

A16-17 Vaginae et bursae synoviales of the equine fore-, and hind limb

***Since the opening first parts of the two topics are identical, we merged them for this elaboration. Theoretically the interspecies differences are not included into these topics, but – just to make sure – we highlighted the major differences, as the examiner may ask about them and as they may be interesting for different topics. This current elaboration is based on the requirements of the topic list published in 2019 for the Anatomy final oral exam of the University of Veterinary Medicine, Budapest; it does not include all possible corresponding structures, only the ones that are anatomically or clinically significant. ***

SOME ACCESSORY STRUCTURES OF MUSCLES:

recessus: dilatation of the joint capsule (“recess”; not included into the topic)

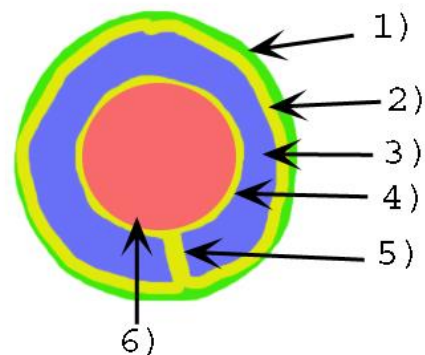
retinaculum: technically a thickened part of the *fascia*, which participates in fastening the tendons without synovial layer (not included into the topic)

bursa: closed cavity that contains *synovia*

- *str. synoviale*
- *str. fibrosum*
- soma *bursa* may communicate with the cavity of a nearby joint
- major role is padding
- types:
 - *bursa synovialis submuscularis* – under a muscle
 - *bursa synovialis subfascialis* – under the fascia
 - *bursa synovialis subtendinea* – under the tendon
 - *bursa synovialis subcutanea* – under the skin

vagina synoviales – tendon sheath

- general structure: see image
 - 1): *stratum fibrosum*
 - 2): *stratum synoviale parietalis* [lamina externa]
 - 3) *cavitas synovialis*
 - 4) *stratum synoviale visceralis* [lamina interna]
 - 5) *mesotendineum* – the blood-, and nerve supply of the tendon runs through this
- some tendon sheaths may communicate with the cavity of a nearby joint
- role: padding, providing sliding surface, nutrition
- *vagina synoviales communis* – contains more tendons



ON THE FORELIMB:

Bursa subligamentosa supraspinalis

- between the *lig. nuchaellig. supraspinale* and the spinal process of the first few thoracic vertebra (Th. 2-5)
- participates in the formation of the withers and in carrying the saddle load

Bursa subcutanea prescapularis: between the skin and the *spina scapulae*

Bursa intertubercularis

- in the *sulcus intertubercularis*, under the originating tendon of the *m. biceps brachii* (origin: *tub. supraglenoidale*)
- **does NOT communicate** with the shoulder joint (!)
- in canine there is a tendon sheath instead (*vagina synovialis intertubercularis*), which **communicates** with the shoulder joint

bursa subcutanea olecrani: between skin and *olecranon*

bursa intratendinea olecrani: between *m. triceps brachii caput mediale* and *caput longum*

bursa subtendinea m. tricipitis brachii: between the inserting tendon of the *m. triceps brachii* and the *olecranon*

On the extensor side of the carpal joint: all muscles are running through in their own tendon sheath (e.g.: *vag. tendinis m. ext. carpi rad.*), in the corresponding groove of the distal cranial part on the *radius* (e.g.: *sulcus tendinis m. extensor carpi radialis*)

On the flexor side of the carpal joint:

canalis carpi – carpal channel

- not a direct part of the topic but it must be explained in order to understand it
- bony base: the proximal row of the *carpus*
- the *retinaculum flexorum* closes it to be a channel through which the digital flexors run through

vagina synovialis communis mm. flexorum – proximal common tendon sheath

- in the carpal channel
- fastened by the *retinaculum flexorum*
- contains the tendon for both digital flexors [*m. flexor dig. superficialis et profundus*]
- includes the palmar, final portion of the *a. mediana* [continuing as *a. dig. palmaris comm. II.*]
- includes the *n. palmaris medialis* [*n. digitalis palmaris comm. II, ex n. medianus*]

vagina tendindegum digitorum manus – distal common tendon sheath

- behind the fetlock joint, on the surface of the *scutum proximale*
- fastened by the *lig. anulare digiti*
- contains the tendon for both digital flexors [*m. flexor dig. superficialis et profundus*]
- contains the *manica flexoria* (the superficial digital flexor's tendon surrounds the deep digital flexor's tendon)

bursa subtendinea m. extensoris digitorum communis: between the *m. ext. dig. comm.* and the fetlock joint

bursae subtendineae mm. interosseorum manus: under the *tractus appositus* (ex *m. interosseus medius*) on both sides, at the ventral lateral/medial margins of the fetlock joint before they merge with the *m. extensor digitorum communis*

bursa podotrochlearis manus [Braueli]: between the *m. flexor digitorum profundus* and the distal sesamoid bone

ON THE HIND LIMB:

bursa subcutanea trochanterica: between the skin and the *trochanter major*

bursa subcutanea iliaca [coxalis]

- between the skin and the *tuber coxae*
- has increased significance in horses
- the *a. circumflexa ilium profunda* and the *n. cutaneus femoris lat.* run next to it

bursa subfascialis prepatellaris: between the *fascia* and the *patella*

bursae subtendinae prepatellares: between the heads of the *m. quadriceps femoris* and the *patella*

bursa infrapatellaris proximalis: between *lig. patellae intermedium* and *patella*

bursa infrapatellaris distalis: between *lig. patellae intermedium* and *tibia*

bursa subcutanea calcanea: between the skin and *tendo plantaris* at the *tuber calcanei*

bursa calcanea m. flexoris digitorum superficialis [b. subtendinea calcanea]

- between *tendo m. gastrocnemii* and *tendo m. flexor digitorum superficialis*
- extends approximately one hand's with proximal over the *tarsus*
- extends approximately until the middle of the *tarsus* distally, located between the *tendo plantaris* and the *lig. plantare longum*
- in equine it usually communicates with *b. tendinis calcanei*

bursa tendinis calcanei

- between the *tendo accessorius* and both inserting tendons of the *tendo m. gastrocnemii*
- in equine it usually communicates with *b. calcanea m. flexoris digitorum superficialis*

On the flexor side of the *tarsus*: all *tarsus* flexors and digital extensors run in their own tendon sheath (in canine, the *m. ext. digitorum lateralis* and the *m. fibularis brevis* run in a common tendon sheath)

bursa subtendinea m. tibialis cranialis [cuneal bursa]: between the medial inserting tendon [cuneal tendon] of *m. tibialis cranialis* and the inserting part of the medial collateral ligament of the *tarsus*

On the extensor side of the *tarsus*:

- *m. flexor digitorum superficialis*: the *galea calcanea* fastens it onto the *tuber calcanei*
- *m. flexor digitorum profundus*:
 - each part runs on the *tarsus* in their own tendon sheath
 - the *m. flexor digitorum profundus* is fastened by the *retinaculum flexorium*
 - the *m. flexor digitorum medialis* and the *m. tibialis caudalis* both run on the *sulcus malleolus medialis*
 - the *m. flexor digitorum lateralis* runs on the *sustentaculum tali*
- because of these, there is no need for proximal common tendon sheath

vagina tendindegum digitorum pedis – distal common tendon sheath

- behind the fetlock joint, on the surface of the *scutum proximale*
- fastened by the *lig. anulare digiti*
- contains the tendon for both digital flexors [*m. flexor dig. superficialis et profundus*]
- contains the *manica flexoria* (the superficial digital flexor's tendon surrounds the deep digital flexor's tendon)

bursa subtendinea m. extensoris digitori longi: between the *m. ext. dig. longus* and the fetlock joint

bursae subtendineae mm. interosseorum pedis – under the *tractus appositus* (ex *m. interosseus medius*) on both sides, at the ventral lateral/medial margins of the fetlock joint before they merge with the a *m. extensor dig. longus*

bursa podotrochlearis pedis [Braueli]: between the *m. flexor digitorum profundus* and the distal sesamoid bone