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AN EVALUATION OF DEXTRAN ADMINISTRATIONS IN BLED DOGS : OBSERVATIONS WITHOUT GENERAL ANESTHESIA

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This study was designed chiefly to evaluate the effect of maintaining arterial pressure and their hematological changes in dogs with 20 per cent of their circulating blood volume bled and intravenous administrations of 2 kinds of dextran solutions given.

The results obtained were as follows :

1) The bleeding of 20 per cent of circulating blood volume in healthy dogs induced a remarkable fall in arterial pressure and moderate decreases in arterial hematocrit, hemoglobin and plasma protein values.

2) After bleeding, low molecular weight dextran in lactated Ringer's solution (10% Dextran 40 L) and dextran in 5 per cent glucose solution (6% Dextran 60 G) were administered at a rate of approximately 2.5 ml/kg B.W./min. until the mean arterial pressure had reached the values before bleeding. As a result, the pressure was recovered to the initial values by the administration which was approximately half the bleeding volume in the former and an equal volume in the latter.

3) The mean arterial pressure was maintained at the initial values from approximately 2 hours of the completion of administration until 3 hours after bleeding ; 2 kinds of dextran solutions proved effective in maintaining it.

4) No significant changes in plasma electrolytes were observed after the administration of 10% Dextran 40 L, but 6% Dextran 60 G produced remarkable decreases immediately after administration.

5) Judging from changes in the arterial hematocrit, hemoglobin and plasma protein values, 10% Dextran 40 L proved superior to 6% Dextran 60 G in its plasma volume expanding effect.

6) These data suggested that in the dogs with 20 per cent of their circulating blood volume bled, administration of 10% Dextran 40 L, in volume of approximately half the bleeding volume, was preferable.