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A Method for Separate Removal of Either Hypophyseal Lobe of the Rat.

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Two methods of approach have been used by investigators for the extirpation of the hypophysis of the rat. The parapharyngeal approach proposed by Smith¹ which has been modified by several investigators is the one most commonly used. The second method, suggested by Koyama,² is through the ear. The temporal approach used successfully on dogs by Dandy and Reichert³ has not been, to our knowledge, used on rats. This method is particularly adapted for operating on rats, (1) because the sella turcica is shallow and a satisfactory approach can be obtained from the side; (2) the rat is very resistant to infection; (3) the anterior and the posterior lobe of the hypophysis in the rat can be removed separately by this approach. This cannot be done with dogs. (4) The lobes can be removed intact and may be used for microscopic examination; (5) the operation can be carried out on very young animals.

The work of Weed and McKibben⁴ on the experimental alteration of the brain bulk has been useful in this operation. The decrease in the brain bulk of rats given intravenous injection of hypertonic sodium chloride solution is very striking.

Under light ether anesthesia sufficient hypertonic salt solution is injected intravenously in order to obtain the maximum amount of brain shrinkage. We have been using 400 mg. of sodium chloride per kilo of body weight. This is slightly more than the amount used by Weed and McKibben on cats and by Dandy and Reichert on dogs. In rats weighing over 100 gm., the sodium chloride was injected very slowly into the jugular vein in a 20% solution. Rats weighing less than 100 gm. were given sodium chloride in a 5% solution. If the sodium chloride is injected rapidly, the animal usually goes into convulsions and may die, but when injected very slowly, it has no immediate nor any apparent harmful after effects.

Fifteen minutes after the injection of the salt solution, a small

¹ Smith, P. E., *Am. J. Anat.*, 1930, **45**, 205.

² Koyama, R., *Jap. J. Med. Sci.*, IV, Pharmacology, 1931, **5**, 41.

³ Dandy, W. E., and Reichert, F. L., *Bull. Johns Hopkins Hospital*, 1925, **37**, 1.

⁴ Weed, L. H., and McKibben, P. S., *Am. J. Physiol.*, 1919, **48**, 531.

unilateral opening is made with a trephine. The trephine described by Pencharz⁵ is satisfactory. The opening is made larger with the aid of a small bone forceps. The zygoma is then removed to give the lowest possible entrance to the base of the brain. The operation can be performed without removing the zygoma, but it is advisable for the beginner to remove it. The dura is then cut and a small flexible spatula, preferably made from collodion, is passed under the temporal lobe of the brain to the region of the hypophysis. The oculomotor nerve interferes with a view of the hypophysis and may be cut. When this has been done very little retraction is now necessary in order to obtain a good view of the hypophysis. With the hypophysis exposed the diaphragma sellae is cut. For this purpose we have made from the point of a needle a very small sickle which was fused to the tip of a small glass rod. Another glass rod drawn so that the tip is very fine and curved is used for separating the posterior from the anterior lobe. One will find that the posterior lobe can be easily separated from the anterior lobe and removed intact. The two lobes may be removed if it is so desired.

Dandy, Reichert and others believe that the large mortality reported by earlier investigators from hypophysectomy on dogs and cats was due to trauma and hemorrhage. We have not been able to observe any ill effects from slight trauma to the brain from this operation insofar as the rat is concerned.

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Hematopoietic Reactions to Antimonyl Antimony.*

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The close chemical relationship between arsenic and antimony suggests that the latter substance might be used in place of arsenic in the treatment of abnormal leucocytoses. Meneghetti¹ concluded that a "true hemopathy" characterized by leucocytosis followed by leucopenia, a profound anemia, and marked normoblastosis could be produced after a single intravenous inoculation of colloidal antimony

⁵ Pencharz, R., Thesis, University of California Library, 1932.

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¹ Meneghetti, E., *Haematologica*, 1926, 7, 1.