

**Equine Sports Massage
Case Study #1**

February 14-April 9, 2007

Quarab Gelding

15.1 hh

Age 10

Excellent body condition

Poor muscular/skeletal condition

- **Usage:** Very light to extended periods of non-usage.
- **History:** Purchased by present owner from a man who was ill and needed to sell the horse. Long-term history unknown.
- **Miscellaneous:** Client is a kind horse and has a willing but shy demeanor. He has an issue with his head and is especially mindful of the area behind his ears. As a result, horse will raise his head high when the halter strap touches the neck. However, he will bring his head down willingly for leading.
- **Muscular/Skeletal:** Client needs help in this area. After being in a stall for any period of time; long or short, he emerges one painful step at a time, with head down and very sore from head to tail to feet. There is also very limited bend to the body from neck to tail.
- **General Information:** The ranch where the horse is stabled consists of about 15 acres of land fenced on the perimeter by various types of material, none of which is considered livestock safe. The ranch does not have pastures, corrals or runs for turnouts. Horses are put out on a pole for up to 9 hours during the day for self-exercise.

The pole is perpendicular to the ground and has an arm at the top that rotates when the horse walks. The horse is tied to the arm by a metal chain. The horse cannot bend its neck to scratch its body nor can the horse put its head down. In short, the horse's head and neck are kept at a certain level for hours at a time, sometimes at a height that is inappropriate for the horse.

PHOTOGRAPH CONFORMATION ANALYSIS

(Click on the link below each photo to view larger images.

Note: Must have active internet connection to view larger images.)

FRONT

- Feet, knees and legs are crooked. Horse carries himself in a base-narrow manner, thereby putting stress on the medial joints/muscles/tendons of the internal and external fetlock region. Because this horse has a “toe out” way of going, the foot will swing inward and could cause gait interference.
- Feet are contracted, being long and tubular, not round and able to bear weight equally and evenly. Observe the coronet bands that are not horizontal to the ground but running at a slant to the surface. Horse has a high, outside hoof wall and low, inside hoof wall.
- The cannons and forearms are almost of equal length and are not made of dense bone. A proper length of cannon would be much shorter than what this horse has.
- The client has bench knees, meaning that there is torque and stress being applied from the inside of the knees medially to the fetlock.

http://www.texasequinmassage.com/cases/CS1_0466.jpg



REAR

- Feet, hocks, gaskins not in alignment. Legs in the gaskin area appear bowed ().
- Tail is held to the left.
- Horse is not level across the croup with the left side being higher than the right.

http://www.texasequinmassage.com/cases/CS1_0467.jpg



NEAR SIDE FRONT

- Not shown in this photograph but horse tends to stand camped-out when tied and when in his stall, creating stress in the pastern, fetlock and stifle areas.
- The front feet have low heels and long toes as well as a short pastern that is upright. This type of pastern will create stress in the fetlock joint and the navicular bone because there is no way for a shock absorber effect to occur when the foot hits the ground. Long toe/short heel also tends to create a long stride in the horse which is not an efficient way of moving.
- The rear feet have a low heel and long toe as well as a long pastern. Note that the front pastern is short by comparison.
- The shoulder, like the pastern, is upright. This means that there is also more of a concussive force when the foot hits the ground.
- The neck on the near and far side has a large circular area in front of the scapula that is fibrous in nature. The neck also has a dip in front of the withers.
- The hindquarter does not have a near perfect triangle. Biomechanically, this means that there is a lesser degree of balance and a loss of movement. Looking at the legs and the hindquarter as a whole, you will see that the cannons are much higher than knees, which puts more stress on the front end of the horse. The gaskins are also very straight and “light”. The semitendinosus and semimembranosus have no shape. They are rather straight and create a “pork chop” hindquarter that cannot give good impulsion or collection.
- Client’s back is also extremely short with high withers. Any saddle will be hard to fit and make the horse uncomfortable and sore especially in the withers and scapula areas. The front of the saddle with the added weight of a rider means that the saddle will either rest on the scapula or just behind it, limiting motion and creating muscle soreness.

http://www.texasequinmassage.com/cases/CS1_0478.jpg



OFF SIDE

- Showing lack of a center of gravity. The horizontal line should go from point of shoulder to stifle. Because the horse is butt-high, the line tends to run high towards the rear of the horse.
- The vertical lines drawn from wither and tuber coxae to the horizontal line shows that the horse does not have a balanced center of gravity.
- The vertical lines show that he is front heavy and rear light, meaning that the forelimbs are at their capacity, if not past it, for bearing the load of the horse. This in turn greatly affects the musculoskeletal system as a whole.



http://www.texasequinemassage.com/cases/CS1_0473.jpg

TOP LINE

- The left side of the neck shows a slight bulge. And while the neck is relatively straight in the photograph, it appears that the left side of the neck is “longer”, meaning that tight muscles on the right side of the neck are pulling the neck to the right.
- The right shoulder also appears to be bulkier than the left shoulder area.
- The right loin/gluteal area also shows more bulk and the line across the croup is not level.



Notes

Biomechanical, gait and conformation analysis from *Illustrated Atlas of Clinical Equine Anatomy and Common Disorders of the Horse, Volume 1.*

http://www.texasequinemassage.com/cases/CS1_0523.jpg

DISCUSSION
2/14/07-4/9/07

2/20/07

First session

Walk/jog evaluation form shows client in overall distress. He cannot track evenly and there is not a nice, rocking motion in the hindquarter. Limbs are restricted in lateral and forward movement, making a supple turn impossible. The client's barrel is not even nor is the stride even, with a poor flight arc of the feet. Overall, the client at walk and trot shows signs of extreme body stress.

This session's work uncovered small amounts of spasms in the off side neck/brachiocephalic region and along the back (longissimus process from rib heads to medial plane). Deep body work uncovered hard spasms at the base of the neck where the brachiocephalic muscle originates and inserts. Cross-fiber friction applied to this long muscle from bottom to top revealed the spasms.

Session ended with manual stretching of legs as well as stretches of the neck to the knees and sides. Body worker observes that neck stretches are painful to the client. Walking of the client performed followed by turnout within the ranch compound.

Note: The ranch does not have paddocks for turnout. Horses are tied to poles as cited in the introduction. This particular client has been turned loose within the compound since 2/14/07, when it was observed that a muscular problem was affecting his ability to walk.

3/2/07

Second Session

Walk/jog evaluation unchanged since session #1. This evaluation shows an "ouchy" and choppy stride, more so than the last time. The client's neck muscles from nuchal ligament to brachiocephalic and splenius are very hard to the touch. The client does walk better on pavement than last time. The client is very stiff when coming out of his stall each morning. Body worker notices this session that at the walk and trot the front and back feet swing in toward each other. This is plaiting, caused by a base narrow, toe out condition. Body worker concludes that this condition, along with bench knees, is causing malfunctions in joint, tendons and muscles in the front end of the client. It is also noted that the left pecs, superficial gluteals and gaskins are enlarged, along with the left barrel of the horse showing when the client is standing square. The rib cage itself also seems very tense throughout.

This session's body work resulted in strong releases at the cheek/masseter area and at the TMJ juncture. The hard spasms along the brachiocephalic from origin to insertion still exist. Light to deep work at the superficial pectorals, including circular and deep cross-fiber friction caused the client to perform extreme head bobbing with jaw clicking and the tongue emerging to a great length. The deeper work continued towards the olecranon on each side of the client.

Strong spasm were presented when deep work was performed along the caudal aspect of the scapula where the latissimus dorsi crosses over the body of the ribs before it inserts into the teres major tuberosity of the humerus. Two-handed cross-fiber work over and along the latissimus dorsi resulted in very heavy releases by the client. Upon reaching the superficial gluteals, the client offered this section to the body worker. Leg stretches performed after the session with releases observed. Neck had a difficult time performing a stretch to the off side.

After session movement by the client shows better tracking and freer movement at the walk and trot, which has not been observed in the client until this time.

**3/14/07
Session 3**

Walk/trot evaluation shows no improvement since last session. Limbs are restricted and the left side of the client shows distress with the left hip high, uneven stride and tail pointing. At the trot the held is held uncomfortably low and the client's eyes show pain. There is also head bobbing at the trot when each forefoot touches the ground.

Stress Point Session this date.

SP1 Rectus Capitus Lateralis When pressure was applied to this point, horse lowered his head to his knees and began extreme jaw chewing and twisting of the head. There was a release when the horse raised his head and shook it.

SP's 4-6 Rhomboids and Trapezius

SP's 2-3 Brachiocephalicus and Multifidus Cervicus

SP 13 Forward attachment of Longissimus Dorsi

SP's 7-10 Supraspinatus, Infraspinatus, Serratus Thoroacis, Upper end of Triceps

The above points all affect the front- end movement/motion of the horse. Tightness in these areas reduce movement of the head from side to side, rotation of the head, drawing forward of the scapula and elevation of the shoulder (as well as drawing the scapula back), extension of the shoulder joint, abduction of the front legs, flexing of the shoulder and the ability of the back and loins to flex laterally. The horse exhibited signs of head bobbing and tongue licking, as well as the elevation of the front feet in order to paw (stretch) the limb forward.

SP's 21-24 Tensor Fascia Latae, Iliacus, Gluteus Accessorius, External Oblique, which flex the hip and extend the stifle, rotate thigh outward and flex the trunk laterally. Pressure applied to these areas resulted in a dropped head and dropped penis (which dripped a foul odor) followed by a heavy sigh at the release in these areas.

Pressure applied to other points (non-highlighted areas on chart) did not result in an action/reaction by the client.

Walking and trotting after the session produced movements that were as stilted as at the beginning of the session. The horse was then turned out to graze.

The next morning when the horse was let out of his stall, he trotted a few steps and began grazing. That afternoon, the horse played a game and did not want to be caught for dinner. He trotted and then ran and bucked when the body worker approached.

**3/27/07
Session 4**

The walk evaluation shows the rear feet over-striding the front. Limbs show restricted movement, especially in both front shoulders when the horse is asked to turn to the right and left. When the horse walks, the back feet almost crossover one another when they are placed on the ground.

The trot evaluation shows a lame horse in the front, appearing to be lame in both front feet as indicated by head bobbing. The flight arc as a result of the lameness is short and choppy. It has been recommended to the owner that the horse's feet be trimmed.

Note: Client is no longer allowed to roam the compound because it is said that he bothers other horses that are tied to their poles. Apache is now tied again during the day, resulting in setbacks to the therapy.

This session's work reveals an extremely tight neck. Work along the omohyoids and brachiocephalicus on each side produce severe spasms within the neck and the superficial pectorals. The client's longissimus dorsi (originating at the spines of the sacral, lumbar and thoracic vertebrae and the supraspinous ligament) produced spasms when cross-fiber friction was applied to the withers to the superficial gluteals at the rear of the horse. Stripping of the intercostals muscles between the ribs produced heavy spasms at T17-T18 from rib head to the base of the rib.

There is a Stress Point location at the top of T18 which affects the Longissimus Costarum which can affect lateral bending and which often develops secondary to a back problem, or, it may refer its tightening into the back (the longissimus dorsi).

Another Stress point location in this area, #25, affects the External Oblique muscle, whose action is to flex the trunk and to flex the trunk laterally.

After this session the horse shows no improvement at the walk or trot. Stretching of the limbs and neck require great exertion by the horse.

DISCUSSION
4/10-5/31/07

SESSION 1
4/10/07

The walk evaluation shows an even barrel. Everything else is negative: the horse is leaning back and overstriding at the same time, there is restriction in the limbs, there is no suppleness and asking the horse to turn seems to only cause more pain.

The horse refuses to trot and the few steps he does trot shows and uneven stride and a very uncomfortable front end as he pulls back and leans back. Head bobbing verifies the presence of soreness, but where?

This session's work consisted of trying to make the client feel good without trying to overtly "fix" a problem. The hands and fingers need to see and feel where pain and tightness is being generated from. Any uncomfortable areas were treated with moderate compressions as well as cross-fiber work and jostling.

The top line of the neck, the nuchal ligament is getting much tighter. Therapist was able to affect some release but not much. It can be assumed that standing tied to a pole daily only exacerbates the neck issues.

Tripceps work caused some pectoral quivering on the left front. Compressions along the longissimus dorsi caused releases as well as work to the tuber coxae's and the superficial gluteals. Stripping the fascia lines between the semitendinosous and semimembrinosous on the right hind leg caused that limb to quiver. Gentle squeezing, compression and cross-fiber work continued until the quivering subsided somewhat.

The after session evaluation shows a little freer walk, indicating that gentle work is as beneficial to the horse as is deeper work. Therapist will consider more frequent but lighter work in order to determine if this is beneficial to the client. Therapist will also begin performing leg and neck stretching on a daily basis in order to free up limbs.

SESSION 2
4/23/07

The walk/trot evaluation shows the client being "off" in the front legs. Client will not trot in a straight line or on the circle. The walk is stilted and the front feet are constantly being shifted.

Walking itself shows lack of suppleness in turns. However, the horse has good head carriage and an even barrel.

This being a very warm and sunny day, the therapist decided to perform the work with the horse turned loose but with rope attached. Deep and heavy work was performed on the client, with the only movement being small steps so that he could assist with the process.

Starting with the neck, long, heavy strokes were performed with the client exhibiting deep yawns for releases. Work along the longissimus followed the neck; again, with long-heavy releases exhibited.

Moving back to the neck area, work was performed along the cranial aspect of the scapula, where heavy stress areas has caused a “rope” of stress, which might be inhibiting the forward movement of the horse, as well as causing the shifting of the front feet.

Trigger point work along the trapezius and in the tissue above the scapular cartilage also resulted in heavy releases. The client at this point would lower his head, lengthen his neck, bob his head, move forward and then have a release.

All other areas of the body were worked but the best results occurred in the front part of the horse. After the session, Apache was turned loose to graze, roll and in general, move around for 1.5 hours before being put up for the night.

SESSION 3

5/7/07

The walk/trot evaluation still shows that the client is unwilling to trot as he still appears sore in his front feet. However, his walk seems better in the front and it is not as stilted as in times past.

The client also seems to be tracking more evenly than before. While the client is still having difficulty with supple turns to the left and right, the turns appear supple as well.

Again, the body work session involved very long, slow and heavy effleurage along the neck and longissimus dorsi. This action resulted in heavy releases when the neck area was worked.

Point-specific work was performed at the brachiocephalicus origin and insertion points at each end of this muscle. Tightness was softened and it was accompanied by releases.

As noted in sessions in semester 1, work along the latissimus dorsi of any kind resulted in deep spasms in the barrel/trunk of the horse. Using the palm of the hand, the therapist worked from trapezius caudal to the scapula and to the insertion point of the latissimus near the humerus. This was followed by stretches of the front legs which resulted in releases for the client: chewing gums, licking lips, deep sigh.

It is the therapist’s opinion that at this time the client may have reached a “wellness” plateau. This means that for this particular horse, one can at best make him “this” comfortable and nothing more.

SESSION 4

5/21/07

The walk/trot evaluation shows that no positive changes have occurred since session 3.

Horse is no longer tracking well as he is taking a short stride with the right hind leg. He is refusing to turn to the right and there is no suppleness in the turn to the left.

Although the client will trot, the trot shows soreness in the horse. The stride is not even, the hocks are not flexing well and the tail is held slightly to the left. The trot shows head bobbing on the circle but not on the straight. The head bobbing occurs on both front feet. And, he leans back at the walk and trot, as if trying to escape the soreness in his front end.

Going back to a walk and finally the stand, it appears that Apache is walking a tightrope with the hind legs. A possible adductor issue? While standing, there is no weight shifting but the left foot is raised slightly with a tendency towards pointing, which is a normal stance for him.

Slow, deep effleurage performed at the front of the horse as in the previous session but no significant releases occurred.

The same work applied to the longissimus dorsi resulted in releases on the left/right sides of the horse. Slow, deep drags with a knuckle to the intercostals l/r resulted in releases, especially between T-17 and T-18. Pressure applied cranially to the soft tissue of the tuber coxae's caused releases as did the same work at the external obliques.

Light palpation of the l/r adductors revealed extreme tightness. Client allowed deep pressure to be applied at trigger points which was followed by heavy cross-fiber friction.

Post-session, horse trotted on the line and even cantered! On the circle, his head bobs when the right rear hits, which seemed to go away the more the horse was worked on the line. At the walk, Apache is walking the tightrope but not at every step. It is occurring every few steps instead.

Is the turning point we needed to reach?

DISCUSSION
6/1/2007-7/6/2007

6/1/2007
SESSION 1

Today's walk/trot evaluation shows horse being off in many areas.

At the walk there is a restricted way of going in his legs, his shoulders do not roll through, the head is high and the walk is back to being stilted in the front.

The trot shows more restriction than the walk. The stride is uneven, the hocks show little flexion. Also at the trot it looks as if the horse is leaning back in order to take weight off the front end and at the same time he is trying to dip the back and not carry weight on the hind legs. Along with this pattern is a high head carriage and head bobbing.

A pre-massage palpation of client reveals very tight muscles in the neck, back and loins. He is bracing and protecting for some reason.

During the body-work, a very tight brachiocephalicus and omotransversarius were felt. The tightness occurred along the length of these 2 muscles. Jostling and direct pressure softened the muscle somewhat.

More direct pressure was applied to areas cranial to the scapula, resulting in releases. Jostling from the withers, down the length of the longissimus to and including the superficial and medial gluteal areas resulting in deep yawn releases.

Using the pad of the thumb, releases were noted along the length of the intercostals at T17-T18. Double-thumb cross-fiber friction applied to the tuber coxae, tensor fascia latae and obliques area left and right side resulted in more releases. A check of the adductors showed that they were not as tight as in previous sessions. They now release easily with direct pressure.

Note: Last massage session took place 5/21. We were making progress and then waited 10 days before this session. Had a point been reached where weekly sessions might have averted this overall muscle tightness and soreness?

6/6/2007
SESSION 2

This walk/trot evaluation shows no change from one week ago. There are restrictions in the limbs while walking a line and while turning circles. A new way of going is evident at the walk with the hind legs. Instead of doing a tight-rope walk with the hind legs, they now cross the mid-line of the belly at the walk.

The soreness evident in the previous session still exists at the trot, with the horse giving the appearance of wanting to take weight off the front and hind legs.

Body work this session reveals a tight brachiocephalicus on the near side crest of humerus. This same muscle on the right side is tight its entire length. It does soften with point work and jostling.

At the left and right trapezius many releases were observed with the use of direct pressure at the withers, scapular cartilage area.

As with last session, muscle jostling at the insertion point of the latissimus dorsi (left and right) and the gluteal/longissimus junction made for good releases.

Overall, very deep work performed at key muscle groups result in strong releases. But, even with these releases, there still remains an inflexibility when trying to perform spinal bends and pelvic tilts.

After the session client had a very stiff movement with the front legs which went away after a few minutes. There was no change in the walking motion and placement of the hind feet.

**6/15/07
SESSION 3**

There is no trot evaluation this session. Client is very reluctant to try a trot so he is not forced due to the fact that he also exhibits much soreness. There is no change at the walk except that there is no rope walking with the hind legs today. It should be noted that the horse needs a trim, with the feet being very long and the right front showing a convex shape.

Body-work shows that there is a very stiff crest and underside of the neck again. These softened quickly with jostling. Pressure applied to the rostral edge of the masseters resulted in good releases.

Direct pressure applied again to areas cranial to the scapulas resulted in tightness melting away. Leg stretches performed during the massage process instead of afterward seemed to result in better releases from the withers to the rear: Intercostals between each rib, longissimus to gluteal junction.

Excellent belly lifts and lateral flexion of the spinal column also occurred with releases being the end result.

After the session he still desires to walk and not trot.

6/21/07
SESSION 4

Walk/trot evaluation: Essentially no change, except that client is unwilling to turn to the right. When standing and trying to turn, he would rather back up and avoid the move. At the trot he looks off on the right front/left rear. A standing evaluation shows uneven shoe wear that is possibly causing overall body soreness?

Body-work reveals very tight descending pectorals and the connecting antebrachial fascia. This will soften with light jostling and direct pressure. The crest of the neck is tight again with jostling resulting in softness.

This session, the left and right triceps feel tight. Long, deep effleurage and direct pressure gives some release. Also very tight is the area behind the T18 on the left side (Obliques, tensor fascia latae). These will soften release with direct pressure over a broad area using the heel of the hand.

A sore right neck is also observed, with the tightness centered along the length of the cervical vertebrae. Direct pressure near these points of tightness does seem to provide some release.

The longissimus and gluteal areas left and right are tense. Small knots of tightness are also felt in the right rear quadriceps and biceps. Effleurage and direct pressure seems to provide relief.

After the session client still appears sore and off. He can use some turnout and/or light riding which might improve his movement and reduce muscle tightness.

Note: Client's owner spoke to me about a dream he had last night about his horse, where the horse came to him and acted frantic, like he was trapped. Owner is not a believer in animal communication but one has to wonder if the horse is trying to tell his owner that he feels trapped by being in his stall and tied to a pole all day.

PHOTO ANALYSIS AFTER SESSIONS COMPLETED

(Click on the link below each photo to view larger images.

Note: Must have active internet connection to view larger images.)

FRONT

There is a nice change in the pectoral area of the horse, this being more symmetry when looking at the after photo.

While one cannot change conformation faults such as bench knee with massage, it is possible for the front legs to change their stance. For instance, the plumb line from point of shoulder on the horse's right leg shows that this leg is straighter and more to the mid-line. The left leg shows this change but only from the knee to the hoof. As the hairline of hoof and pastern is still the same, one can assume that body-work can have an affect on front leg positioning.



Before

http://www.texasequinmassage.com/cases/CS1_0466.jpg



After

http://www.texasequinmassage.com/cases/CS1_0609.jpg

REAR

No significant change in the hips and croup when comparing photographs.

As in the front view, the client's left hind is turned in towards the mid-line while the right hind shows no change.

As a therapist, my question would be, why is the horse changing his stance diagonally and only with 2 legs and not all 4? It could be uncovered musculature issues, farrier issues or chiropractic issues.



Before

http://www.texasequinmassage.com/cases/CS1_0467.jpg



After

http://www.texasequinmassage.com/cases/CS1_0616.jpg

LEFT

Beginning with the neck, there appears to be less curvature along the top than in February. This can be interpreted as a weakness in the rhomboids and cervical portion of the trapezius. Each of these muscles assist the other in elevation of the neck. A second glance does show less elevation to the head and neck than in February, with the horse showing a carriage indicative of pain.

The rear of the horse has changed slightly for the better, with there being more roundness above the gaskin and gastrocnemius areas. The other change here is in the positioning of the hind legs, with the horse bringing them under the body in what looks to be a normal stance. The before photo shows the hind legs camped out behind, which in turn puts strain on the longissimus/gluteal junction of the lower back and loins.

There is no change in the angle of the shoulder, underline and top line of the client.



Before

http://www.texasequinmassage.com/cases/CS1_0478.jpg



After

http://www.texasequinmassage.com/cases/CS1_0619.jpg

RIGHT

No change is observable. However, one can see that the horse is built downhill, which means the weight of saddle and rider will always be slamming into the shoulder area.



Before

http://www.texasequinmassage.com/cases/CS1_0473.jpg



After

http://www.texasequinmassage.com/cases/CS1_0626.jpg

TOP

There does not appear to be any changes when comparing the before and after photos. A line drawn from poll to tail shows more of the barrel to the left of the mid-line as well as a loaded left shoulder. It is also a bit easy to observe in the after photo that there is a slight curve in the neck from C2 to possibly C6. A chiropractic examination should be used to diagnose any possible misalignment.

The client still appears to have a slightly higher left hip.



Before

http://www.texasequinmassage.com/cases/CS1_0523.jpg



After

http://www.texasequinmassage.com/cases/CS1_0624.jpg

ANALYSIS

Client has been a wonderful horse to work with. From the very beginning he has enjoyed the body-work and the attention it brings.

From February to April it appeared that he was not responding to treatment. His stilted walk got worse, soreness is apparent in the limbs and joints as he still found it difficult to trot if he would even trot.

By early May the client began to improve and seemed to reach a plateau, where he remains. Each session does bring needed relief to sore areas and there is a slight improvement. By the time of the next session, new difficulties have arisen that must be addressed.

The question one may have after reading this report is if the horse has really reached a wellness plateau. There still may be several layers of old muscle and tendon issues that have to be uncovered and addressed and this "plateau" may well be the body's form of self-preservation between sessions. The sessions increase the body's endorphin level which in turn decreases pain for a short time.

CONCLUSION

The client is a horse with poor conformation. Combine this with being tied to a pole as a form of daily turnout and no owner interaction in the form of riding and you have a horse that will steadily decline without massage intervention. Even then, massage therapy is not a substitute for pasture turnout and proper exercise.