

PARATHYREOTROPIC ACTION OF THE ANTERIOR PITUITARY:

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In December, 1932, we received a preliminary impression that intramuscular injections of saline emulsions of anterior lobes of beef pituitary glands gave rise to enlargement and increased vascularity of the parathyroid glands of rabbits. As far as we could discover at the time, no previous reference had been made to such an effect of anterior lobe substances. We, therefore, undertook more extensive experiments to collect data on the gross and microscopic anatomy of the parathyroid glands of rabbits under treatment with various anterior lobe substances, pregnancy urine and control injections of brain tissue emulsions.

PLAN OF EXPERIMENTS AND METHODS

Rabbits of the same age, sex and strain (blue beaver) were used in each of our early experiments. These factors were later varied singly; and since it was found that neither sex, age nor strain had any modifying effect, females of mixed strains were used in later experiments. Rabbits were segregated as to sex in order to avoid the complicating factor of pregnancy. Animals used in individual experiments ranged from 10 to 22 weeks of age. They were fed on rations of oats, greens, fresh carrots and occasional additions of cow's liver. No cod-liver oil was added. Normal control animals (untreated) were healthy and survived in excellent condition in the hygienic atmosphere of the animal farm except for a rare attack of diarrhoea in the younger members of the colony.

Intramuscular injections were carried out with sterile precautions after preparation of the skin with alcohol. The materials listed below were assayed for a qualitative effect on the parathyroid glands. Animals were kept under the conditions of the laboratory for a preliminary control period before any injections were given.

Fourteen animals received saline suspensions of fresh bovine anterior lobes which were obtained daily from the slaughter house directly after the death of the cows. The pituitary glands were kept cold and the anterior lobes were dissected free within one to three hours. These were then ground in saline with mortar and pestle. Care was taken to have all the contents sterile. When the material was ground to a consistency fine enough to pass through a large bore needle it was diluted with saline so that 5 cc. was usually

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The clinical picture
this was strikingly different

methylenediamine blue stains were cut to a thickness of 0.01 mm. and fixed in Zenker's solution. Thyroid glands were removed and killed. Animals were killed one to four days. Urine, prepared as for

Growth Hormone were Prognon, Antop

eight weeks (at pH 7.5)

The above sterile gram equivalent for

5. Alkaline extra formed and this material

4. Acid extractio traction and used in

3. Alkaline extra Six animals received

2. Acid extractio (pH 4.8 to 5.0) and

1. Saline emulsi for sterilization. Two

The above material caused local abscesses

used. They were prepared in a saline solution

water for 5 to 10 ml

Three animals were then drawn into

ally equivalent to the

rabbits.

was then drawn into

ally equivalent to the

(2)

(350-360)