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Unilateral rupture of the serratus ventralis muscle in a foal

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ABSTRACT

A 3-year-old Arabian filly with a history of abnormal instability of the scapula of the left foreleg following an accident during training. Unilateral partial rupture of serratus ventralis was diagnosed after ultrasonographic examination of the affected leg in comparison with the other sound leg.

1. Introduction

Serratus ventralis muscles are contributing to the attachment of the thoracic limb to the trunk and neck (synsarcosis). These muscles are consisted of two parts: the cervical part (serratus ventralis cervicis) extends from the last four cervical vertebrae to medial proximal cranial area of the scapula and adjacent scapular cartilage, the thoracic part (serratus ventralis thoracic) converges dorsad from the lateral surfaces of the first eight or nine ribs to the medial proximal caudal area of the scapula and adjacent scapular cartilage. The two parts of the muscles and the contralateral serratus ventralis form a support suspending the thorax between the thoracic limbs[1]. Rupture of the serratus ventralis muscles is a rarely reported condition in the horse[2,3]. During locomotion, the cervical part of the muscles pulls the dorsal border of the scapula craniad while the thoracic part acts to pull the scapula caudad. Tremendous impact trauma over the withers and the neck may induce serratus ventralis muscle rupture[4].

2. Clinical history

A 3-year-old Arabian foal was present because of the appearance of abnormal swelling occupying the upper edge of the scapula of the left foreleg which was accompanied with abnormal mobility of the scapular slab and discomfort. The condition was developed following an accidental side to side collision with another horse at the race track (Figure 1).

Examination revealed the presence of a tender marked swelling occupying the upper edge of the left scapula. Weight bearing on the affected limb was, however, normal. Walking provoked abnormal instability of the scapular slab with a moderate degree of claudication. Medio-lateral radiographic view of the shoulder joint with the limb cranially protracted after sedation revealed neither fracture nor dislocation. Ultrasonography sagittal plane scans using a real time linear scanner (Pie Medical, Netherland) over the affected area was performed by precisely placing the probe horizontally in the depression separating the upper edge of the scapular cartilage of the trunk at 6 MHz frequency. The other side sound shoulder was similarly scanned. Ultrasonography clearly identified an area of hypoechogenicity in the scapula/trunk interspace. This hypoechogenicity strongly suggested partial rupture of the thoracic portion of the serratus ventralis muscle (Figures 2 and 3).

Therapy was primarily directed towards the restriction of movements and confinement to stable combined with administration of the anti-inflammatory drug, phenylbutazone (4.4 mg/kg body weight) for 4 weeks. Marked gradual improvement was noticed and the foal returned to mild hand walking after 3 months.

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Figure 1. A 3-year-old filly showing upper shoulder swelling.

Figure 2. A sagittal sonogram of the right sound shoulder.

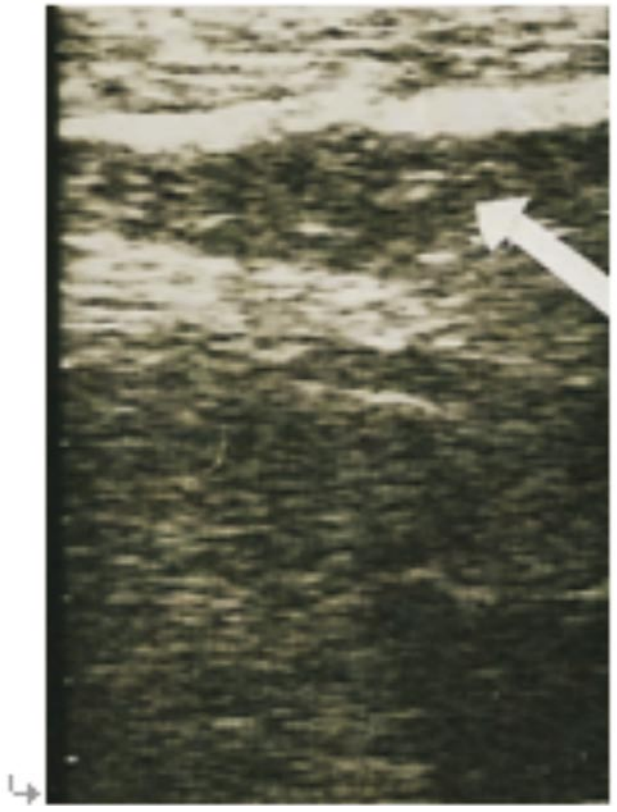

Figure 3. A sagittal sonogram of the left affected shoulder showing the ruptured muscle (white arrow).

3. Discussion

In the present case report, the instability of the scapular slab during motion was very characteristic, especially if the condition arised after impact severe trauma or collision. Despite some authors[2] reported that rupture of the serratus ventralis muscle usually involves both left and right paired muscles groups (bilateral), only one group of muscles (unilateral) was involved in this report.

The diagnostic real time ultrasonography proved great efficiency for diagnosing such conditions.

Conflict of interest statement

I declare that I have no conflict of interest.

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