A METHOD OF PRODUCING EXPERIMENTAL INFECTIOUS SALPINGITIS

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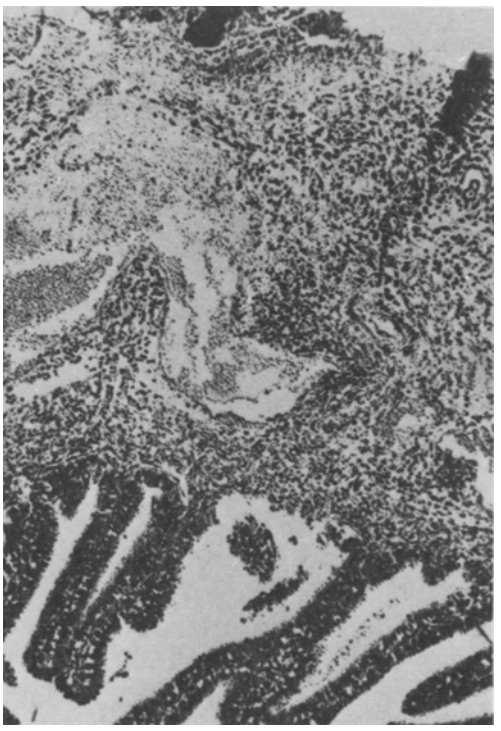
Because of the absence of reports in the literature of the production of experimental infectious salpingitis, it was decided to develop a suitable model and to study the character of the morphological changes observed in the tubes following infection and the times of appearance of these changes.

Experiments were carried out on 36 sexually mature gray rabbits weighing from 2700 to 3800 g. Under local anesthesia with 0.5% procaine solution, laparotomy was performed. One of the tubes was brought out and carefully wrapped in sterile towels. A catgut ligature was placed around the tube below the ampullary end near the fimbria, and the ligature was tied in this segment. Next, the ends of the same ligature were passed round again at a distance of 0.2 cm from the point of ligation of the tube, but were not tied. After this preparatory procedure essential to prevent the entry of microorganisms into the peritoneal cavity, the wall of the tube was pierced with a fine needle, which penetrated for a distance of 2 cm towards the proximal portion. From a syringe, 0.2 ml of a 24-h culture of Staphylococcus aureus (strain No. 209), containing 100 million bacterial cells, was injected into the tube. The needle was withdrawn and the tube ligated above the point of puncture by tying the previously inserted ligature. The abdomen was closed without drainage. Microorganisms were introduced into one tube and the other acted as control.



Fallopian tube of a rabbit on the 7th day after infection. Marked edema, congestion, and inflammatory infiltration of the muscular layer of the tube wall. Stained with Hematoxylin-Eosin, 80×.

On the 3rd, 7th, 10th, and 15th days after infection, two rabbits of each group were sacrificed by injecting air into the marginal vein of the ear. The tubes and the curnua of the uterus were removed for histological investigation. Sections were cut and stained with hematoxylin-eosin and by the methods of Van Gieson, Gram, and Goldman.

On the 4th day after infection, at autopsy, hyperemia of the serous membrane of the tube and of the uterine cornu was observed on the side of injection of the microorganism. The ampullary portion of the tube was twice as thick as on the opposite side. A small amount of hemorrhagic exudate was present in the lumen of the tube. On the 7th, 10th, and 15th days, a retort-shaped dilatation of the tube was observed in the ampullary portion (from 0.4 to 0.6 cm, compared with the original dimensions of 0.1-0.15 cm, while the wall had become thinner and the lumen contained a serous exudate. The results of the histological investigation showed that, on the 3rd day, signs of hemorrhagic exudation were predominant, with few signs of proliferation or degeneration.

By the 7th day, the exudate had become serous and proliferative processes were marked (see figure). By the 10th-15th day, considerable infiltration, mainly of the muscular layer, by lymphoid and plasma cells was still present. The resulting hydrosalpinx showed no tendency to absorb, and chronic salpingitis developed.

Hence, during observations on the development of an artificially induced inflammatory process in the fallopian tube, separate stages of the acute and subacute process were observed, and by the 15th day, morphological changes characteristic of chronic salpingitis had developed, resembling the picture found in the fallopian tube of women with acute salpingitis.

It may be concluded from the results of these investigations that the method chosen for reproducing salpingitis is evidently close to the clinical conditions.