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ATRIAL FIBRILLATION AND HYPERTHYROIDISM IN A WARBLOOD GELDING

An 18-year-old Warmblood show jumper became acutely unsteady during exercise on a hot day. Evaluation by his referring veterinarian revealed an irregular heart rhythm and an electrocardiogram (ECG) confirmed the diagnosis of atrial fibrillation (AF). He had been receiving thyroid supplementation on the owner's initiative for several weeks. Blood analysis from the day of presentation showed him to be hyperthyroid (T4 = 4.55 µg/dL, reference range 0.85-2.4 µg/dL). The gelding was referred for a complete cardiac workup.

On presentation, the notable abnormalities on clinical evaluation were his irregular heart rhythm and a high heart rate (80bpm). Further diagnostics included a 12 lead ECG, an echocardiogram, non invasive blood pressure measurement and a 24h ECG. Blood work included a complete blood count, serum biochemistry, and cardiac troponin I. The echocardiogram showed mild left ventricular hypertrophy, with an increased relative wall thickness (0.67). He was mildly hypertensive (131/95 mm Hg). The 24h ECG confirmed the persistence of his tachycardia, averaging 52 bpm in the quiet times and racing up to 215 bpm during brief periods. Cardioversion was postponed until he would reach a euthyroid state. The thyroid medication was progressively decreased, which improved his tachycardia but didn't resolve the AF. After 4 weeks, an exercising ECG was performed which showed ventricular arrhythmias. The horse was treated with a quinidine conversion and remained in sinus rhythm for the available follow-up period of 2 years.

Hyperthyroidism is a known predisposing factor for atrial fibrillation (AF) in people, and the link between this hormonal dysfunction and AF has been well established⁽¹⁻⁴⁾. In horses, no such relationship has previously been documented, although anecdotal links exists between thyroid hormone supplementation and the recurrence of atrial fibrillation. In this case, the horse presented several cardiovascular signs of hyperthyroidism in people (AF, tachycardia, ventricular hypertrophy, hypertension). It is the first report linking AF and hyperthyroidism in horses, and cautions against unnecessary thyroid supplementation in sport horses.

References

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