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ALTERNATIVE VENIPUNCTURE SITES IN THE HORSE

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By far, the easiest and most commonly used location for venipuncture in the horse is the jugular vein. However, because of the frequency of intravenous injections in the horse, the often-times caustic nature of materials that are injected, and the relative frequency that the injection is made by a lay person, jugular veins, and particularly the left jugular vein, are often times traumatized and damaged. Intensive care before, during and after abdominal surgery in horses usually involves administration of high volumes of intravenous fluids and other medications, and the integrity of the jugular veins may be critically important to the outcome of the case.

Finally, endotoxemia, septicemia, and coagulopathies associated with colic can compromise vascular integrity, and add to the potential for permanent damage and thrombosis of the jugular veins. Therefore, preservation of the jugular veins by using alternative sites for venipuncture can be an important component of case management with critically ill patients, or in animals who require intravenous catheterization for long periods of time. Procurement of blood from the catheter is considered by many clinicians to compromise the integrity of the catheter, and may predispose the vein to phlebitis and thrombosis.

Obtaining blood samples from other locations therefore is advantageous in these cases, particularly when multiple blood collections may be required in a single day as a part of monitoring critical care patients. Although alternate locations exist, the transverse facial vein sinus is a highly useful and oftentimes neglected location for blood collection.

The transverse facial vein runs parallel to the facial crest and anastomoses with the facial vein at the rostral end of the facial crest. A sinus is formed in the transverse facial vein just ventral to the eye, and provides an excellent location for blood collection. The sinus is located about 1 cm ventral to the facial crest along an imaginary line drawn from the medial canthus of the eye that passes perpendicular to and through the facial crest below. The needle is inserted at slightly upward angle towards the base of the facial crest until bone is contacted, then withdrawn very slightly, usually ending in penetration of about 1 cm. If blood is not obtained immediately, rotation of the needle or slight redirection oftentimes results in successful procurement of a sample. Blood can be obtained with either a Vacutainer system or a needle and syringe, the volume obtainable is adequate for virtually any laboratory analyses required, and the technique is remarkably well tolerated by most horses. Packed cell volume and total protein of blood obtained from the transverse facial vein correlates closely with blood from the jugular vein.

Over time and multiple venipunctures, the transverse facial vein sinus may thrombose, but the clinical consequences of this are minimal. Minimizing trauma to the sinus, digital pressure after venipuncture, alternating sides of the face, and topical application of DMSO can prolong the usefulness of this site. Occasionally, head-shy horses or needle-shy horses will require a nose twitch for restraint, but most horses will allow venipuncture at this location with minimal restraint. Other locations, such as the cephalic veins, the saphenous veins, or the lateral thoracic veins, can also be used for sample collection, but may need to be preserved for catheterization, are prone to hematoma formation, are more sensitive to venipuncture, and can be dangerous for the phlebotomist.