

Lesions of the caudal skull and proximal neck

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This lecture gives a brief overview of some of the most common lesions in these regions. Pathology can interfere with a normal posture of the neck and pol and increase or sometimes decrease the forces the horse pulls on the reins. The result of pain is that the horse can pull too much to prevent flexing but can also give unwanted behavior like bucking, running and unwillingness to go forward.

A difficult feature are the problems in the hyoid. The most common is the arthrosis of the temporohyoid joint. A detailed radiograph is difficult to interpret due to overprojection of other structures. With ultrasound you can see only the base with the lingual process and with scopy the styloid is visible and a view on the temporohyoid joint.

CT is the golden standard to evaluate abnormalities in the hyoid bones and temporohyoid joint. Clinically a twisted neck that is worse during riding can give you an indication for problems in the hyoid when other causes are ruled out.

The temporomandibular joint is much easier to access because it is just under the skin on both sides of the head. As in other joints it can be affected by arthrosis due to cartilage and meniscus damage. Both joints have one meniscus each and is the only joint, besides the stifle, that have a meniscus.

Fragmentation too can be a cause of joint damage. Because of the outward position just under the skin the joints are easily traumatized as the head is stuck between firm materials. Wounds and infected joints are therefore not uncommon. The joint is much easier to access by ultrasonography than by radiographs although in both modalities the axial part cannot be made clearly visible. CT can give more information about that part. On CT small to moderate sized cystlike lesions are commonly seen without clinical relevance. Clinical signs can differ from uneasiness on the reins and/or bit to a twisted head and sometimes bucking and rearing. A grunting or soft cracking sound can sometimes be heard. Don't mess that up with the grinding sound of teeth.

Another structure that can be affected is the inner ear and the balanced organ. Due to an ascending infection or in many rare cases trauma damages of this regions can lead to neurologic signs like hanging lips and ears, dry eyes or drooping eyelids. Gait alteration because of balance problems is often noticed when the semilunar canals are affected by infection.

Problems in the pol can give similar signs. In most cases lack of flexion and pain during flexion of the pol is the most apparent clinical appearance.

There are several structures that can be affected. The nuchal ligament on its attachment on the occiput can be irritated. Remodeling can be seen on radiographs, but clinical significance has to be confirmed by local infiltrating blocks, because 90% of the horses has mild to moderate changes without any clinical sign.

More common is the tendinopathy of one of the two tendons of the semispinous muscle. The cause is generally overflexion although trauma from outside by the halter is sometimes in history. Because degenerative changes can lead to mineralization that can be seen on radiographs. Those cases are mostly in a chronic stage. Tendinopathy without mineralization is only seen by ultrasound, therefore evaluation of neck problems cannot be done by radiographs alone. Ultrasonography is an essential part of it. Absprengfractures of the occiput by the semispinal tendon should be considered if there is local pain which occurs in acute cases, restricted flexion and asymmetrical discomfortability on the reins.

Other soft tissue problems in the pol are degenerative changes in the muscle. They can also lead to mineralization but swelling and pain are the first signs for pathology. Horses with swelling/hypertrophy of muscle in that region are strongly suspected for proximal neck problems. Muscle degeneration can be easily seen with ultrasonography. That is also the case with fibroses in the muscles with a preferred localization where the cranial oblique capitis muscle is attaching on the atlas.

A common issue in the proximal neck is the bursitis of the cranial nuchal bursa. Because of the fact that clinical signs are apparent in a late stage of the disease it is important that every swelling, even without any clinical signs, is evaluated by ultrasonography. Once there is a chronic bursitis, total healing is impossible. The visible swelling is normally soft, bigger on one side but can be pushed away to the other side. Ultrasonography is the golden standard for evaluation of the content, thickness of the capsule and involvement of the nuchal ligament. Mineralisation in the capsule as a result of chronic overstretching is common. In earlier stages a injection with corticosteroids in considerable but in chronic stages that is not enough. Bursoscopy with debridement and curettage of the capsule followed by injections of IRAP or corticosteroids is then more advisable. But even in clinical sound cases a remnant of the effused bursa remains visible. In normal horses the bursa is not visible at all on ultrasound.

A less common lesion is a desmopathy of the ligament between the occiput and the atlas. Good quality ultrasonography can reveal this disease. It can be treated as every other ligament. Trauma can be a reason for fracture of the bone parts of the skull and pol and can clinically suspected and confirmed by radiographs.

Subluxation of the atlantooccipital joint as shown in the lecture is very rare and is added for its interesting imaging.

In conclusion we can say that caudal skull and cranial neck problems can be clinically suspected, confirmed by radiographs and a key role for ultrasonography. In some pathology a CT is the clue.

Figure 1. Hyoid bones.



Figure 2. CT of arthrotic TH joint.



Figure 3. Septic TMJ.



Figure 4. US of septic TMJ.



Figure 5. US normal SS tendon.

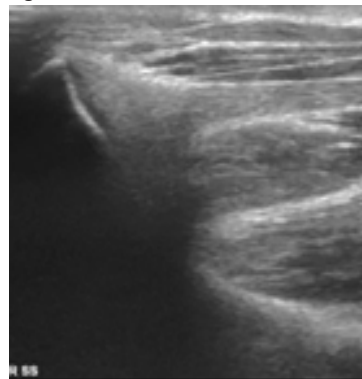
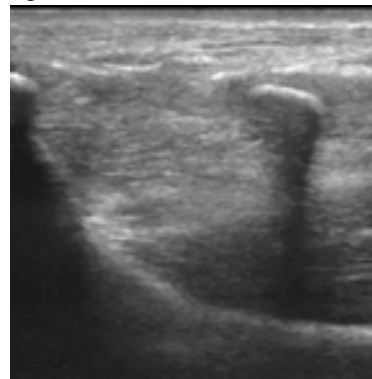


Figure 6. Mineralisation SS tendon.



Figures 7 and 8. Normal and desmitis atlanto-occipital ligament.

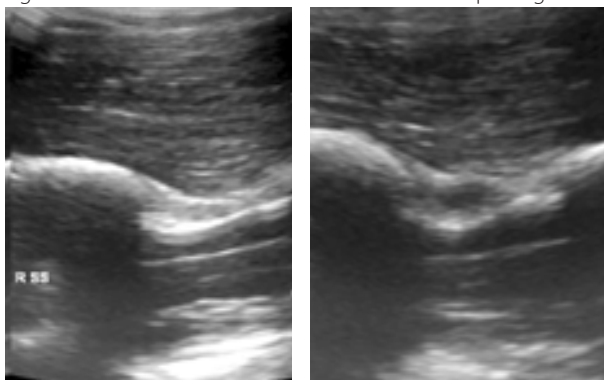


Figure 9. Fibrotic changes m.capitis.



Figure 10. Bursitis cranial nuchal bursa.

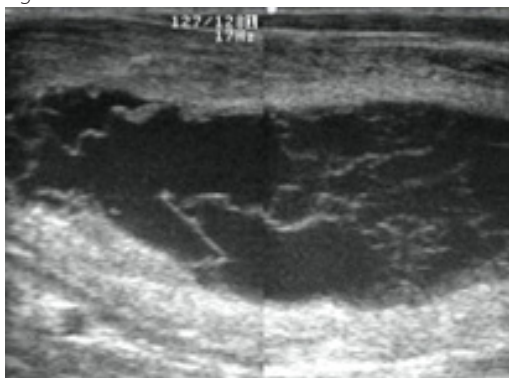
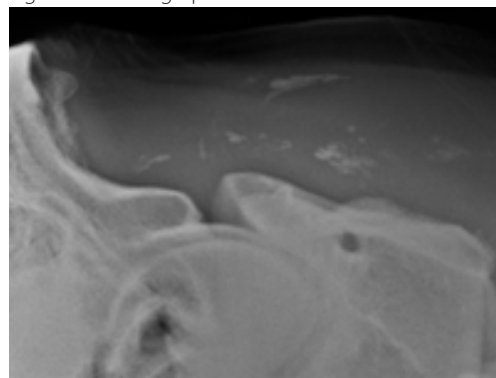


Figure 11. Radiograph nuchal bursitis.



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