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Blood transfusion in a dog with Ehrlichiosis

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Abstract

Blood transfusion is a crucial medical intervention used to address anemia, effectively restoring essential red blood cell levels. A nine-year-old male Rottweiler was presented at the Veterinary Clinical Complex, CVSc., Rajendranagar, with a history of severe tick infestation, decreased water intake, and lethargy lasting for six days. A physical examination revealed enlarged lymph nodes, anemic signs and severe dehydration. Haematological analysis showed anaemia and thrombocytopenia. Lateral flow assay revealed positive for E. canis. Blood transfusion was performed along with supportive therapy. The dog was also administered oral Doxycycline @10 mg/Kg for two weeks. The combination of blood transfusion and subsequent treatments significantly contributed to the dog's recovery.

Keywords: Anemia, tick infestation, Blood transfusion, Hematology, Doxycycline

Anemia can be defined as a reduced erythrocyte content or diminished oxygen carrying capacity of blood resulting from a decrease in PCV, RBC count or hemoglobin concentration below normal reference range. The etiology often includes infectious diseases (Ehrlichiosis, Babesiosis, Haemotropic Mycoplasmosis etc), autoimmune disorders, nutritional deficiencies, parasitic infestations, chronic diseases, neoplasia and hemorrhage. This case report highlights the successful management of severe anemia in a Rottweiler, demonstrating how blood transfusion effectively served as a critical supportive therapy alongside doxycycline, and contributed significantly to the overall recovery.

Nine year-old male Rottweiler was presented to the Veterinary Clinical Complex, CVSc, Rajendranagar, with a history of anorexia, fever, tick infestation and epistaxis. The animal was dull and lethargic with pyrexia. The conjunctival and buccal mucous membranes were markedly pale. Enlargement of the submandibular, prescapular, and popliteal lymph nodes were noted.

Haematobiochemical examination, SNAP test and PCR were carried out. Peripheral blood smear revealed the presence of morulae within neutrophils. Both the SNAP test and lateral flow assay yielded positive results for ehrlichiosis. The diagnosis was further confirmed by PCR analysis (Fig. 1). Decreased RBC count (2.38 × 10^{12}/L), PCV (11.4%) and thrombocytopenia (89 × 10^{9}/L) were noticed. Liver function test parameters were within normal limits, whereas kidney function tests revealed an elevated blood urea level of 43.7 mg/dL.

Both direct (tridrop method) and indirect cross matchings (Wardrop and Davidow, 2023) were performed to detect any incompatibility between the donor and the recipient and also to rule out the presence of any previously sensitised antibodies both of which showed negative results for agglutination (Fig.2). Using the formula, Blood transfusion volume = 80×body weight × (desired PCV-recipient PCV) / (PCV transfused blood) (Wardrop *et al.,* 2016). Blood was successfully collected from the donor dog and transfused into the recipient dog. The blood transfusion served as an adjunct therapy, effectively raising the PCV to a level that facilitated clinical improvement and enhanced the animal's response to concurrent treatments.

The animal was administered Ferritas and Vitamin B-complex supplement (@1.5 ml, to support haematopoiesis). The dog was administered doxycycline (orally @ 10 mg/kg S.I.D for 3 weeks) Anti-tick shampoo and fipronil spray were used for effective tick control. Following the blood transfusion and treatment, the animal gradually recovered and became active by day 7. The hematinics and multivitamin supplements aided in full recovery. Although often recorded as an independent diagnosis, anemia is actually a clinical

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sign with several underlying causes. Treatment of anemia in veterinary medicine includes addressing the underlying cause, providing supportive care such as blood transfusions, and administering hematinic agents like iron, vitamin B12, and folic acid as appropriate. Doxycycline addressed the underlying ehrlichial infection, blood transfusion played a crucial supportive role in stabilizing the patient.

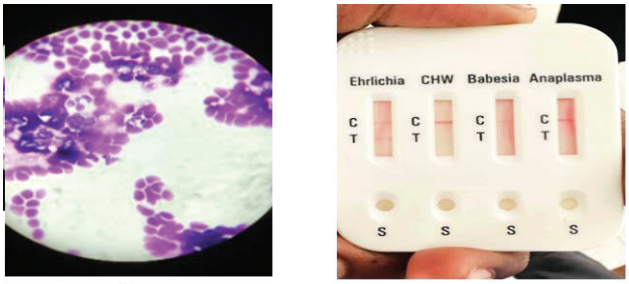

Fig. 1: (a) Presence of morulae in neutrophil (b) snap test showing positive result

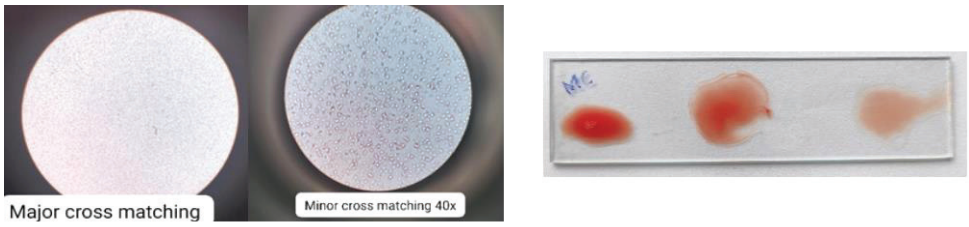

Fig. 2: Indirect and direct crpss matchings showing no signs of agglutination

Fig. 3: Collection and weighing of blood in citrate phosphate dextrose blood bag; b) collection of blood from donor and transfusion to recepient.

References

Wardrop, K.J., Birkenheuer, A. and Blais, M.C. 2016. Update on canine and feline blood donor screening for blood-borne pathogens. *J. Vet. Intern. Med*., **6;30(1)**:15-35.

Wardrop, K.J. and Davidow, E.B. 2023. Laboratory testing in transfusion medicine. *Vet. Clin. North Am. Small Anim. Pract*., **53(1)**:265-278.

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