

2 female rats which had been hypophysectomized for several months. Vaginal estrus occurred about 24 hours later and continued for 9 days, at which time one of the animals died and one was autopsied.

PMS powder was made into pellets the weight of which ranged from 2.5 to 5.5 mg. A pellet was put in the eye of each of 2 female rats and in the eye of each of 6 male rats, all of which were hypophysectomized at the time of implantation. Continuous vaginal estrus was induced and maintained in the females for 17 days. No hormone was recovered from the eyes of these 2 females at autopsy, nor from the eyes of any of the males. Nevertheless the testes of 3 of the 6 hypophysectomized males were moderately large 3 weeks after hypophysectomy. The maintained testes revealed histological evidence of spermatogenic activity. There was but slight stimulation of the interstitial cells, as determined both by the small size of the accessory organs and by the histological appearance of the interstitial tissue. It will be noted that PMS tended to be only gametokinetic when implanted in the eye. The study of Saunders and Cole⁷ suggests that this was a quantitative rather than a qualitative manifestation.

A progesterone pellet weighing 4 mg was implanted in the anterior chamber of the eye of a castrated male rat parabiotically joined with a hypophysectomized male. Gonadotropic hyperactivity of the anterior pituitary of the castrate was prevented by the progesterone, since the testes of the hypophysectomized twin did not remain normal, as has been reported,⁸ but regressed.

Summary. Pellets of testosterone propionate, stilbestrol, pregnant mare serum, and progesterone implanted in the anterior chamber of the eye of rats produced effects characteristic of each particular substance.

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Method for Preventing or Diminishing Peritonitis From Leakage After Intestinal Resection or Perforation.

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The high degree of resistance to infection possessed by the peritoneum is well known. Despite that, the mortality from peritonitis

⁷ Saunders, F. J., and Cole, H. H., *Endocrinology*, 1938, **23**, 302.

⁸ Cutuly, E., and Cutuly, E. C., *PROC. SOC. EXP. BIOL. AND MED.*, 1937, **37**, 477.

following bowel resection (particularly colon) is very high. This is not due to soiling at operation but to leakage from a defect which subsequently develops in the suture line. Attempts to protect the peritoneum against such peritonitis have been made by the intraperitoneal injection of dead bacteria, amniotic fluid, glucose, etc., but without marked success.

The following observation suggested a method of avoiding such peritonitis. In a case of perforated diverticulitis of the sigmoid the perforated loop was drawn out of the peritoneal cavity and kept wrapped in normal-saline-moistened gauze on the abdominal wall for 25 days. During this time the perforation closed spontaneously and the loop was then freely washed with normal saline and repositioned in the peritoneal cavity. The patient made an uneventful recovery.

If it were true that a loop of bowel which had been kept wrapped in saline-moistened gauze out of the peritoneal cavity on the abdominal wall for several weeks could be safely replaced in the peritoneal cavity after merely washing it freely with normal saline solution, then the anastomotic suture line might be exteriorized, kept under observation until safe and then repositioned. If it broke down and leaked, it could not leak into the peritoneal cavity which was already sealed off.

Subsequently where resection and anastomosis was done the anastomosed loops were kept in saline-moistened gauze outside the peritoneal cavity on the abdominal wall. When it was seen that the anastomotic line was safely healed (usually after 8-12 days) the bowel loops were freely washed with normal saline solution and repositioned in the peritoneal cavity. Clinically, peritonitis did not develop. In 2 instances a small area of necrosis developed at the suture line and perforation with fecal leakage followed. The leakage was outside the abdominal cavity, however, where peritonitis could not occur. One perforation was closed by suture and 8 days later the bowel was repositioned in the peritoneal cavity, and in the other case the perforation closed spontaneously after which the bowel was replaced. In all, 19 patients have been treated by exteriorization of the questionable loop until assurance against leakage was certain and then replacement within the peritoneal cavity without the development of peritonitis.

This method is applicable only in cases where the mesenteric attachments are long enough to allow for exteriorization.

It is also applicable in cases of localized inflammation of the bowel with or without perforation since here also the questionable or already perforated loop may be exteriorized and the contribution

to more peritonitis stopped until healing has occurred, after which the loop may be repositied.

Summary. A new method for diminishing peritonitis from leakage after resection or perforation of exteriorizable bowel is presented. It is based on the observation that it is safe to reposit within the peritoneal cavity, bowel which has been exteriorized for several weeks, and on the proposition that peritonitis from leakage cannot occur if the leak (actual or potential) is walled off outside the peritoneal cavity.

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A Variable in the Sensitivity to Bone-Conducted Sounds.*

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It is well known that the perceptive apparatus essential to hearing is located in the internal ear which is filled with liquid. It is also known that air vibrations are not effectively conducted into liquid directly on account of the impedance differences in the two media. Weber proposed that the middle ear apparatus had the function of a resistance matching transformer which drove, as it were, the air vibrations into the liquid and in this manner conferred great sensitivity in the reactions of the perceptive apparatus to air-conducted sounds. He believed that the tremble in the innermost ossicle, the stapes, located in the oval window, produced a mass shifting in the labyrinth liquid which could come about only through compensation motions at the second window in the internal ear, the round window. This mass shifting of the liquid is thought to result in transverse vibrations of the membranous partition between the two windows and these transverse vibrations, it is thought, in turn constitute the physical activation essential to audition. Curiously enough, the interpretation is founded on two assumptions which are physical impossibilities and the described displacements, which form the basis for all theories of hearing, have never been experimentally demonstrated.

It was known in the sixteenth century that the internal ear also

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