

GUIDE TO BLOOD SAMPLING VENIPUNCTURE

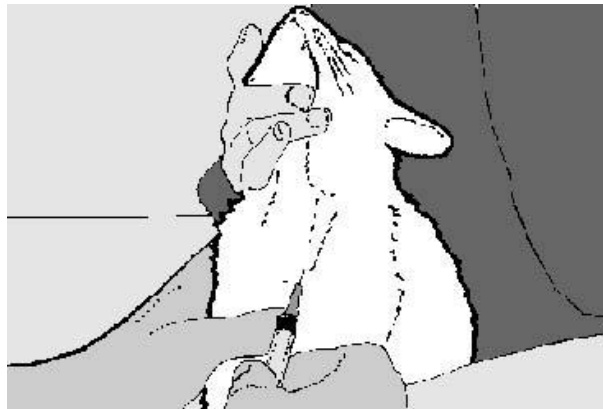
Sample quality is of enormous importance in the successful application of biochemistry and haematology. Good venipuncture technique is therefore essential. The widespread practice of venipuncture from peripheral veins, such as the cephalic and saphenous, is often detrimental since flow from these veins into the needle can be slow and lead to sample artefacts such as haemolysis and microclots. Sampling from the jugular vein is the preferred method since this usually produces rapid, unobstructed flow of blood into the syringe or vacutainer. The technique is simple and can be used with ease in all but the most obstreperous pets.

JUGULAR SAMPLING FROM CATS

- Use 21 or 20 g X 1 1/2-1 inch needles with 5-10 ml syringe attached. Clip the hair over one jugular groove and aseptically prepare the skin over the jugular vein.
- Position the cat towards the edge of the surgery table. Hold the front legs down over the edge with your left hand, and with your right hand tip the neck backwards and the nose upwards. The front legs and neck up to the point of the mandible should then be in a vertical plane. The blood sampler takes up a position in front of the cat and holds off one jugular vein by compressing the jugular groove. The needle is then inserted into the vein with the tip pointing upwards. As soon as the tip of the needle enters the lumen of the vein gentle suction should be applied.

JUGULAR SAMPLING FROM DOGS

- Use 18 - 21 g x 1 inch needles with 5 - 20 ml syringe attached. Prepare as for the cat.
- Most dogs will sit for this procedure. Large dogs should be placed with their back to a wall or table. The holder usually stands astride the dog with legs behind the dog's shoulders. The person taking the blood sample squats in front of the dog. The dog's head is tipped back exposing the jugular grooves and the sampler compresses the jugular vein just dorsal to the thoracic inlet. In many cases the vein is located by feel more than sight. The vein is raised and lowered and the jugular groove palpated with the fingers of the opposite hand to locate the vein. The needle is inserted with the tip upwards and blood is withdrawn by gentle suction. Small dogs will usually sit near the edge of the surgery table so that a procedure similar to that described above for cats can be adopted.



HANDLING OF BLOOD SAMPLES

- Once a sufficient quantity of blood has entered the syringe, the needle is withdrawn and pressure placed on the vein to avoid haematoma formation. Blood is transferred into anticoagulant tubes after detaching the needle from the syringe. The blood is mixed with anticoagulant by gently rolling the tubes between the palms of the hands.
- A frequent and unnecessary cause of sample haemolysis is withdrawing a sample into a syringe and then pushing the needle directly through an evacuated tube top. The fluid flow under pressure through the needle will inevitably damage the red blood cells. If blood is to be transferred into evacuated tubes from a syringe the bung should be removed to release the vacuum, the needle removed from the syringe and the blood gently expelled from the syringe.
- The tubes which are most frequently haemolysed on arrival at the laboratory are those that contain oxalate fluoride. We suspect that this is because the oxalate fluoride tube tends to be remembered at the last minute and frequently is filled with the last remnant of blood in the syringe which is expelled from the syringe under pressure. Oxalate fluoride is also quite a potent red cell metabolic toxin and this tube should probably be

filled first with the freshest and least damaged red blood cells.

- Biochemical artefacts are a problem with postal samples sent to commercial laboratories. These can be minimised by separating serum or plasma from clotted or heparinised samples before sending the sample; this requires a centrifuge. We are experienced at identifying sample artefacts and in most cases a potential artefact which might affect the interpretation of blood values will be identified on the laboratory report.