furthermore, the patella has two main edges: the lateral and the medial edge. Alateral edge of the patella , located on the outside, and themedial border , located on the inside, serve as insertion points for ligaments and tendons that stabilize the patella and keep it aligned with the femoral trochlea.

Abase of the patella , which is the upper end of the bone, is broad and serves as the insertion point for the tendon of the quadriceps femoris muscle. This tendon is crucial for knee extension, allowing the animal to stand, walk and run. Already theapex of patella , located at the lower end, is tapered and connects to the patellar ligament, which is inserted into the tibial tuberosity. This ligament is essential for transmitting the forces generated by the thigh extensor muscles to the tibia, facilitating movement of the posterior limb.

2.4 Tibia

From the Latin “tibia”, which means “flute” or “tube”, the word tibia refers to the long bone of the leg, which resembles the shape of a flute. Therefore, the tibia is a long bone and the main weight-bearing part of the lower part of the pelvic limb. It extends from the knee to the tarsus and therefore plays a vital role in supporting body weight and transmitting the forces generated by muscles during locomotion. The tibia forms the femorotibial joint of the knee with the femur above it and the hock joint with the tarsus below it.

When viewed from above, the proximal end of the tibia appears triangular with the apex of the triangle facing forward. But, in its length, the tibia, as a long bone, is divided into three parts: the proximal and distal epiphyses and the diaphysis. Aproximal epiphysis of the tibia is the upper end of the bone, which articulates with the femur and fibula. In turn, the distal epiphysis, located at the lower end of the tibia, articulates with the talus at the ankle, forming the tibio-tarsal joint. Atibial shaft , where are bone body , is the long, cylindrical portion that connects the proximal and distal epiphyses.

Furthermore, the tibia is made up of several faces or surfaces: the cranial, caudal, lateral and medial faces. Acranial face it is relatively smooth and faces forward, towards the animal's skull; already thecaudal face , which is rougher, is the part of the tibia that faces caudally; Theside face , in turn, is the external surface of the bone, considering the imaginary median sagittal line as the center of the body; while themedial face , is the innermost surface, facing the most inside the body.

In the proximal epiphysis, there are thelateral and medial condyles , which are articular surfaces that They connect with the femoral condyles, therefore forming a synovial joint classified as condylar. Between these condyles, theintercondylar eminence stands out as a prominent structure that serves as an insertion point for the cruciate ligaments, essential for the stability of the knee joint. This eminence is formed by two tubercles: the lateral and the medial. Olateral tubercle and themedial tubercle , located in the proximal epiphysis, are bony prominences that serve as insertion points for ligaments and tendons. In the center of these two tubercles is thepopliteal notch , a depression located on the posterior surface of the proximal epiphysis, allows the passage of important neurovascular structures to the posterior region of the leg.

Atibial tuberosity , located on the cranial surface of the proximal epiphysis, is a crucial insertion point for the patellar ligament, which connects the patella to the tibia and which continues with a blade-like linguistic prominence, called thetibial crest . Next to the tibial tuberosity is theextensor groove , a depression on the cranial surface in the proximal epiphysis and diaphysis, below the lateral condyle.

On the caudal face of the bone, the muscular lines of the tibia are found, present along the diaphysis, which are bone crests that serve as insertion points for various muscles..

The distal epiphysis is characterized by the presence ofcochlea , a articular surface that facilitates ankle movement. Furthermore, thelateral malleolus and themedial malleolus , bony prominences located on the external and internal surfaces of the distal epiphysis, respectively, provide lateral and medial stability to the ankle, preventing dislocations and injuries.

2.5 Fibula

From the Latin “fibula”, which means “brooch” or “buckle”, the word fibula refers to the long, thin bone of the leg, which resembles a brooch. The fibula, also known as the fibula, is a long, thin bone located on the lateral part of the leg of domestic animals, which runs parallel to the tibia, with which it articulates proximally and, depending on the species, distally. Although it does not directly support the weight of the body, but mainly serves as a place for the muscle to attach.

Afibula head , located at the proximal end of the bone, articulates with the tibia.It serves as an insertion point for several ligaments and tendons, which help stabilize the knee joint and transmit muscular forces. Among these ligaments, the lateral collateral ligament stands out, which connects the fibula to the femur and tibia, providing lateral support to the joint. The presence of robust ligamentous structures in the head of the fibula is crucial to prevent dislocations and injuries, ensuring the functional integrity of the hind limb.

Ofibula body is the long, thin portion that extends from the head to the distal end of the bone, in some species. Although it is relatively thin, the body of the fibula is strong and flexible, allowing the absorption of impacts and the transmission of forces along the limb. The thin structure of the fibula body alsocontributes to the lightness of the limb, facilitating movement. However, in cattle, the fibula is very short, practically without a body. Despite this, at the distal end of the tibia there is still a part of the fibula, called the malleolar bone.

2.6 Tarsus

From the Greek “tarsos”, which means “flat” or “flat structure”, the word tarsus refers to the set of bones that form the back of the foot. Therefore, the tarsus is a structure made up of several bones that form the base of the foot of domestic animals, connecting the leg to the metatarsus. It forms the region known as the ankle in humans and the hock in animals and plays a fundamental role in absorbing impact and distributing forces during locomotion.

The tarsal bones have at least four faces or surfaces: dorsal, plantar, lateral and medial. A dorsal side is the dorsal surface of the tarsus, facing the animal's head, while theplantar face is the super reverse face, facing caudally and towards the ground. The lateral edge is the outer edge of the tarsus, facing outward from the limb, and themedial border is the inner margin, facing the center of the animal's body.

The tarsus is made up of two rows of bones: the proximal and distal rows. Aproximal row of tarsus It is made up of larger, more robust bones, which bones are named, and include the calcaneus and the talus. Ocalcaneus , the largest tarsal bone, is characterized, among other anatomical features, by thecalcaneal tuberosity , a bony prominence that serves as the insertion point for the tendon of the large gastrocnemius muscle and corresponds to the heel.

Otalus , another essential component of the proximal row, articulates with the tibia and fibula, forming the

ankle joint. Atalar trochlea is a articular surface that facilitates smooth and efficient movement of the joint, while thetalus support , a bony projection, provides additional support and stability to the joint, distributing forces in a balanced manner. Calcaneus and talus articulate proximally with the tibia and part of the fibula, the malleolar bone, and distally with the bones of the distal row of the tarsus.

Adistal row of tarsus It is made up of smaller but equally important bones, whose names refer to their numbers, which in the case of cattle include the centroquarto, the tarsal I and the tarsal II + III. Ocentroquarto It is a central bone that articulates with the bones of the proximal and distal row, functioning as a connection point. Otarsier I It is a small bone located in the medial part of the tarsus. Otarsier II + III , a fusion of two bones, is situated in the central part of the tarsus.

2.7 Metatarsus

From the Greek “meta” (beyond) and “tarsos” (plane), the word metatarsus refers to the bones located beyond the tarsus, in the middle part of the foot. Therefore, the metatarsus consists of a series of long bones that form the base of the foot, located between the tarsus and the phalanges. It provides structural support and facilitates mobility.

The metatarsus is very similar to the metacarpus. Being a long bone, the metatarsus, in its length, can be divided into proximal and distal epiphyses, in addition to the diaphysis. And it also has four surfaces: dorsal, plantar, medial and lateral. Aproximal metatarsal epiphysis articulates with the tarsal bones, forming a solid connection.This region is characterized by an articular surface that facilitates joint mobility and stability..Already thediaphysis, where the body of the metatarsal is , is the long, cylindrical portion that extends between the proximal and distal epiphyses. And thedistal epiphysis it is its furthest extremity from the animal's body and articulates with the phalangeal bones, forming the base for the animal's fingers.

Adorsal side is the dorsal surface of the metarsus, facing the animal's head, while theplantar face it is the reverse surface, facing caudally and towards the ground. Aside edge is the outer margin of the metarsus, facing the outside of the limb, and themedial border is the inner margin, facing the center of the animal's body, all surfaces equally important as they offer different attachment points for muscular and tendon structures.

The bovine metatarsus has longitudinal grooves on both the dorsal and plantar surfaces. Odorsal longitudinal groove it is a depression that runs along the dorsal surface. In a similar way, theplantar longitudinal groove It is located on the plantar surface. Both demonstrate the union of the bovine metatarsal bones, which over the centuries have fused into just one metatarsal.

Close to the proximal and distal epiphyses, there is alsoproximal and distal channels , which are passages for blood vessels and nerves, ensuring adequate nutrition and innervation of the extremities.

Alateral trochlea and medial trochlea are articular surfaces on the distal epiphysis that allow smooth, coordinated movements between the metatarsal and phalanges. Finally, thetrochlear notch is a depression between the lateral and medial trochleae.

2.8 Phalanges

After the metatarsals, distally, are the fingers, which are each composed of three bones, called phalanges. Regarding etymology, the word phalanx derives from the Greek “phalanx”, which means “line of soldiers” or “row”, referring to the bones that make up the fingers and which are arranged in rows.

The phalanges are named according to their proximity to the body: they are theproximal phalanx , the one that articulates with the metatarsus; Themiddle phalanx , which is located in the middle of the other two; and thedistal phalanx , which is the furthest from the axial skeleton and is covered by the hoof.

Despite being small, most phalanges are considered long bones. Therefore, it is divided into proximal and distal epiphyses, in addition to the diaphysis. And it has four surfaces: dorsal, plantar, lateral and medial. A proximal epiphysis of the phalanx is the upper end of the bone, which articulates with the distal epiphysis of the metatarsus or with the anterior phalanx, depending on the position of the phalanx in the digital sequence. The diaphysis of phalanx , or body of the bone, is the long, cylindrical portion that extends between the proximal and distal epiphyses. Already thedistal epiphysis of the phalanx is the lower end of the bone, which articulates with the subsequent phalanx or with the distal end of the limb, depending on the position of the phalanx.

Adorsal side of the phalanx is the surface facing the animal's head or back, while theplantar face is the surface facing the floor.

To thelateral and medial faces of the phalanx are the outer and inner surfaces of the bone.

2.9 Sesamoids

Finally, the sesamoid bones of the thoracic limb of domestic animals are small bones that develop within tendons or ligaments, usually in places where these tissues pass over joints. They play a crucial role in reducing friction, increasing the mechanical efficiency of tendons and protecting them against excessive wear and tear. The word derives from the Greek “sesamon”, which means “sesame seed”, as ancient anatomists thought that the shape of sesamoids resembled sesame seeds.

The presence and function of the sesamoid bones are essential to the health and performance of the forelimbs, allowing smooth movement and protecting the tendon and ligamentous structures as they act as bearings on the joint surfaces to allow the muscles to exert powerful forces. in the bones without wearing out the tendons from the constant back and forth movement on the joint.

Sesamoids are also named according to their proximity to the body, being calledproximal sesamoids , those that are located closer to the trunk compared todistal sesamoids , which are located further away from the axial skeleton, but both in the region of the joints between the metatarsals and phalanges.

2. MATERIAL AND METHOD

This work consists of a narrative review of the literature on the bones and anatomical details of the bovine pelvic limb. The literature search was carried out in the PubMed, ScienceDirect and Google Scholar databases, using the following keywords: “Anatomy”, “Osteology”, “Bones”, “Leg”, “Pelvic limb”, “Bovine” and “Ruminant ”. However, although this information is widely available in books, there is a lack of scientific articles that deal in detail with the osteology of domestic animals, including cattle. Therefore, this article aims to describe the bones of the bovine pelvic limb, offering a more accessible reference for students and professionals in the field.

After selecting the studies, a critical reading and analysis of the contents was carried out, seeking to identify the main details related to the bones of the bovine pelvic limbs. The information obtained was organized and synthesized to prepare this literature review.

3. FINAL CONSIDERATIONS

In conclusion, the bovine pelvic limb is crucial for locomotion, weight support and stability, being composed of robust and articulated bones such as the femur, tibia, fibula, tarsus, metatarsals, phalanges and sesamoids, including the patella. The femur connects to the hip and is vital for transmitting force during movement. The tibia and fibula support body weight and allow flexion and extension of the knee, while the tarsus facilitates foot mobility. The metatarsals and phalanges provide support and stability when walking. Understanding the osteology of this limb is essential for diagnosing and treating injuries, as well as improving management practices and animal welfare. This article aims to fill the gap of detailed information on the anatomy of the bovine pelvic limb, offering a practical and accessible reference for professionals and students, since such information is generally only found in specialized books.

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