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LECTURE.

BLOOD PRESSURE.

By Dr. Halls Dally.

Our large double drawing room was completely filled, when Dr. Halls Dally gave his lecture on blood pressure, indicating that the subject is one in which nurses are much interested. For nearly an hour and a half the lecturer held the close attention of his audience and the appreciation expressed and the prolonged applause at the close of the lecture showed that the nurses considered it to be one of real value to them.

In commencing his lecture Dr. Halls Dally said that blood pressure might be described as the pressure exerted at a given instant at a given point by the blood in circulation. People talk loosely about "suffering from blood pressure" but they only "suffer from it" when it is abnormally high or low. A diagram to help illustrate the subject of the lecture was put on the blackboard, a series of curves indicating the rise and fall of the pressure. The peak of the curve represented the systolic pressure and the lowest level the diastolic. The differential pressure is the difference between these. A useful formula to express the relation of blood pressure and pulse rate can be expressed thus: $\frac{S}{D}$: Diff.P. : P.R. e.g. $\frac{160}{120}$: 40 : 70

The heart may be regarded as a pump and with each contraction blood is driven into the circulation. The contraction of the heart is followed by a pause and this action takes place about 72 times per minute. Pressure rises with the contraction and during the pause there is an intra-arterial fall. The diastolic pressure is the more important and it varies according to psychical, physiological and pathological conditions. The differential pressure is usually 44 millimetres of mercury and variations in it point to certain impairments in the functioning of the circulatory organs or kidneys.

A description was given of the instruments used for testing blood pressure, the most useful being the Mercurial Manometer; by means of this the readings are taken by the height of a column of mercury. The Aneroid type of instrument has a dial, graduated in millimetres of mercury, on which a needle travels. Other instruments were also referred to.

Dr. Halls Dally then gave details regarding the procedure in estimating blood pressure. The patient should be comfortably settled with the palm of the hand up and the arm supported on a level with the heart. The nurse applies the armlet as high as possible with the pressure bag centred over the brachial artery. A rubber tube connects the pressure bag with the blood pressure instrument. The patient's attention may be diverted by taking the pulse and he should be reassured regarding the harmless temporary pressure experienced, so that he is kept as quiet as possible mentally and physically. The bell of the stethoscope is next applied over the brachial artery below the lower edge of the armlet and above the inside of the elbow. Next the pressure is increased by successive squeezes of the pump to about 20 millimetres above the level at which any sound can be noted, and then the little screw which releases the pressure is turned gently. The first tick after release of external pressure on the artery denotes the systolic pressure. The first dull sound after the murmur, which is heard as the pressure drops, is the diastolic pressure. The readings should be taken quickly to prevent the arm from becoming congested. The basic arterial pressure is what we want to know, therefore the reading must be done two or three times. The diastolic pressure does not vary much but the systolic may. Various factors physiological, psychical or pathological may lead to variations in the blood pressure. A systolic pressure consistently above 155 mm. Hg. or below 100 mm. and a diastolic above 100 mm. or below 55 mm. is not normal at any age. Blood pressure may depend somewhat on body-height and weight. Robust people often have a high blood pressure; after the age of forty-five overweight becomes more or less pathological. Blood pressure is much the same in both sexes from infancy to puberty. From puberty to forty years of age men have a higher blood pressure than women; after that women's is definitely above that of men. A list of causes which might be responsible for high blood pressure was given including cardiovascular disturbances, renal diseases, pulmonary conditions, injuries, psychical states, toxæmia of pregnancy.

In referring to symptoms, Dr. Halls Dally said that in early stages of the condition there may be none at all and indeed quite frequently the patient may be feeling exceptionally well. The patient's friends may notice little change except such signs as irritability, drowsiness, lapses of memory, and suchlike. An anxiety-state or psychosis may then make its appearance. Typical aspects of the disease show which type of high blood pressure the patient is suffering from, *i.e.* cerebral, cardiac or renal hyperpiesis. Hyperpiesia, the typical high blood pressure syndrome, is most common between the ages of 40 and 60 but may occur earlier. There is heightened arterial pressure of 160 mm. or over in the systolic, and 100 mm. or more in the diastolic. Cardiac failure or cerebral hæmorrhage may terminate the case. It may be associated with arterio-sclerosis. In relation to pregnancy the commencement of the toxæmia is indicated by the rise in the blood pressure before signs of albuminuria appear.

In proceeding to discuss low blood pressure Dr. Halls Dally said that the upper systolic limit might, for practical purposes, be taken as 110 mm. Hg. for adult males and 105 mm. for females, and the diastolic as 66 mm. for males and 62 mm. for females, thus yielding a differential pressure of 44 mm.; but it was difficult to make an estimate owing to variations in different people. Again the lecturer gave a list of the possible causes of the condition, such as low vitality (often hereditary), anæmia, arthritis, shock and others. People, whose blood pressure is low, are very liable to infection. This can be combated to an extent by attention to diet, particularly in relation to its vitamin and calcium content.

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