

the kaolin injected was found in the basilar cisterns and subarachnoid spaces and only a minimal amount, if any, was noted in the fourth ventricle.

We are unable to explain why our results differ from those of other authors and why we failed to produce lasting arterial hypertension. We used the same kind and amount of kaolin as other investigators (no difference was found in the action of the two preparations of kaolin used); only our method of recording the blood pressure was different. Whereas, other authors used the indirect cuff method, we preferred the direct arterial puncture, the reliability of which has been proven by many recent investigators. We also checked the accuracy of our blood pressure readings by occasional use of larger cannulas (18 and 17 gauge).

Summary. A suspension of kaolin injected into the cerebello-medullary cistern of 9 dogs failed to produce a significant or sustained elevation of blood pressure, although considerable internal hydrocephalus was present in all autopsied dogs.

13011

Production of Deciduomata in Ovariectomized Mice Receiving Progesterone.*

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It has been recognized since the original experiments of Loeb¹ that the corpus luteum hormone is essential for the development of the maternal portion of the placenta. The belief has been quite general,² however, that this hormone must be supplemented by estrogen for the reaction to occur. Apparently the only instance of the induction of placentomata with progesterone alone is reported by Selye,³ who traumatized the uterus of an ovariectomized rat receiving 15 mg of progesterone daily. In the experiments reported here much smaller amounts of progesterone were effective in eliciting

* These experiments were aided by a grant from the Fluid Research Fund of Yale University School of Medicine.

¹ Loeb, L., *J. A. M. A.*, 1908, **50**, 1897.

² Allen, E., Hisaw, F. L., and Gardner, W. U., Chapter VIII in *Sex and Internal Secretions*, edited by Allen, E., Danforth, C. H., and Doisy, E. A., 1939.

³ Selye, H., *Proc. Soc. Exp. Biol. and Med.*, 1940, **48**, 343.

ing the decidual reaction in uteri of mice traumatized longer than 2 months after ovariectomy.

The observations were made on 17 young adult, ovariectomized mice. Ten days after ovariectomy one horn of the uterus in 7 animals was slit throughout its length and 0.5 mg of progesterone[†] daily was injected subcutaneously beginning at operation. The 2 animals autopsied one day and one animal autopsied 2 days after operation showed developing deciduomata. One animal on the third day showed no decidual reaction. The remaining 3 animals had well developed deciduomata on the second, third, and fourth days.

In another group of 6 mice 68 days after ovariectomy one horn of the uterus was slit throughout its length and 3 sutures were placed in the other horn, and the animals were killed 6 days later. Daily injections of 0.5 mg of progesterone were started 7 days before operation in 4 animals and at operation in 2 animals and continued until autopsy. Six days after operation placentomata were found in 3 of the pretreated animals and in one of the 2 animals started on progesterone at operation.

In a final group of 4 mice 70 days after ovariectomy one horn of the uterus was slit and threads placed in the other horn as before. Progesterone was injected daily beginning 3 days before operation, the dose being 0.25 mg in 2 animals and 1.0 mg in 2 animals. At autopsy 3 days after operation deciduomata were present in 3 animals and absent in one of the animals receiving the lower dose.

In most instances the deciduomata were macroscopic, bead-like endometrial thickenings, composed in all cases of large, basophilic, often multinucleated cells, in which mitoses were numerous. In the smaller and younger deciduomata all intermediate stages of transformation of cells of the endometrial stroma into decidual cells could be seen. Apparently the uterine trauma merely exaggerated greatly the enlargement of the stroma cells which characteristically occurs in the mouse in response to progesterone.⁴ Administration of the progesterone prior to traumatizing the uterus resulted in larger placentomata than treatment started at the time of operation.

Uterine trauma in 78 spayed mice receiving estrogen or androgen or no treatment consistently failed to result in decidual reactions.⁵ Various amounts of progesterone over various periods have likewise

[†] The progesterone was supplied by Ciba Pharmaceutical Products, Inc., through the courtesy of Mr. R. C. Mautner. This substance was dissolved in sesame oil in such concentrations that each of the doses was contained in 0.05 cc of oil.

⁴ Hooker, C. W., *Proc. Soc. Exp. Biol. and Med.*, 1940, **45**, 270.

⁵ Hooker, C. W., *Anat. Rec.*, 1941, **79**, 211.

consistently failed to elicit deciduomata in 70 ovariectomized mice not subjected to uterine traumatization.

The mouse is apparently capable of producing progesterone in amounts equivalent to 1.0 mg injected daily;⁶ and the equivalent of the smaller injected amounts is assuredly produced normally by the ovaries of the mouse during pregnancy, pseudopregnancy, and lactation.^{4, 6} Moreover, the long period after ovariectomy precludes any direct involvement of estrogen as such in these reactions, and presumably also rules out any preparatory action of this hormone.

Thus, without the recent or simultaneous action of estrogen, progesterone in physiologic amounts is capable of eliciting the development of placentomata in the suitably traumatized uterus of the mouse.

13012

Capsulation of *Neisseria gonorrhoeae*.

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We have succeeded in demonstrating and staining the capsule of *Neisseria gonorrhoeae* by a simple method. The presence of a capsule about the gonococcus has been reported only a few times and not substantiated, so that the Committee for Survey of Research on the Gonococcus and Gonococcal Infections¹ concluded, "The opinion of the majority is that the gonococcus does not form a capsule." Israeli² using a modified Hiss capsule stain found a clear or lightly stained zone, one to 3 times as wide as the organism; Szelyasi³ claimed that in older cultures the capsule stained more intensively, although he did not describe the capsule. Recently Almaden⁴ mordanted smears by Bailey's method, staining with carbolfuchsin, and stated that capsules could be found when the organisms were in the mucoid state.

In our work various technics have been tried, and finally Churchman and Emelianoff's⁵ method, with modifications, was successful.

⁶ Pfeiffer, C. A., and Hooker, C. W., *Am. J. Physiol.*, 1940, **131**, 441.

¹ Bayne-Jones, S., Chairman, *Am. J. Syph., Gon. and Ven. Dis.*, 1936, **20**, 5.

² Israeli, C., *J. Am. Med. Assn.*, 1921, **76**, 1497.

³ Szelyasi, J., *Dermatologische Wschr.*, 1932, **94**, 204.

⁴ Almaden, P. J., *J. Infect. Dis.*, 1938, **62**, 36.

⁵ Churchman, J. H., and Emelianoff, N. V., *J. Exp. Med.*, 1933, **57**, 485.