

MEASUREMENT OF BLOOD PRESSURE IN CONSCIOUS CATS BY CAROTID LOOP PUNCTURE

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Blood pressure recording in the conscious cat is normally accomplished using a Teflon valve implanted in the neck and connected to a polythene tube passing down a carotid artery to lie in the abdominal aorta (Day & Whiting, 1972, Finch & Hicks, 1976).

Our experience of this technique has resulted in good quality pressure recordings but the preparation has limited life due to blood clots formed around the end of the catheter being washed into the kidneys. This produces progressive damage and eventually results in the death of the animal.

We have produced carotid loops on cats and have recorded blood pressure by direct puncture of the artery in much the same way as in dogs (Parkinson, 1978). Cats with loops have been kept now for 18 months with no problems and there seems no reason why they should not survive for very long periods. The left carotid artery is exteriorised in a loop of skin using similar techniques to those used for the dog (Brown & Korol, 1968, Meir & Long, 1971, O'Brien et al, 1971) but in addition the area around the carotid bifurcation is carefully dissected and treated with phenol in order to denervate the sinus. Puncture of the established loop is achieved using the Seldinger technique (Parkinson, 1978) after injection of lignocaine 2% into the loop space in order to prevent spasm of the artery. Once catheterised, a sterile saline solution containing 10 mu per ml of heparin is continuously infused at a rate of 0.1 ml min^{-1} into the artery in order to preserve patency while recording blood pressure. The best recordings are obtained if the catheter is directed towards the heart. The cats stand quietly in slings during puncture and recording and can be dosed orally with gelatin capsules. Recording periods of around 5 hours are routinely undertaken. Loops can be punctured at weekly intervals with no problems and remain in good condition. There are no maintenance problems and the technique has proved a viable and, in our opinion, a superior technique to valve implantation.

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