



# Quarter crack, a case history

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## ABSTRACT

Cracks of the type (Fig 1) seen in this case report usually only occur on the medial aspect of the fore limb while simpler quarter cracks associated with hoof capsule flaring can occur on any quarter on both the fore and hind limbs.

## PRESENTATION

This Warmblood horse was first seen on 18th April, 2012, with a right fore medial heel quarter crack. The crack had happened during schooling, leading to sudden lameness and bleeding from the newly formed quarter crack. The quarter crack was blood stained and was associated with a previous over-reach, which had caused a horizontal defect in the hoof wall. Generally, the horse's limb conformation was good with slightly boxy hooves, which did not show any signs of hoof wall flaring although the medial heel bulb was slightly higher than the lateral one. The horse had a previous history of resenting leading with the right forelimb while being schooled.

## INVESTIGATION

The crack was investigated by paring away the surface of the hoof and showed that the vertical

crack extended inwardly but also obliquely away from the heel.

Quarter cracks of this type are considered to be caused by an abnormal flexing of the hoof wall. Normally the hoof wall at the medial quarter is flexed outwards as the hoof capsule is loaded, but in cases of this type the quarter is flexed inwards or under the foot as the hoof is loaded. This loads the hoof wall in a way that the horse has not evolved to cope with, causing the harder external wall to be stressed by extension rather than by the normal forces of compression (Fig 2). Horses with this problem often have conformational faults originating from when they were foals.

## TREATMENT AND SHOEOING

A shoeing plan was devised to reduce the abnormal loading on the medial heels by fitting heart bar shoes (Jim Blurton heart bar shoe No 0), lowering the medial heel (floating) to remove it from contact with the bearing surface of the shoe (Fig 3) and the palmar area of the sole was filled with packing material (Equi-Pak Soft, Vettec). Prior to filling, children's blue modelling dough (Soft Stuff, Early Learning Centre) was



FIGS 1 AND 2. THE HORSE PRESENTED WITH A RIGHT FORE MEDIAL HEEL QUARTER CRACK

inserted into the 'floated' space between the heel and the shoe to prevent the EquiPak filling this space. After several months, healthy new hoof growth was replacing the crack and all lameness had diminished. The client then returned to her own farrier.

During April 2013, the client sent photographs of the horse's foot and expressed concern the horse 'wasn't quite right', the photos showed



FIG 3. A SHOERING PLAN WAS DEvised TO REDUCE THE ABNORMAL LOADING ON THE MEDIAL HEELS BY FITTING HEART BAR SHOES



FIG 4. THE MEDIAL HEEL BULB WAS DISPLACED UPWARDS



FIG 5. A NEW QUARTER CRACK FORMED ON THE MEDIAL HEEL OF THE RIGHT FORE

that the medial heel bulb was much higher than the lateral heel bulb with the centre line of the frog distorted.

On 1st May, the horse was examined and, although the groundbearing surface of the foot was at 90° to the long axis, the medial heel bulb was displaced upwards by a considerable amount (Fig 4). The same shoeing techniques were again implemented as described above.

Six months later (27th November, 2013), despite the horse having been shod with heart bar shoes with 'floated' medial heels, a new quarter crack formed on the medial heel of the right fore (Fig 5) and the decision was taken to remove the shoes as shoes could be a contributory factor. As part of the new trimming regime the medial heel was 'floated', but this time to a greater extent resulting in a marked beveling down of the medial quarter, in addition to this a 'V' was cut into the hoof to dissipate any movement around the area of the crack (Figs 6).

Over the next 17 months (up to 17th April 2015) the medial heel bulb gradually returned to more normal proportions (Fig 7) and the horse regained full soundness and, according to his owner, 'is going better than he has ever gone before'.

## OUTCOME AND CONCLUSIONS

The 'shunted' medial heel is evidence of the greater loading taken on the medial heel and may be a cause of pain in its own right. Floating or beveling the heel is a simple and effective method of reducing the loading on this area of the hoof. Removal of the shoes may not suit all horses or their owners but should be considered as an option as the shoe may well be contributing to the medial heel being overloaded. Although this horse did not seem to have an unlevel footfall, it definitely did overload its medial heel. Horses with an underlying conformation fault that predisposes them to have a lateral side first footfall are at a higher risk of forming a medial heel quarter crack.



FIG 6. A 'V' WAS CUT INTO THE HOOF TO DISSIPATE ANY MOVEMENT AROUND THE CRACK



FIG 7. THE MEDIAL HEEL BULB RETURNED TO MORE NORMAL PROPORTIONS AFTER A BAREFOOT REGIME WAS ADOPTED