Quarter crack is a full-thickness, hoof-wall defect located in the quarter of the hoof, between the toe and heel of the horse’s foot. Most commonly the quarter crack originates at the coronary band and extends at an angle toward the ground, but less commonly cracks can work their way up the hoof wall from the sole. Quarter cracks can, if left un-treated, be a cause of foot lameness or decreased athletic performance in race and sport horses. Pain and lameness associated with quarter cracks is caused by the unstable hoof wall either side of the crack putting strain on the sensitive soft tissues of the foot below. Some full-thickness quarter cracks can bleed during exercise and allow dirt and bacteria under the hoof wall, leading to formation of infections and abscesses. Quarter cracks are caused by abnormal strain being placed on the hoof wall or a poor quality hoof not being able to withstand the normal strains of exercise. Causes of quarter cracks may include trauma to the coronary band from over-reaches and knocks damaging the quality of hoof that then grows down from the coronary band; pre-existing damage to the sensitive tissue under the hoof wall from infection “foot abscesses”; limb conformation; abnormal hoof conformation; long, poorly-trimmed or unbalanced heels; and short or inappropriately fitted shoes.

Impacting

A further cause is an abnormal landing pattern when the foot strikes the ground. For example, many horses will contact the ground asymmetrically, impacting first on one side of the hoof and then loading the opposite side (this type of landing pattern is generally related to conformation). Disproportionate forces placed on one side of the hoof wall over time often result in the formation of a quarter crack due to the increased pressure. It is also hypothesised here at Mark Johnston Racing that horses with poorly trimmed feet are prone to both cracked heels “exsuda-tive pastern dermatitis” commonly seen during wet conditions in the winter and quarter cracks posing the question of whether the conditions are linked i.e. cracked heels can lead to the formation of quarter cracks or that the conditions appear due to foot trimming issues at a similar time but are not directly linked. For a successful quarter crack repair, it is necessary to determine the underlying cause of the crack and to correct it if at all possible. At MJR, our main aim is to control any factors that predispose horses to getting quarter cracks as prevention is by far the best way to reduce the number of horses affected and prevent any disturbances to a horse’s training regime. We have three on-site farriers available every day, allowing for regular trimming, shoeing and consultancy on foot issues.

After the cause is addressed, the defect should be stabilised. Providing stability and strength to the hoof wall defect allows the horse to perform without pain while the quarter crack heals. There are several schools of thought on the treatment of quarter cracks and many have been used here at Mark Johnston Racing. The method we currently use and find the most effective is not currently described in the veterinary literature on this subject. Our current method of treatment is to remove the horse’s shoes and trim its feet back so the heels are short and balanced to produce the least possible strain on the crack. We do not know exactly how this method works but it has produced very high success rates in the horses we have treated.

Mechanically

It is hypothesised that our treatment protocol naturally alleviates some of the strain on the crack and encourages formation of new undamaged hoof at the coronary band that can then grow down. The horse is then exercised on our soft all-weather surface to prevent any foot soreness developing while they are ridden unshod. Another school of thought among some farriers and vets for treatment of quarter cracks is to regard a full-thickness hoof wall crack as a fracture and so it should be stabilised mechanically as much as possible.

Treatment includes inserting stainless steel wires to stabilise the crack from side to side. An acrylic composite combined with fibre-glass is applied to the outer hoof wall over the crack to further stabilise the defect and form the “patch” which can be seen on the horse’s foot. The type of shoes the horse wears plays a significant role in the successful treatment of a quarter crack. Bar shoes are effective in increasing the ground surface of the foot, providing support and decreasing the independent vertical movement at the heel bulb on the affected side. Aluminium shoes that are applied with glue or nails offer a slight advantage over a steel bar shoe because they are lighter and less cumbersome. After attempts at all sorts of stabilisation techniques with varied success the current method seems to work well, allowing horses to continue exercising and letting the crack to grow out naturally. The importance of determining the underlying cause and of trimming the feet properly cannot be over-emphasised when repairing a quarter crack. Correcting any existing hoof abnormality along with improving the landing pattern of the horse’s foot is as important as the repair itself. Once the disproportionate stress on the foot is corrected the hoof often heels quickly and healthy hoof wall tissue will gradually grow down from the coronary band, pushing the crack out as it grows.

At Mark Johnston Racing, peace of mind is a priority for our owners. This is why we have included the vet fees in our inclusive daily rate for horses in training.

Neil Mechie

Neil is 25 and did his veterinary degree at the University of London. He then worked for 14 months as an intern at the Minster Equine Hospital, York, where his duties included surgical and colic work. After a spell at the specialist equine practice of vet Simon Stirk, near Bishop, Neil worked for six months at Clevedale Veterinary Practice at Guisborough. Neil’s keen interest in racing is heightened by the fact that he has a point-to-pointer, and when not kept busy with work by Mark, Neil spends time looking after his border collie.

John Martin

John Martin is 27 and from the town of Stradbally in County Laois in Ireland’s Midlands. He was raised on a farm and from a young age had ambitions to be a vet. He trained at University College in Dublin and it was there that he first took an interest in horse racing, which nurtured an ambition to eventually specialise in working with horses as a vet. After graduating he took up a post at a veterinary hospital in Nawan, County Meath before moving to England to join a practice in Louth, Lincolnshire. He joined MJR at the start of 2010, staying for more than two years before returning to Ireland for a brief spell and then resuming his position at the yard this month.

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