

قسم : التشريح والهستولوجيا •
كلية الطب البيطري - جامعة أسيوط •
رئيس القسم : أ.د. حلمي محمد بدوي

دراسات تشريحية راديولوجية على الأكياس الزلالية

لمنطقة الركبة في الحمار

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أجري هذا البحث على عدد واحد جنين وآخر مولود حديثا وثلاثة حيوانات صغيرة و ٣٥ حمارا بالغاً ذات أعمار وأجناس مختلفة • وقد اعدمت هذه الحيوانات عن طريق قطع الشريان السباتي العام ثم حقنت بمادة الفورمالين ١٠% ، ولدراسة المواصفات التشريحية حقنت الأكياس الزلالية بمادة المطاط وكذلك مادة الباريوم (٤٠%) ومادة اليوروجرافين •

وتم في هذا البحث حصر الأكياس الزلالية لمنطقة الركبة في الحمار وتم دراسة الوصف التشريحي لها وذلك بتحديد موقعها وشكلها وعلاقتها بالتركيب المجسورة وتقدير حجمها وتحديد أنسب مكان لحقنها جراحيا ومقارنتها ومثيلاتها المختلفة ، وقد وجد أن الأكياس الزلالية للركبة في الحمار وهي :-

الكيس الزلالي تحت اللفاف القبل رضغي، وتحت وتراند غام العضلة المستقيمة الفخذية والعضلة الوسيعة الانسية والكيس زلال العضلة الوسيعة الوحشية وتحت الوتر القاصي للعضلة ذات الرأسية الفخذية والجزء الدني للرباط الرضغي الأوسط والوحشي والجزء الداني والقاصي للرباط الجانبي الوحشي للمفصل الفخذي القصبي وكيس زلال تحت وتر العضلة نصف وتريية •

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ANATOMICAL AND RADIOGRAPHIC STUDIES ON THE SYNOVIAL BURSAE OF THE STIFLE REGION IN DONKEY

(*Equus asinus*)
(With Two Figures)

By

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SUMMARY

The stifle region has a large number of bursae. These bursae are small in size and include: B. subfascialis prepatellaris, the subtendinous bursa of the tendon of insertion of M. vastus medialis, the subtendinous bursa of the tendon of insertion of M. rectus femoris, the bursa of M. vastus lateralis, B. subtendinea M. bicipitis femoris distalis, B. infrapatellaris proximalis lig. patellae intermedium, B. infrapatellaris proximalis lig. patellae laterale, the proximal subligamentous bursae of lateral collateral ligament of the femorotibial articulation, the distal subligamentous bursa of the lateral collateral ligament of the femorotibial articulation and B. subtendinea M. semitendinosi.

INTRODUCTION

The bursa and tendon sheaths of the horse were first studied systematically by EICHBAUM (1883), but nothing were given about those of donkey until now. Therefore, the object of the present work is to study the characteristic features of the bursae of the stifle region including their position, shape, relations, site of injection and their relation with the joint capsule.

MATERIAL and METHODS

This work was carried out on one fullterm fetus with C.V.R.L. 78 cm, one newlyborn, 3 young and 35 donkeys of different ages and sexes. The animals were bled through the common carotid artery, injected with 10% formalin and were subjected to different techniques for studying the morphology of the bursae, using Gum milk (latex) and Radioopaque materials.

The nomenclature used in this work is that adopted by the N.A.V. (1983) when possible.

RESULTS

B. subfascialis prepatellaris :

This bursa is recorded in all examined adult specimens. It was not observed in fetus, newlyborn and young donkeys. It is subfascially located above the tendon of insertion of the cranial part of M. biceps femoris on the patella. The latex cast of this bursa appears triangular in outline with its base directs proximolaterally. Its long axis directs obliquely, distally and medially. It measures about 2.4 cm mediolaterally and 2 cm proximodistally. Its deep surface is adapted to the underlying tendon of insertion of the cranial part of M. biceps femoris.

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The subtendinous bursa of the tendon of insertion of M. vastus medialis :

This bursa was recorded in 14 examined specimens. It is situated between the tendon of insertion of M. vastus medialis and the fibrocartilage of the patella (1/7). Its latex cast is small in size, measures about 1.5-2 cm mediolaterally and about 1 cm proximodistally.

The subtendinous bursa of the tendon of insertion of M. rectus femoris :

In the present work this bursa was demonstrated in 17 examined specimens. It is situated between the tendon of insertion of M. rectus femoris and the patella (1/1). The latex cast of this bursa is small in size with its axis directed mediolaterally. It measures about 1.6 cm mediolaterally and 0.9 cm proximodistally. Its proximal border is thick while the distal one is thin. The cast is adapted superficially to the tendon of insertion of M. rectus femoris and deeply to the patella.

The bursa of M. vastus lateralis :

In 4 cases a small bursa was observed lying between the M. vastus lateralis and the lateral ridge of the trochlea of the femur. Its latex cast measures about 1.5 cm proximodistally and 1 cm craniocaudally. The superficial surface of the cast is convex while its deep surface is concave.

B. subtendinea M. bicipitis femoris distalis :

This bursa is observed in all examined specimens, between the tendon of insertion of the cranial part of M. biceps femoris and the patella. When the bursa is injected with latex and hardened in situ, it appears small, quadrilateral in outline. It measures about 1.7 cm proximodistally and 1.5 cm mediolaterally.

For injection of this bursa, the proximal part of the lateral patellar ligament must be first palpated, then the needle is introduced obliquely 3 cm above the attachment of the ligament through the tendon of insertion of the cranial part of M. biceps femoris.

The proximal subligamentous bursa of the lateral collateral ligament of femorotibial articulation:

In all examined donkeys a subligamentous bursa is interposed between the proximal part of the lateral collateral ligament of the femorotibial articulation and the tendon of origin of M. popliteus (1/5, 2/3).

The latex cast of this bursa is small in size, oval in outline with the long axis directed horizontally. Its wide end is cranially directed. This cast measures about 2 cm craniocaudally and 1.5 cm proximodistally. Its lateral surface is flattened, smooth and lies in relation to the proximal part of the lateral collateral ligament. Its medial surface is adapted to the tendon of M. popliteus.

The distal subligamentous bursa of the lateral collateral ligament of femorotibial articulation:

Examination of all specimens revealed that a subligamentous bursa is interposed between the distal portion of the lateral collateral ligament of the femorotibial articulation and the lateral surface of the lateral condyle of tibia (1/6, 2/4).

The latex cast of this bursa is quadrilateral in outline, with length of 2 cm proximodistally and 1.5 cm craniocaudally. In one adult case this bursa communicated with the lateral sac of the femorotibial articulation through an opening on the proximal margin of the lateral condyle of the tibia and in another case the bursa was connected with the subextensor pouch.

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B. infrapatellaris proximalis lig. patellae laterale :

It is present in all examined specimens, situated between the proximal part of the lateral patellar ligament and the patella (1/2, 2/1). The latex cast appears quadrilateral in outline with about 2.1 cm proximodistally and 1.7 cm mediolaterally. The proximal part of this bursa lies under the B. subtendinea prepatellaris M. bicipitis femoris.

B. infrapatellaris proximalis lig. patellae intermedium :

In donkey the obtained result shows the presence of this bursa in all examined specimens. It lies between the proximal portion of the middle patellar ligament and the apex of the patella (1/3). The latex cast of this bursa appears quadrilateral in outline with the long axis directed transversely, and measures about 1.5 X 0.5 cm.

B. infrapatellaris distalis lig. patellae intermedium :

This bursa is observed in all examined cases, between the distal portion of the middle patellar ligament and the sulcus tuberositatis tibiae (1/4, 2/2). The latex cast of this bursa is quadrilateral in outline. Its long axis is parallel to the sulcus tuberositatis tibiae, 2.6 cm proximodistally and 2 cm mediolaterally. It was found that in donkey the bursae infrapatellariae proximalis et distalis are not communicated with the cavity of the femoropatellar articulation.

B. subtendinea M. semitendinosi :

In all examined donkeys this bursa is situated between the tendon of insertion of M. semitendinosus and the medial surface of the tibia (1/8). The latex cast appears semicircular in outline and flattened from side to side. It measures about 3 cm in diameter.

The site of injection lies about three fingers distal to the medial condyle of the tibia. The needle is introduced obliquely, caudally underneath the tendon of insertion of M. semitendinosus over the medial surface of the tibia.

DISCUSSION

The occurrence and situation of the synovial bursae of the stifle region in donkey is similar to that described in horse by SCHAUDER (1924), OTTAWAY/WORDEN (1940), BRADLEY (1946), BERG (1973) and SEIFERLE/FREWEIN (1986). Concerning the bursa at the tendon of insertion of M. rectus femoris, bursa at the tendon of insertion of vastus medialis and the bursa under the distal attachment of the lateral collateral ligament of the stifle joint, the before mentioned authors only mentioned its location but did not give a definite name or description. The present work fully described the bursae and the suggested names to these bursae are: B. subtendinea suprapatellaris M. recti femoris, B. subtendinea suprapatellaris M. vastus medialis and B. subligamentosa distalis lig. collaterale laterale respectively.

From the clinical point of view, the B. subfascialis prepatellaris is situated subfascially in front of the patella, which gives it a great tendency to injury, display and affection. These suggested causes are in agreement with that stated in horse by O'CONNOR (1958).

Concerning the B. subtendinea M. bicipitis femoris distalis, M'FADYEAN (1922) and SISSON (1975) mentioned that in horse a bursa is situated underlying the patellar insertion of the cranial part of M. biceps femoris a result which is in agreement to that observed in donkey. On the other hand, SKERRITT/McLELLAND (1984) mentioned that in ox a bursa lies between the tendon of insertion of M. biceps femoris and the lateral epicondyle of the femur and is often inflamed. A communication may exist between this bursa and the femorotibial joint, a result which was not observed in donkey.

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The occurrence and situation of both bursa infrapatellaris proximalis et distalis lig. Patellae intermedium in donkey is similar to that recorded in horse by M'FADYEAN (1922), SCHAUDER (1924), BERG (1973). However NICKEL/SCHUMMER/WILLE/WILKENS (1986) denote that in cattle there is only the bursa infrapatellaris distalis.

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LEGENDS

Figs. (1 & 2): Latex casts and radiographs showing the subtendinous and subligamentous bursae of the stifle region.

- 1- B.subtendinea suprapatellaris M. recti Femoris.
- 2- B. infrapatellaris proximalis lig. patellae laterale.
- 3- B. infrapatellaris proximalis lig. patellae intermedium.
- 4- B. infrapatellaris distalis lig. patellae intermedium.
- 5- B. subligamentosa proximalis lig. collaterale laterale.
- 6- B. subligamentosa distalis lig. collaterale laterale.
- 7- B. subtendinea suprapatellaris M. vastus medialis.
- 8- B. subtendinea M. smitendinosi.

MEMORANDUM

TO: THE PRESIDENT
FROM: THE SECRETARY OF DEFENSE
SUBJECT: [Illegible]

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2. [Illegible]

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Fig. 1

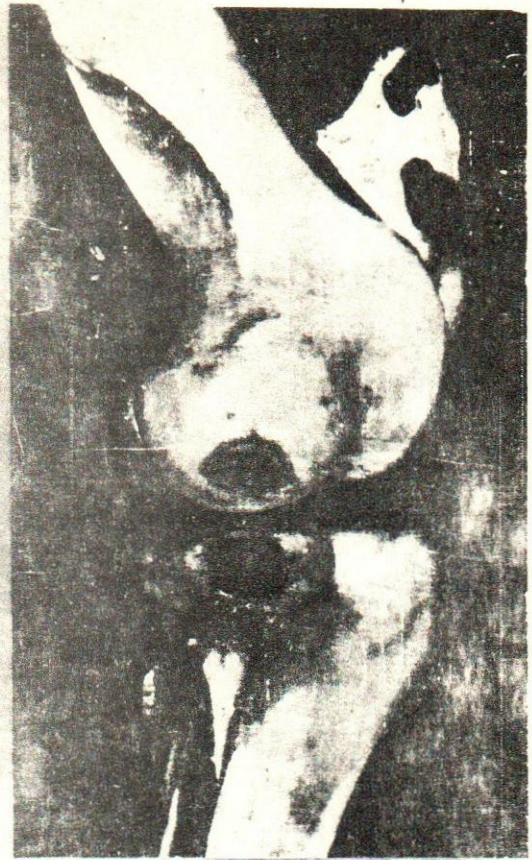


Fig. 2

