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## Abstracts

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# ABSTRACTS



**ATROPINE BLOCKAGE OF OVULATION IN THE COW AND ITS POSSIBLE SIGNIFICANCE.** Until recently it has been believed that the process of ovulation was entirely under the influence of hormones. The experimental work reported here indicates that the autonomic nervous system may also be involved.

The time of ovulation was determined for five heifers in a control estrous period and in a subsequent estrous period in which atropine was administered at the beginning of heat. Ovulation was delayed from 24-66 hrs. in four of the five heifers by the atropine treatment.

[Hansel, W., Trimberger, G. W. Atropine blockage of ovulation in the cow and its possible significance. *Jour. of Animal Science*, 10:719-724 (Aug.) 1951.]

**THE PATHOLOGY AND SYMPTOMATOLOGY OF TRANSMISSIBLE GASTROENTERITIS.** In this experiment baby pigs were artificially infected with gastroenteritis by being fed 2 cc. ground gastro-intestinal tract from naturally infected pigs. Clinical studies of the infected pigs were made as well as gross and microscopic postmortem examinations.

Transmissible gastroenteritis is a sporadic disease characterized by diarrhea, vomiting, dehydration, and high death losses in baby pigs.

On postmortem examination, there may be found, singly or in combination, gastritis, enteritis, degeneration of the kid-

neys, congestion of the mesenteric blood vessels, and an atony of the intestine with fluid contents.

The microscopic changes in the mucosa of the gastrointestinal tract varied from congestion of the terminal blood vessels to desquamation of epithelium, necrosis, and cellular infiltration.

In the kidney, albuminous degeneration, congestion of the blood vessels of the cortex and medulla, and desquamation of some tubular epithelium was the most common finding.

Inclusion bodies were not demonstrated with the techniques employed.

[Bay, W. W. Doyle, L. P., Hutchings, L. M. The Pathology and Symptomatology of Transmissible Gastroenteritis. *Amer. Jour. of Vet Research*, 12:215-218 (July) 1951.]

**FALLACY OF A CURRENT SURGICAL FAD — THE THREE-MINUTE PREOPERATIVE SCRUB WITH HEXACHLOROPHENE SOAP.** Quantitative and qualitative tests of skin disinfection demonstrate that the presently popular brief period of hand washing with soap or a synthetic detergent containing hexachlorophene (G-11) is not as efficacious as has been so enthusiastically claimed.

It appears that the bacterial populations of the hands of different people vary in susceptibility to the agent. The fact that some individuals harbor a bacterial flora that is resistant to the action of hexachlorophene injects a disturbing element of uncertainty into its exclusive use in preparing hands for operation. Even in those

persons whose cutaneous bacterial flora has been shown by appropriate tests to be sensitive to hexachlorophene, an occasional brief wash with G-11 soap cannot be relied upon to keep the hands relatively free from infectious germs (as has been alleged), either under rubber gloves or in ordinary conditions of life.

For those who insist upon a time-saving, easy method of hand disinfection, the following procedure is recommended: Wash the hands and arms without a brush for three minutes, taking time out to trim and clean the nails; dry with a sterile towel; then wash for 60 seconds in 70 percent alcohol using gauze friction. The degerming effect of this routine is not as great as with the conventional alcohol wash, but it is superior to that obtained by a quick wash with G-11 soap.

[Price, P. B. Fallacy of a Current Surgical Fad. *Annals of Surgery*, 134:476-484 (Sept.) 1951.]

**PARTIAL HEPATECTOMY IN THE DOG. AN EXPERIMENTAL STUDY.** Despite a growing interest in the problem, the liver remains one of the most surgically inaccessible of all the organs. This is partially due to its extreme vascularity and our relatively unsatisfactory methods of hepatic hemostasis. This deficiency is apparent in the established but often fruitless methods of controlling hemorrhage from the hepatic parenchyma in patients with severe traumatic lacerations of that organ. All too frequently, fear of hemorrhage discourages attempts to erradiccate primary or metastatic tumors of the liver which would otherwise be amenable to surgical extirpation.

This study was undertaken in an effort to evaluate the effect upon the experimental animal of segmentally occluding the portal blood supply to major segments of the liver during partial hepatectomy, both singly and in conjunction with simultaneous but temporary occlusion of the arterial supply. Our primary aim has been to acquire information which might aid in the development of an operative

approach permitting a definitive and unhurried attack upon surgical lesions in the right lobe of the liver in surgical patients.

Conclusions:

1. Permanent ligation of the branch of the portal vein supplying two of the three primary lobes of the liver and simultaneous temporary occlusion of the common hepatic artery are compatible with life in the dog and permit a relatively bloodless operative approach to the liver.

2. Such a procedure has not produced clinically significant physiologic disturbances in dogs studied as long as six months postoperatively.

3. Maintenance of uninterrupted portal blood flow through a relatively small segment of the liver materially reduces the risk of central occlusions of the remainder of the hepatic blood supply during partial hepatectomy in the dog.

[(DeWeese, M. O., M.S., and Lewis, Clayton Jr. M.D., Ann Arbor, Mich. Partial Hepatectomy in the Dog. *Surgery* 30:642-651, October, 1951).]

### **STUDIES ON THE PATHOGENICITY OF BRUCELLA SUIIS FOR CATTLE**

A study involving the artificial infection of the bovine udder with *Brucella suis* yielded the following facts.

Under the conditions of the experiment reported here, it has been demonstrated that *Br. suis* is capable of causing brucellosis in cattle following intramammary exposure. Active infection of pregnant cattle with *Br. suis* did not result in premature expulsion of fetuses.

In such cases of active infection resulting from exposure to *Br. suis* via the mammary tissues, acute cases of bovine mastitis developed with the elimination of living *Br. suis* in the milk from affected quarters. Such infection resulted in extreme inflammatory reactions in the exposed quarters with concurrent gross alterations of the mammary secretions and acute symptoms in the cases of marked mastitis.

Microscopically, the pathologic changes were characterized by focal infiltrations

of lymphocytic and polymorphonuclear cells both interstitially and into the alveolar sacs along with proliferations of fibroblasts and some desquamation of alveolar epithelial cells.

Intramammary exposure of cattle to *Br. suis* resulted in blood serum-agglutination responses indicative of infection. At times, the responses reached a titer of positive at a serum dilution of 1: 10,240.

Postmortem examination of the animals for *Br. suis* resulted in recovery of the organisms from lymph nodes in widely scattered parts of the body.

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[Washko, F. V., Hutchings, L. M. Studies on the Pathogenicity of *Brucella suis* for Cattle II. Amer. Jour. of Vet Research, 12:165-174 (July) 1951.]

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## **O**VARIAN RESPONSE IN HEIFERS TO PROGESTERONE INJECTIONS.

It has been suggested that progesterone controls the estrual cycle by inhibiting the gonadotrophic complex, presumably LH, from acting upon the ovary. It would seem desirable to test this theory in cattle since here is a species which will allow a study of the day-to-day changes in the ovaries; this can be gotten by making daily palpations of the ovaries, per rectum. Also if progesterone therapy is to be used successfully in controlling follicular development and ovulation (and thereby, the estrual period), it would seem necessary to have a better understanding of the ovarian response to various dosages of the hormone.

This report deals with a study which was made to determine the effects of a range of progesterone dosages, and also the effect of varying the time and duration of treatment upon follicular development and the onset of estrus.

Five different dosages (50; 25; 12.5; 6.25 and 3.125 mg). of progesterone were injected daily into twelve-24-month-old-dairy heifers. The beginning of the injection interval varied from day-15 of the estrual cycle to the time when the animal was first noticed in heat. The numbers of

injections varied from one to twenty-eight.

The interval of time between the end of injections to beginning of heat decreased as the dosage level was decreased.

Fifty mg. daily is capable of inhibiting heat and ovulation if started before heat occurs. However, in order to inhibit most of the follicular development, the injection interval must be started earlier in the cycle (day-15).

Daily dosages of 25 or 12.5 mg. usually prevent heat and ovulation but follicles in the 20-30 mm. range will develop during treatment. Heat will occur with these follicles ovulating when the injection period is stopped. It was shown that follicles under the influence of prolonged daily injections of 12.5 mg. would regress and be replaced by another follicle at 2-3 week intervals. Dosages lower than 12.5 mg. had little, if any, effect.

The data can be interpreted in accord with the theory that progesterone inhibits the action of the gonadotrophic complex mainly LH, from acting upon the ovary.

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[(Verberg, L. C., Christian, R. E., and Casida, L. E., Ovarian Response in Heifers to Progesterone Injections. Journal of Animal Science 10:752-759 (Aug.) 1951.]

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It has been reported that the eyes of certain poultry breeds have a relationship to their vitality. Deep-red-eyed birds, it is said, are practically immune from the common diseases that beset poultry, whereas birds with pearl, gray or light red eyes are susceptible.

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Many big barns run north and south because in the old days farmers wanted to expose as little of the structure as possible to the effects of moss, which formed on the north side. The custom has carried over to the present day.

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Streptomycin production in the United States was over 190,000 lb. in 1950.