Summary. Uterine and extrauterine fibroids can be induced in the guinea pig by a prolonged treatment with hexestrol. Like stilbestrol, hexestrol also is more tumorigenic than the free natural follicular hormones (estrone and estradiol). The tumorigenic power of hexestrol is even greater than that of stilbestrol. The tumorigenic power of stilbestrol is, like that of estradiol, greatly enhanced by esterification.

13360 P

Effects of Roentgen Irradiation upon Linear Rate of Flow in Cutaneous Lymphatics of Humans.

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The effects of irradiation upon the function of lymphatics is of clinical as well as experimental significance. Many clinicians believe that irradiation therapy can be used to obstruct lymphatics and thereby reduce the ease of metastasis of malignancy. Sufficient physiological observations necessary to evaluate the opinion are lacking. Teneff and Stoppani[1] employing thorium dioxide and India ink for visualization found evidence of changes in lymph circulation of the subcutaneous tissues of dogs and guinea pigs only when large doses of X-ray sufficient to produce destruction of cells were used. Hodes and Griffith[2] using the thorium dioxide method of Menville and Ané[3] failed to find any significant interference with lymph flow in the subcutaneous lymphatics even with doses as large as 2,200 r. Accordingly, the observations to be described were initiated in an attempt to learn some of the effects of roentgen irradiation upon the cutaneous lymphatics of humans.

Seven white adults (19 to 57 years of age) who were receiving roentgen therapy for various clinical states were selected as subjects. The linear rate of flow in the cutaneous lymphatics of 12 different skin areas were studied 45 times by the colloidal dye method of McMaster.[4] The subjects rested quietly for about 30 minutes in the

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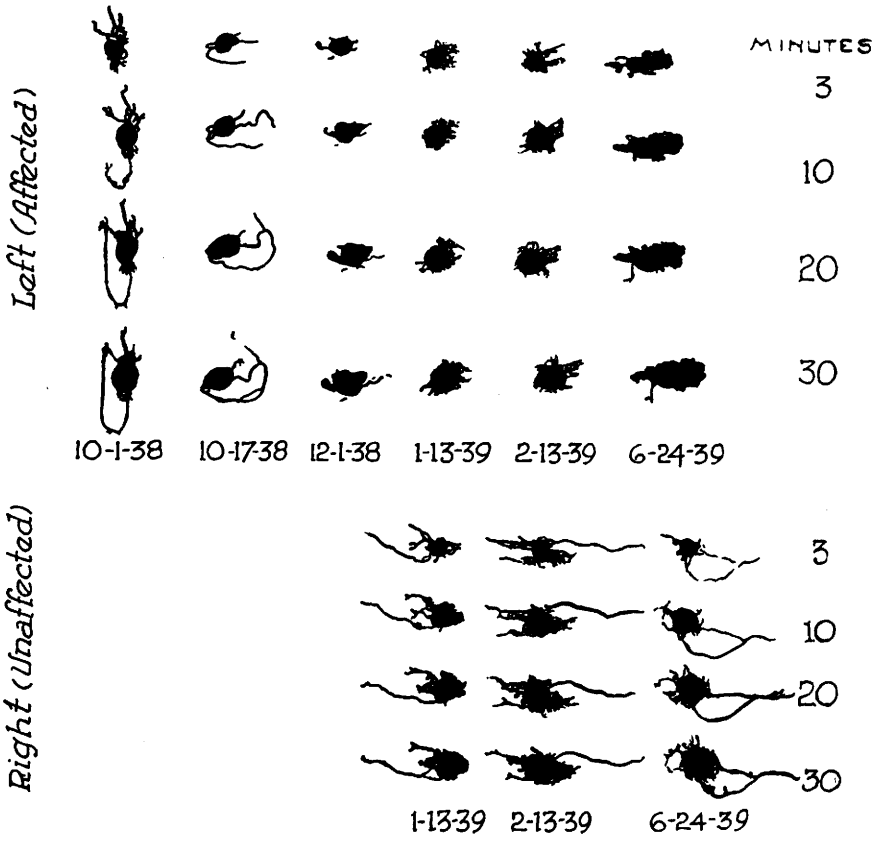

FIG. 1.

Tracings of the cutaneous lymphatics of the right and left side of the lower part of the abdomen of one subject. On the left or affected side, there was a first degree skin reaction produced by the irradiation (total dosage 1,187 r) while on the right side no visible reaction occurred (total dosage 370 r). The horizontal rows of tracings from above downward represent the visualized lymphatics for the respective 3-, 10-, 20-, 30-minute periods following injection of the dye, while the vertical rows represent the visualized lymphatics for the date indicated below.

supine or prone position, depending upon the area of skin studied, before the injections of the lymphatics were made. The visualized lymphatics were then traced on cellulose acetate sheets at intervals of 3, 10, 20, and 30 minutes following each injection, the tracings being kept for future analysis for linear rate of lymph flow. The injections were made just before and at varying periods after beginning therapy. When two areas were studied the injections were made within 90 seconds of each other. In order to control the amount of dye injected, a syringe previously described was em-

ployed.[5] All irradiated areas of skin extended well beyond the lymphatics visualized.

In the 10 different irradiated areas studied in the subjects who received doses varying from 220 r to 450 r the linear rates of lymph flow remained within normal variations. One subject received 370 r on the right side of the lower part of her abdomen and 1,187 r on a comparable area on the left. On the former side there were no detectable changes in the linear rate of lymph flow. Six weeks following the production of a first degree skin reaction on the left side there was a definite decrease in the rate of flow. During the course of 8 months the rate remained normal on the right side, while that on the left remained markedly reduced (Fig. 1). It was also observed that there was a great tendency for the dye to diffuse locally around the site of injection, rather than to form small streamers as occurs in normal skin.

Summary. The data tend to indicate that small doses of X-ray (220-450 r) to the skin of humans are not likely to disturb the linear flow of lymph in the cutaneous lymphatics, while large doses sufficient to produce a first degree skin reaction probably will reduce the rate of lymph flow.

13361 P

"Leg-Weakness" in Laying Hens on an Ascorbic Acid-Free (Vitamin C) Diet.*

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Since 1919 many workers[1, 2, 3] have demonstrated the growth of chickens on a supposedly vitamin C-free diet. There are reports[4, 5]

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