**OpenLabyrinth: Rio an emergency [272] case material summary**

You are finishing off a surgery when a nurse informs you they have received a phone call. They tell you an owner has rung to say they coming down to the practice right away after their dog has had an accident and “there is a lot of blood”

The owners, Lorna and Gail Acton are not your clients, they live far away and are visiting the area on holiday.

Mrs and Mrs Acton arrive with Rio. You are just finishing up your last sutures so ask a nurse to go and take a history, and to have a look at Rio.

The nurse returns and tells you Rio is a 4 year old, 24kg, male neutered Labrador. He was out on a walk with his owners and tried to jump over a barbed wire fence after a deer. Rio got stuck on the fence and has sliced his back leg, through what looks like an artery.

The nurse is currently holding Rio for you, and is trying to stem the blood.

You examine Rio and find the following:

|  |  |
| --- | --- |
| Demeanour | Weak, responsive, quiet |
| CRT | < 4 seconds |
| Mucous membrane colour | Pale |
| Heart rate | 140bpm with bounding pulses |
| Respiratory rate | Panting |
| Abdomen | Some superficial skin wounds |

Based on the amount of blood you think Rio may have lost, you decide that the best first steps are to replace the volume lost with an immediate blood transfusion, whilst he has surgery to repair the wound on his leg.

Rio is not your client and you do not have access to any previous history.

His owners inform you he has had a blood transfusion previously, 2 years ago after eating rat poison. The owners say they don’t remember any problems with it and he has been well since.

You take a blood sample and manually check the PCV. Rio's PCV is 16%.

**Rio needs a blood transfusion**

As Rio (24kg) is healthy and should be able to regenerate his own blood cells, the target aim is to increase the PCV to 25% (in non regenerative patients, a higher PCV is aimed for).

Rio’s PCV dropped to 16%, how much blood do you need to transfuse to reach a PCV of 25%?

Calculation:
2ml whole blood/ body weight (kg) raises PCV by 1%

Rio needs to have his blood group tested, which showed he is DAE1.1 negative.

#### During the transfusion

Cross matching the donor blood with Rio's blood did not show any incompatibilities. Rio was given the blood transfusion as he was prepped for surgery. The transfusion was given at a 1ml/kg/hr rate for the first 30 minutes and Rio was monitored closely for any adverse reactions. None were observed and then the flow rate was increased to 5ml/kg/h.

The surgery itself went well and Rio showed no transfusion reaction. A day later his PCV was tested and it was slowly improving.

#### Case conclusion

Rio did very well after his surgery. He was on strict rest, and required many check ups and changes to his bandaging around the thigh area, but recovered well. The owners were very grateful for your help, and after their holiday finished they continued Rio’s check-ups at their own home practice.