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## Chronic Hypertension in Dogs Following Occlusion of the Carotid Arteries

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## Chronic Hytertension in Dogs Following Occlusion of the Carotid Arteries

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Acute experiments involving ligation of both carotid arteries revealed that blood pressure, recorded from the femoral vein of dogs, remained elevated for the duration of each experiment, or from six to fourteen hours. To determine if similar results could be obtained in chronic experiments the common carotid arteries of three dogs were ligated. The apparatus used for recording blood pressure consisted of a Baumanometer attached to a pediatrics cuff which was secured around the hind leg by means of a leather wristlet. Both oscillatory and auscultatory methods were used. As the latter method was found to give more consistent systolic readings it was used for these experiments. Diastolic pressure was difficult to obtain.

Approximately two months were required to train the animals so that reliable blood pressure readings could be obtained. The mean of three hourly readings comprised the daily average. The average of these daily recordings for the week prior to operation was considered normal blood pressure for each animal (Table I).

A mid-line incision was made in the neck and the muscles were separated to expose the carotid sheath. The structures were lifted only as much as was required to dissect the vagal sheath a short distance. A wire suture was firmly bound around the carotid artery to completely occlude it. Both carotids were tied during the same operation.

Daily blood pressure readings were made during the post-operative week. Thereafter weekly readings were recorded. These results are included as post-operative averages in Table I.

Table I: Average Systolic Blood Pressure of Dogs Before and After Ligation of the Common Carotid Arteries.

Dog No.	Date of Operation	Pre-operative Average mm. Hg.	Post-operative Average mm. Hg.	Average Increase mm. Hg.
I	April 2 .....	129	166	+37
II	June 24 .....	132	169	+37
III	June 26 .....	115	152	+37

All animals were still alive on December 19 when the experiment was abandoned because the writer left the institution where the work had been performed.

Blood pressure above 150 mm. Hg. was considered hypertensive. Marked variation in readings on individual animals was noted. Dog I showed post-operative pressures from 138 to 216 mm. Hg. Dog II ranged from 138 to 195 mm. Hg. and Dog III, from 148 to 160 mm. Hg. During a post-operative period lasting from three or four days to two weeks pressures were greatly elevated. Thereafter they fell abruptly but in no case to the pre-operative level. Following this.

period a gradual rise to levels near the post-operative average was noted. More work is required to validate these observations.

Studies to determine tissue changes which might account for the rise in blood pressure have not yet been completed.

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