

Comparative Anatomy of the Korean Native Goat

4. Muscles of the Pelvic Limb

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INTRODUCTION

A detailed knowledge of the anatomy of the goat is necessary for the understanding of many problems in the fields of physiology, pathology and surgery, including those related to many experimental works on this animal. There were, however, few reports on the anatomy of the goat with special reference to its musculature. In the text-books of veterinary anatomy available at present, the goat has been left out of consideration or simply compared with cattle and sheep without detailed description. But direct carry-over of the information from cattle or sheep to the goat might be impossible for studies requiring specific anatomical knowledge.

In recent years, the Korean native goat has been used frequently as a subject for many experimental studies, but its anatomy has not yet been completely elucidated. As a basis for clinical and other experimental works, it was keenly felt necessary to describe in detail its anatomy and to compare with that of other animals.

In the previous reports on the muscles of the thoracic limb¹⁾ and the thoracic wall²⁾, we were able to observe that the Korean native goat differs

somewhat from the cattle and sheep. Our endeavour in the present paper was limited to describe and to illustrate the gross anatomy of the pelvic limb of the Korean native goat.

The nomenclature employed in this paper was chosen, taking into consideration that used by other authors.

MATERIALS AND METHODS

Twelve Korean native goats of both sexes (5 males and 7 females) with black hair, ranging in body weight from 15 to 25kg, were grossly dissected. After sacrifice, they were infused with and stored in embalming fluid (50% isoprophyl alcohol, 10% glycerine, 5% phenol, 30% water). All illustrations were made while directly viewing the dissected specimens.

RESULTS

Sublumbar Muscles

M. psoas minor

Origin: The bodies of the last one or two thoracic vertebrae and all lumbar vertebrae.

Insertion: Psoas tubercle on the shaft of ilium by a

strong and flattened tendon.

This was a pennately arranged muscle lying the most medial of the sublumbar muscle. It arose from the last one or two thoracic all and lumbar vertebrae and gradually converged to the psoas tubercle. A very prominent glistening and strong tendon arose on the ventral edge of this muscle and flattened to insert on the psoas tubercle.

The strong and wide tendon inserted to the iliac crest arose partly from the tendon of insertion of this muscle and partly from the ventral surfaces of the bodies of the last two lumbar vertebrae. *M. sartorius* originated from this tendon.

M. psoas major

Origin: The ventrolateral surfaces of the bodies of the last two thoracic and all lumbar vertebrae; the ventral surfaces of the transverse processes of all lumbar vertebrae; the vertebral end of the last rib and on the fascia of *M. quadratus lumborum* at the level of the last rib.

Insertion: The lesser trochanter of the femur in common with *M. iliacus*.

It converged from its origin in a manner similar to that of *M. psoas minor*. The ventral border was covered with glistening fascia which is continued to the tendon of insertion. At the ventral of the ilium it fused partly with *M. iliacus*, but each muscle was distinct superficially because *M. psoas major* was covered with the glistening tendon.

M. iliacus

Origin: The ventrolateral surface of ilium, the ventral sacroiliac ligament and the sacrum.

Insertion: The lesser trochanter of the femur, in common with *M. psoas major*.

This was a muscle located on the ventrolateral surface of the body of the ilium. It was grooved on its ventral aspect to accommodate the caudal portion of *M. psoas major*. They combined with each other to form *M. iliopsoas*. A strong and wide tendon, cranially arising from the ventral surfaces of the bodies of the last two lumbar vertebrae between *M. psoas major* and *M. psoas minor* and caudally from the tendon of insertion of *M. psoas*

minor, passed over the ventral surface of *M. iliopsoas* and converged to the iliac crest.

M. quadratus lumborum

Origin: The ventral aspect of the last five thoracic vertebrae; the caudal border of the last three ribs; the ventral surface of the lumbar transverse processes.

Insertion: The cranial border of the transverse processes of succeeding those from which they arose; the ventral sacroiliac ligament; the ventral surface of the wing of the ilium.

It was the most dorsal of the sublumbar muscles, lying on the ventral surfaces of the transverse processes of all lumbar vertebrae. This muscle was composed of numerous bundles.

Lateral Muscles of Hip and Thigh

M. tensor fasciae latae

Origin: The tuber coxae and the aponeurosis covering the lateral aspect of *M. gluteus medius*; cranial portion of iliopectineal line.

Insertion: The fascia lata and femoral fascia.

It was a triangular muscle in form, with its apex at the tuber coxae. The fibers of this muscle radiated from the tuber coxae in a fanlike manner to insert on the fascia lata and femoral fascia. Therefore, it was indirectly inserted to the patella and the crest of tibia through the fascia lata. This muscle had attachment to the cranial portion of *M. gluteobiceps*. It was believed that this attachment remained as a result of a fusion of the caudal portion of this muscle and the cranial part of *M. gluteus superficialis*.

M. gluteus medius

Origin: The fascia over *M. longissimus lumborum*; the gluteal surface and the tuber coxae of the ilium; the dorsal and lateral sacroiliac and sacrotuberous ligaments.

Insertion: The greater trochanter and its crest of the femur.

This muscle was composed of a large superficial part and a deep smaller part. This smaller part was *M. gluteus accessorius*, covered with the

glistening tendon. It arose from the lateral half of the gluteal surface of the ilium and inserted by a strong tendon into femur distal to the greater trochanter, under cover of the proximal part of the vastus lateralis.

M. gluteus profundus

Origin: The body of ilium; the ischiatic spine; sacrotuberous ligament; lesser sciatic notch.
Insertion: The neck of the femur near the greater trochanter, the craniolateral edge of the greater trochanter.

This was a fan-shaped muscle and the deepest of the gluteal muscles.

M. gluteobiceps

Origin: The mid-sacral crest of the first to the last sacral spine; sacrotuberous ligament; the dorsal and ventral surfaces of the tuber ischii; the gluteal and caudal fascia and intermuscular septum between this muscle and M. semitendinosus.

Insertion: The fascia lata and crural fascia; the cranial surfaces of the patellar ligament and the tibial crest by a strong and wide tendon.

It was believed that this muscle had fused with the caudal part of M. gluteus superficialis. In the Korean native goat M. gluteus superficialis was separated from M. biceps femoris though not clearly, so could be considered as a separate muscle which arose from the gluteal fascia over M. gluteus medius and ended on M. biceps femoris.

This muscle was composed of two parts. The large cranial part took an extensive origin and its fibers ran cranioventrally. The smaller caudal part was blended with M. semitendinosus distal to the ischiatic tuber and its fibers ran caudoventrally. These two parts were able to be clearly separated in the proximal portion, but near the insertion of this muscle the two parts fused and was continued to the crural fascia. A strong tendon passed on the medial surface of the cranial part and divided into 2 portions near the stifle joint to be inserted into the patella and the tibial tuberosity.

M. semitendiosus

Origin: The tuber ischii and M. gluteobiceps near

its origin.

Insertion: The cranial border of the tibia by a strong aponeurotic tendon and the fascia surrounding the tendons of M. gastrocnemius and M. flexor digitorum superficialis.

This muscle lay in the caudal part of the thigh between M. gluteobiceps and M. semimembranosus and partially was fused with M. gluteobiceps in its origin. In the distal part of the muscle it passed under M. gracilis to be inserted into the cranial border of the tibia by means of a thin aponeurosis.

M. semimembranosus

Origin: The ventral surface of the tuber ischii and the pelvic symphysis behind that of M. gracilis.

Insertion: 1) By fleshy muscle to the medial epicondyle of the femur. 2) By tendon to the small area beneath the medial articular margin of the tibia. 3) By aponeurosis to the medial patellar ligament and the medial collateral ligament.

At the distal half of the muscle it separated completely into two parts. The large cranial part ended on the medial epicondyle of the femur and the medial patellar and medial collateral ligaments. The smaller caudal part ended on the tibia.

Medial Muscles of Thigh

M. sartorius

Origin: The cranial portion arose from the tendon of M. psoas minor and iliac fascia; The caudal portion from the body of the ilium by an aponeurosis.

Insertion: The medial surface of the tibia and the medial patellar ligament in common with that of M. gracilis by an aponeurotic tendon.

It was a thin, straplike muscle lying at the medial surface of the thigh. This muscle divided at its origin into two portions between which the femoral vessels passed.

M. gracilis

Origin: The pelvic symphysis in common with its fellow of the opposite side and the prepubic tendon with M. pectineus.

Insertion: The medial surface of the tibia, crural fascia and the fascia surrounding *M. gastrocnemius* and *M. flexor digitorum superficialis*; the medial patellar ligament.

This muscle had an extensive origin in subpelvic area in common with its fellow of the opposite side and also in common with *M. pectineus*. This end aponeurosis spread out into the crural fascia and was blended with that of *M. sartorius* at the medial surface of the thigh.

M. pectineus

Origin: The prepubic tendon and the cranial border of pubis.

Insertion: A thin line at the caudal surface of the femur from lesser trochanter to the medial epicondyle by a flat tendon.

M. adductor

Origin: The ventral surface of the pubis and the ischium; the tendon of origin of *M. gracilis*; its fellow of the opposite.

Insertion: The caudal surface of the femur from the lesser trochanter to the medial epicondyle; the tendon of origin of the medial head of *M. gastrocnemius*.

M. quadratus femoris

Origin: The ventral surface of the ischium medial to the lateral angle of the ischial tuberosity.

Insertion: Distal to the intertrochanteric crest and the femur near the lesser trochanter.

M. obturatorius externus

Origin: The ventral surface of ischium and pubis; the margin of the obturator foramen.

Insertion: The trochanteric fossa in common with *M. obturatorius internus* and *M. gemelli*.

M. obturatorius internus

Origin: The pelvic surface of ischium and pubis around the obturator foramen.

Insertion: Emerging through the obturator foramen, it fused with the insertion tendon of *M. obturatorius externus*.

This muscle fused with *M. obturatorius externus* while passing through the obturator foramen. This muscle was called the intrapelvic part of *M. obturatorius externus* by Getty⁽⁴⁾.

M. gemelli

Origin: The ventrolateral surface of ischium below the lesser ischiatic notch; the medial surface of ischiatic tuber.

Insertion: The trochanteric fossa with those of the *obturatorius externus* and *internus*.

It was a small, fanlike muscle, not divisible. The fibers ran in a cranioventral direction.

Cranial Muscles of Thigh

M. quadriceps femoris

a) *Vastus lateralis*

Origin: The lateral surface of the greater trochanter and a narrow line along the caudolateral surface of the femur.

Insertion: The lateral part of patella and the lateral patellar ligament.

b) *Rectus femoris*

Origin: The ventral aspect of the body of the ilium near the margin of the acetabulum.

Insertion: The base and cranial surface of the patella.

c) *Vastus medialis*

Origin: The medial surface of the femur from the neck to the proximal third.

Insertion: The medial part of the patella and the the medial patellar ligament.

d) *Vastus intermedius*

Origin: The whole of the cranial, medial and lateral surfaces of the body of the femur.

Insertion: The base, medial and lateral surfaces of the patella.

The *vastus lateralis* covered the *rectus femoris* laterally and was inseparably united with the latter muscle except its origin.

The *rectus femoris* was round in cross section and was partly covered by the medial and the lateral vasti muscles. It also was partly united with these two muscles. This was the only muscle with a connection directly to the *os coxae*.

The *vastus medialis* covered partly the *rectus femoris* medially and was partly covered by *M. pectineus*. This muscle was partly united with *M. pectineus*, the *vastus intermedius* and the *rectus*

femoris.

The vastus intermedius was separate into medial and lateral parts and covered the cranial, medial and lateral aspects of the femur.

Muscles of Leg and Foot

A) Dorsolateral Group

M. fibularis tertius

Origin: The extensor fossa of femur in common with *M. extensor digitorum longus* and *M. extensor digitorum medialis*.

Insertion: The cranial surface of proximal end of metatarsal bone and the fused second and third tarsal bones.

The belly was fusiform and somewhat flattened. This muscle had a common tendon in its origin with *M. extensor digitorum longus* and *M. digitorum medialis*. This common tendon passed the muscular groove between *M. fibularis longus* and *M. tibialis cranialis*.

The tendon of this muscle was pierced by the underlying *M. tibialis cranialis*.

M. extensor digitorum medialis

Origin: The extensor fossa of the femur in common with the preceding and the long digital extensor muscles.

Insertion: The second phalanges of the medial digit.

At the distal third of the tibia this muscle became a tendon. This tendon was connected with that of *M. extensor lateralis* in the distal third of the metatarsus and with the tendon of *M. interosseus medius* near the insertion. It was designated as the medial belly of *M. extensor digitorum longus*.

M. extensor digitorum longus

Origin: The extensor fossa of femur with both the preceding muscles.

Insertion: The third phalanges of both digits.

This muscle arose from the extensor fossa of the femur by a common tendon with *M. fibularis tertius* and *M. extensor digitorum medialis*, and adhered closely together with these muscles at the

craniolateral surface of the leg.

Its insertion tendon passed under the proximal extensor retinaculum in common with those of both preceding muscles. It bifurcated at the fetlock joint to be inserted into the third phalanges of both digits.

M. tibialis cranialis

Origin: It had two points of origin 1) the cranial origin was from the lateral surfaces of the tibial tuberosity and the tibial crest and the proximal portion of the body of the tibia 2) the caudal, lateral origin was from the lateral condyle of the tibia and vestigial head of the fibula.

Insertion: The first tarsal bone and the fused second and third tarsal bones, the medial surface of the proximal end of the metatarsus.

This was a thin muscle lying on the lateral surface of the tibia. This muscle was divided at its origin into two heads by passage of the common tendon of origins of *M. fibularis tertius*, *M. extensor digitorum longus* and *M. extensor digitorum medialis*.

It became a tendon at the middle of the tibia and passed under the proximal extensor retinaculum. Its insertion tendon perforated that of *M. fibularis tertius* on the tarsus.

M. fibularis longus

Origin: The lateral condyle of the tibia, just above that of *M. tibialis cranialis*; the lateral collateral ligament of the femoro-tibial joint.

Insertion: The first tarsal bone.

This muscle became a tendon at the middle third of the tibia. Its tendon ran distally and crossed over that of *M. extensor digitorum lateralis*. This tendon passed medially between the fourth tarsal bone and the metatarsal bone to end on the first tarsal bone. In the ventral articular surface of the fourth tarsal bone, the sulcus for this tendon existed.

M. extensor digitorum lateralis

Origin: The lateral collateral ligament; the lateral condyle of the tibia; the fibrous band representing fibula; the lateral border of the tibia.

Insertion: The base and dorsal surface of the second phalanges of the lateral digit.

This was a round muscle lying between *M. fibularis longus* and *M. flexor hallucis*. It adhered closely with *M. flexor hallucis* and there existed between these two muscles the fibrous band from which they arose. Its tendon gave off a branch united with that of *M. extensor digitorum medialis* on the distal third of the metatarsus.

B) Plantar Group

M. gastrocnemius

Origin: 1) The medial head—the medial supracondyloid tuberosity and the medial epicondyle of the femur 2) The lateral head—the lateral condyloid tuberosity and the lateral epicondyle.

Insertion: The caudal part of the calcaneal tuber.

This muscle was composed of the lateral and the medial heads which were fused except near the origin.

The deep surface of this muscle was grooved to accommodate *M. flexor digitorum superficialis*. The tendons of the medial and the lateral heads fused to form a single tendon. At this point this tendon lay superficial to the superficial flexor tendon, but later wound laterally around the latter tendon to gain its medial surface.

M. soleus

origin: The lateral condyle of the tibia.

Insertion: The medial surface of the lateral head of *M. gastrocnemius*.

M. flexor digitorum superficialis

Origin: The supracondyloid fossa of the femur.

Insertion: The plantar surface of the second phalanges of the medial and lateral digits; the calcaneal tuber by fascial slips on both medial and lateral sides.

This muscle was embedded in the deep surface of *M. gastrocnemius*. Near the calcaneal tuber its tendon crossed the tendon of *M. gastrocnemius* medially to gain its caudal surface. The tendons of these two muscles formed the common calcaneal tendon with the tendons of the gluteobiceps, semi-

tendinosus and soleus.

M. flexor digitorum profundus

Origin: 1) Superficial head (*Tibialis caudalis*)—the lateral condyle of the tibia 2) Deep head (*Flexor hallucis*)—the lateral condyle and the caudal surface of the body of the tibia, the fibrous band representing the fibula. 3) Medial head (*Flexor digitorum longus*)—the lateral condyle and the caudal surface of the tibia.

Superficial head became a tendon near the distal third of the tibia which joined with that of medial head immediately proximal to the tarsus. Deep head was the largest of the three heads and had an extensive origin from the tibia. This muscle was closely adherent to *M. extensor digitorum lateralis* in its origin.

Medial head was replaced by a tendon in the distal third of the tibia and passed over the medial surface of the tarsus. This tendon joined with the common tendon at the proximal end of the metatarsus. The combined tendon of insertion was inserted like the insertion of deep flexor tendon of the forearm.

M. popliteus

Origin: The lateral epicondyle of the femur by a strong tendon.

Insertion: The caudomedial surface of proximal half of the tibia just below the medial condyle of the tibia.

This was a triangular muscle with the tendinous tissue at its origin. It passed medioventrally from its origin to insert on the medial surface of the tibia.

M. extensor digitorum brevis

Origin: The dorsal surface of the tarsus, proximal trochlear surface.

Insertion: The tendon of *M. extensor digitorum longus* at the level of the proximal metatarsus.

M. interosues medius

This muscle was same that of the thoracic limb⁹⁾.

DISCUSSION

M. gluteus superficialis is a uniform muscle in

the lower quadrupeds and in some primates. But in some domestic animals^{1,3,4,6,8)} this muscle can't be observed by fusing with the other muscles. Therefore, the nomenclature of this muscle and the related other muscles comes into problem.

Ellenberger and Baum³⁾ stated that, in the swine and ruminant, the caudomedial part of *M. gluteus superficialis* fuses with *M. biceps femoris* and the ventrolateral part fuses with *M. tensor fasciae latae*. May⁶⁾ in the sheep and Getty⁴⁾ in the ruminant stated that the cranial part of *M. gluteus superficialis* fuses with *M. tensor fasciae latae* and the caudal part fuses with the cranial border of *M. biceps femoris*. Bassett¹⁾ stated that, in the ewe, cow and goat, the pelvic part of *M. biceps femoris* (*M. gluteus superficialis*) is continuous with the thigh part. On the ground of the fusion of the muscles, Ellenberger and Baum³⁾ and Getty⁴⁾ in the ruminant designated *M. biceps femoris* as *M. gluteobiceps* and Barone²⁾ as *M. paramers biceps*. Nitschke⁷⁾ analysed in detail the superficial gluteal musculature. He reported *M. biceps femoris* must be designated as *M. gluteobiceps* in the horse, ruminant and swine.

In the Korean native goat, the caudal portion of *M. tensor fasciae latae* is probably a portion of the cranial part of the original superficial gluteal muscle. In the cranial portion of *M. biceps femoris* a small muscle is separated though not completely, so could be considered as *M. gluteus superficialis*. This muscle arises from the gluteal fascia over *M. gluteus medius* and is similar to *M. gluteus superficialis* observed in the horse. Therefore, in the Korean native goat, it is considered that this combined muscle must be designated as *M. gluteobiceps*.

In the sheep May⁶⁾ reported *M. piriformis*. But Getty⁴⁾ in the cow, goat and sow didn't report. Ellenberger and Baum³⁾ described this muscle fuses with *M. gluteus medius* in the horse, cattle and swine. In the Korean native goat we also can not observe this muscle. In the Korean native goat the tendon of *M. extensor digitorum lateralis* connects with that of *M. extensor digitorum medialis* at the distal third of the metatarsus by a thin tendon originated from the tendon of the former muscle. Near this tendinous band the fascia connects the two tendons. But it is differentiated from the fascia by the direction of the fibers of the tendon.

Getty⁴⁾ stated that *M. extensor digiti I longus* (*M. extensor hallucis longus*) occurs as a separate muscle in the sheep. But in the Korean native goat this muscle is not observed.

CONCLUSION

The muscle of the pelvic limb of the Korean native goat were described, illustrated and compared with those of other animals.

On the cranial portion of *M. biceps femoris*, a small muscle is separated though not completely. It is believed that the caudal part of *M. gluteus superficialis* remains without fusing completely with *M. biceps femoris*.

The tendon of *M. extensor digitorum medialis* is united on the distal third of the metatarsus with that of *M. extensor digitorum lateralis* by a tendinous band. This tendinous band is a branch divided from the tendon of *M. extensor digitorum lateralis*.

M. extensor hallucis longus, and *M. piriformis*, observed in the sheep, don't occur in the Korean native goat.

Explanations for plates

- Fig. 1. Ventral view of sublumbar muscles.
- Fig. 2. Lateral view of muscles of gluteal and thigh regions. *M. gluteus superficialis* (arrow) is separated from *M. gluteobiceps*.
- Fig. 3. Lateral view of superficial muscles of gluteal and thigh regions.
- Fig. 4. Lateral view of muscles of gluteal and thigh regions after *M. gluteobiceps* and *M. tensor fasciae latae* removed.
- Fig. 5. Lateral view of deep muscles of gluteal and thigh regions.
- Fig. 6. Medial view of superficial muscles of thigh.
- Fig. 7. Medial view of deep muscles of thigh.
- Fig. 8. Ventral view of muscles of hip joint.
- Fig. 9, and 10. Medial and lateral views of muscles of stifle joint.
- Fig. 11. Cranial view of *vastus intermedius*.
- Fig. 12. Cranial view of tendons of *Mm. extensor digitorum longus, medialis and lateralis*. The tendons of *Mm. extensor digitorum lateralis and medialis* are connected by a tendinous band.
- Fig. 13. The tendons of *Mm. extensor digitorum medialis and lateralis* are connected by a flat tendon, which originates from the tendon of *M. extensor digitorum lateralis*.
- Fig. 14 and 15. Lateral and medial views of superficial muscles of leg and foot.
- Fig. 16. Cranial view of deep muscles of leg and foot.
- Fig. 17. Caudal view of *M. gastrocnemius*.
- Fig. 18. Caudal view of deep muscles of leg.

Abbreviations

45: *M. psoas minor*, 46: *M. psoas major*, 47: *M. iliacus*, 48: *M. quadratus lumborum*, 49: *M. tensor fasciae latae*, 50: *M. gluteus medius*, 50A: *M. gluteus accessorius*, 51: *M. gluteus profundus*, 52: *M. gluteobiceps*, 52A: tendon of 52, 53: *M. semitendinosus* 54: *M. semimembranosus*, 55: *M. sartorius*, 56: *M. gracilis*, 57: *M. pectineus*, 58: *M. adductor*, 59: *M. quadratus femoris*, 60: *M. obturatorius externus*, 61: *M. obturatorius internus*, 62: *M. gemelli*, 63: *M. quadriceps femoris* (63A: *Vastus lateralis*, 63B: *Rectus femoris*, 63C: *Vastus medialis*, 63D: *Vastus intermedius*) 64: *M. fibularis tertius*, 64A: Tendon of 64, 65: *M. extensor digitorum medialis*, 65A: Tendon of 65, 66: *M. extensor digitorum longus*, 66A: Tendon of 66, 67: *M. tibialis cranialis*, 67A: Tendon of 67, 68: *M. fibularis longus*, 69: *M. extensor digitorum lateralis*, 69A: Tendon of 69, 70: *M. gastrocnemius* (70A: lateral head, 70B: medial head), 71: *M. soleus*, 72: *M. flexor digitorum superficialis*, 72A: Tendon of 72, 73: *M. flexor digitorum profundus* (73A: *Tibialis caudalis*, 73B: *Flexor hallucis*, 73C: *Flexor digitorum longus*), 74: *M. popliteus*, 75: *M. extensor digitorum brevis*, 76: *M. interosseus medius*. A: Proximal extensor retinaculum, B: Common tendons of 64, 65 and 66, C: Medial collateral ligament, D: Patellar ligament, E: Connecting band.

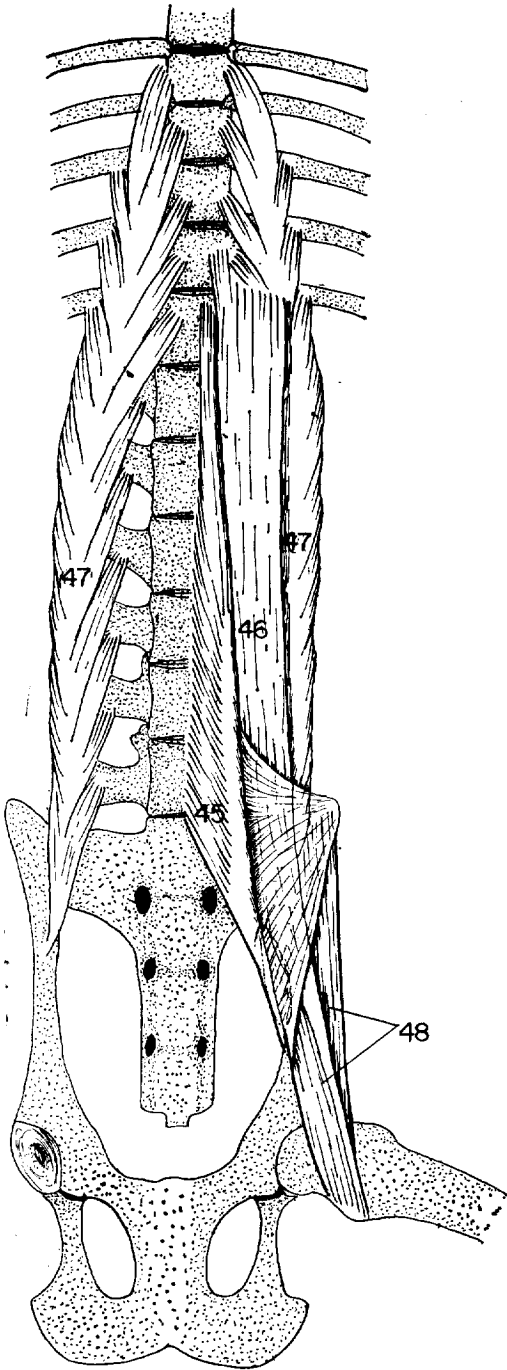


Fig. 1.

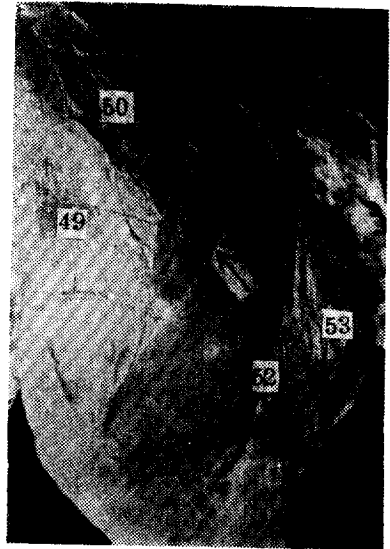


Fig. 2.

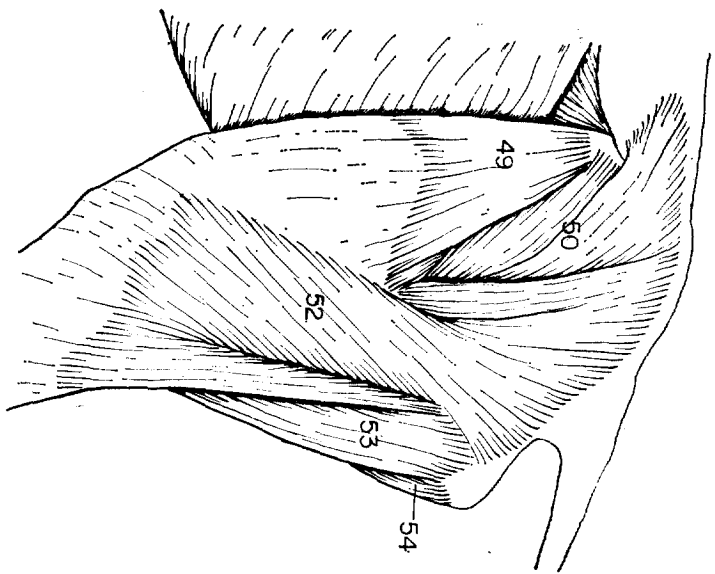


Fig. 3.

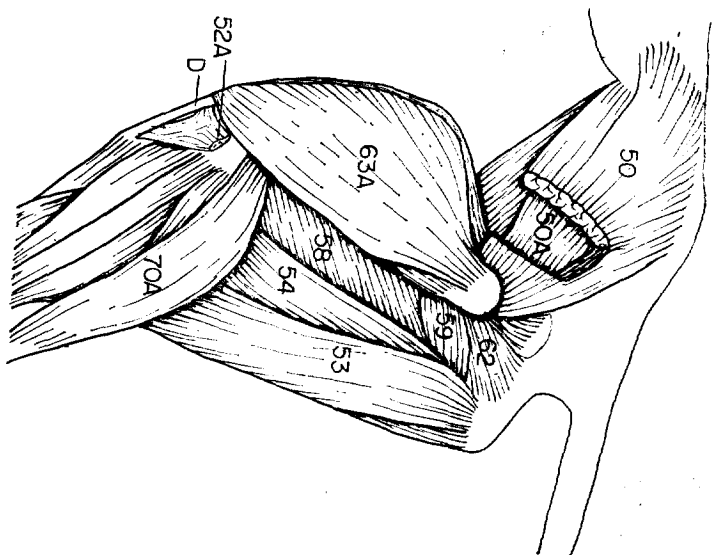


Fig. 4.

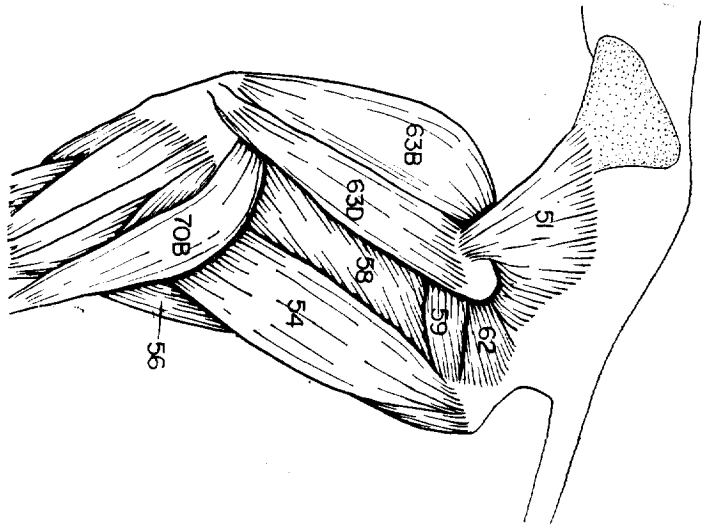


FIG. 5.

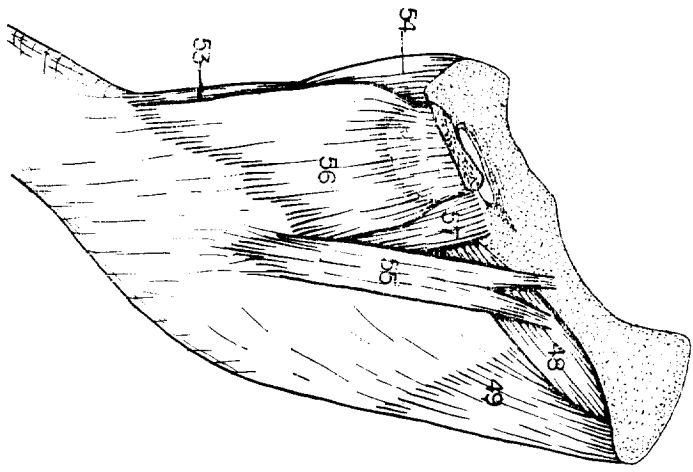


FIG. 6.

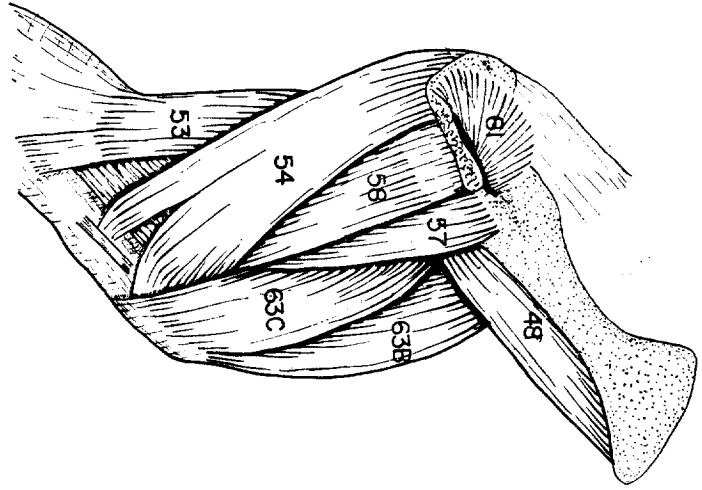


FIG. 7.

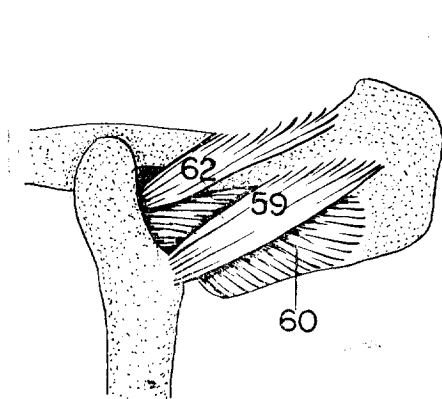


Fig. 8.

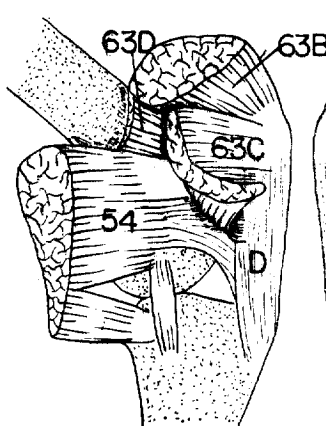


Fig. 9.

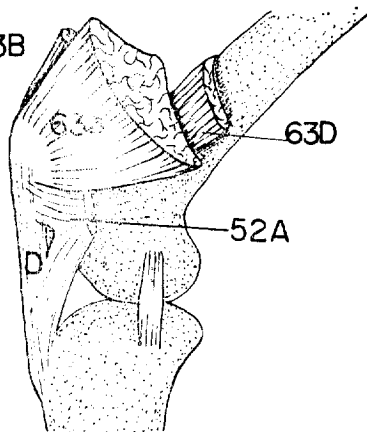


Fig. 10.

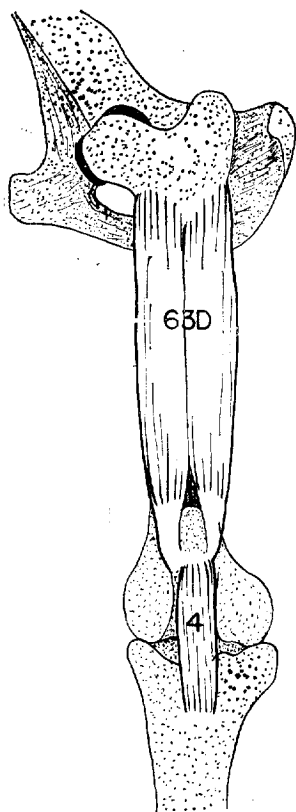


Fig. 11.

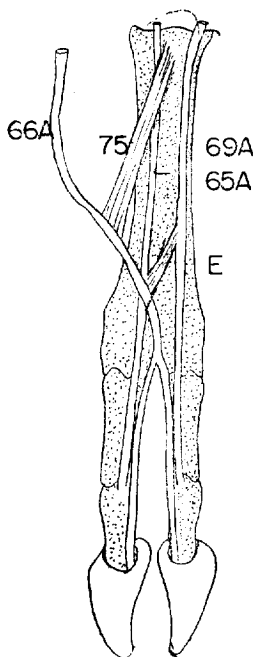


Fig. 12.

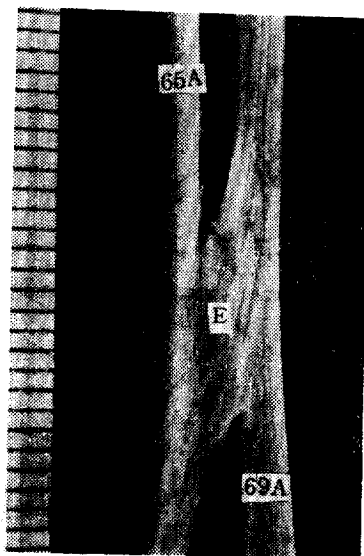


Fig. 13.

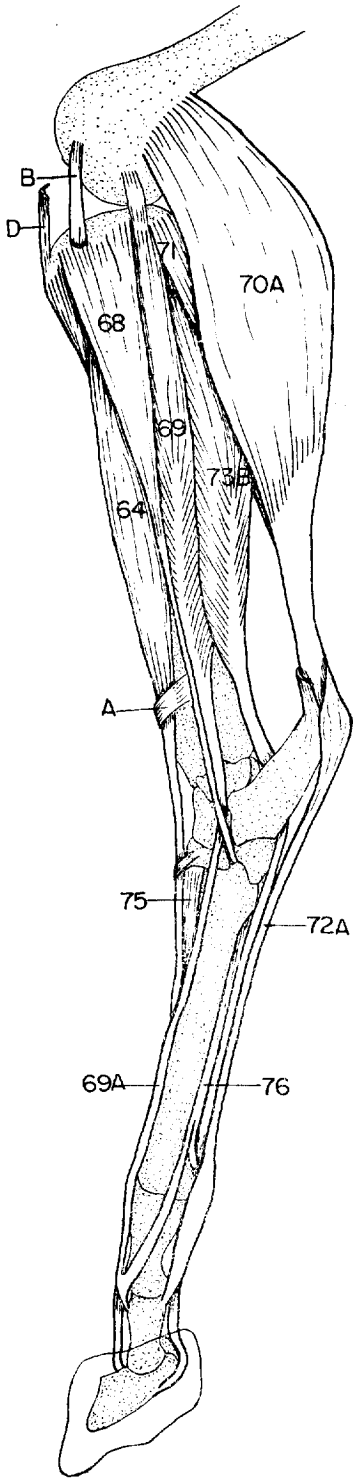


Fig. 14.

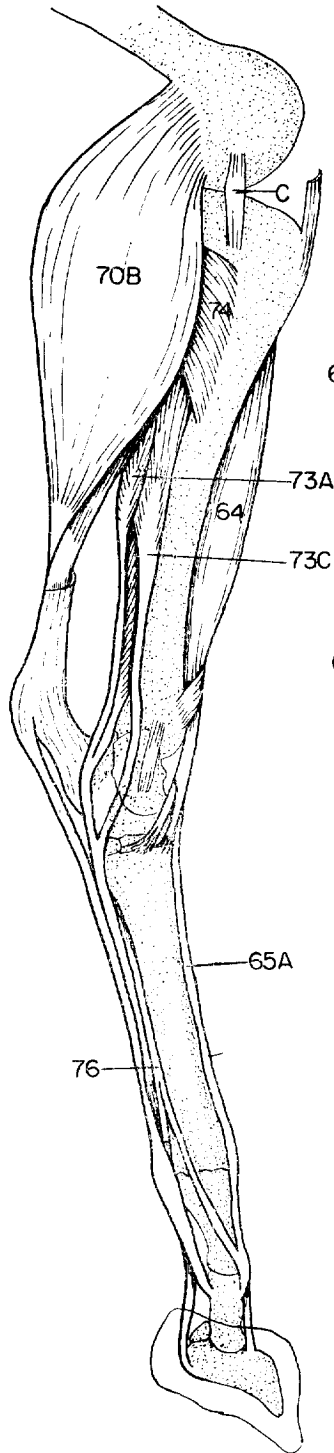


Fig. 15.

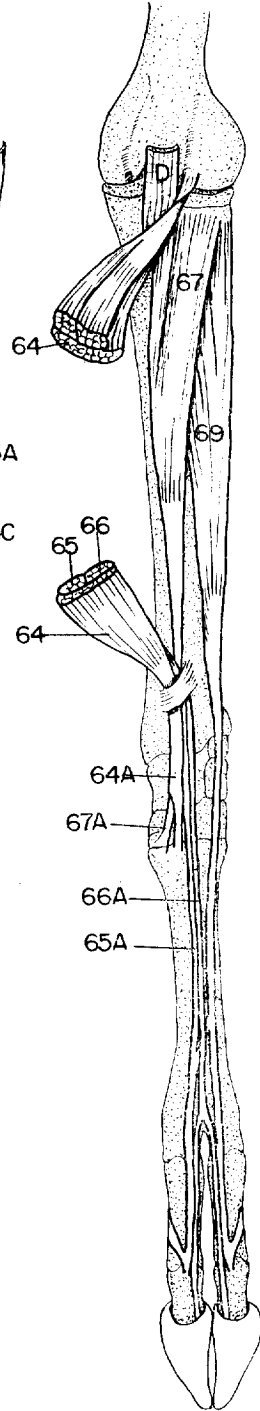


Fig. 16.



Fig. 17.

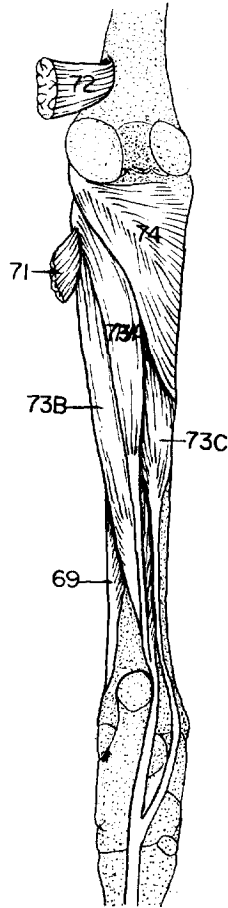


Fig. 18.

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韓國在來山羊의 比較解剖學的 研究

4. 後肢筋에 관하여

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초 록

韓國在來山羊 12마리의 後肢筋을 절개하여 관찰하였던 바 다음과 같은 결과를 얻었다.

1, 韓國在來山羊의 後肢筋에서는 다음과 같은 筋들을 관찰할 수 있었다: 小腰筋 M. psoas minor, 大腰筋 M. psoas major, 腸骨筋 M. iliacus, 腰方形筋 M. quadratus lumborum, 大腿筋膜張筋 M. tensor fasciae lata, 中臀筋 M. gluteus medius, 深臀筋 M. gluteus profundus, 臀二頭筋 M. gluteobiceps, 半腱樣筋 M. semitendinosus, 半膜樣筋 M. semimbranosus, 縫工筋 M. sartorius, 薄筋 M. gracilis, 恥骨筋 M. pectineus, 內轉筋 M. adductor, 大腿方形筋 M. quadratus femoris, 外閉鎖筋 M. obturatorius externus, 內閉鎖筋 M. obturatorius internus, 雙子筋 M. gemelli, 大腿四頭筋 M. quadriceps femoris, 第三腓骨筋 M. fibularis tertius, 內側趾伸筋 M. extensor digitorum medialis, 長趾伸筋 M. extensor digitorum longus, 前脛骨筋 M. tibialis cranialis, 長腓骨筋 M. fibularis longus, 外側趾伸筋 M. extensor digitorum lateralis, 腓腹筋 M. gastrocnemius, 가제미筋 M. soleus, 淺趾屈筋 M. flexor digitorum superficialis, 深趾屈筋 M. flexor digitorum profundus, 膝窩筋 M. popliteus, 骨間筋 M. interosseus medius.

2, 淺臀筋의 前部는 大腿筋膜張筋과 융합된 것 같고, 後部는 大腿二頭筋과 융합된 것 같다. 그러나 淺臀筋의 後部와 大腿二頭筋이 결합된 것으로 생각되는 부분에는 完全융합이 일어나지 않고 淺臀筋을 區分할 수 있을 정도로 표면으로 2筋을 分離할 수 있었다.

3, 外側趾伸筋과 內側趾伸筋의 腱은 附前骨의 遠位 1/3部에서 서로 腱膜性띠에 의하여 서로 연결되었는데, 이 腱膜性 띠는 腱纖維의 方向으로 보아 外側趾伸筋의 腱에서 分離되어 나온 한 가지(branch)가 內側趾伸筋의 腱으로 이행되고 있었다.

4, 羊에서 볼 수 있는 梨狀筋 M. piriformis 과 長母趾伸筋 M. extensor hallucis longus 은 나타나지 않았다.