THE FUNCTIONAL CONNEXION BETWEEN THE REPRODUCTIVE ORGANS AND OTHER GLANDS OF INTERNAL SECRETION.

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It has been shown previously that there is some definite connexion in white rats between the thymus gland and the gonads, more particularly in the male. In animals where a condition of hyperthymism had been established, there was found to be marked degeneration of gonads in the male, and sterility in the female; or—if the animal were young—delayed sexual development.¹ Further experiments, with x rays, failed to show that any very marked influence is exerted by the thymus directly on the gonads, but irradiation of the testes or ovaries determined hypertrophy of the thymus.² At the same time changes in the pancreas and suprarenal glands were usually observed, and it was to follow up the connexion between the suprarenal glands, pancreas, thymus, and gonads, that the present series of experiments was begun.

In the series previously reported it was thought that some of the changes observed in the female might have been due to the influence of pregnancy rather than to an indirect action of x rays through the ovaries. Consequently material has been collected from a large series of pregnant rats at various stages of pregnancy, and the results, it is hoped, will shortly be published.

At the same time a series of experiments was begun to investigate directly the functional connexion said to exist between the suprarenal cortex and the gonads. Owing to the difficulty of obtaining fresh material for feeding experiments, inoculation with various preparations of suprarenal cortex was tried. Full details of the preparations, method of experiment, and findings will be published later, but it was thought that the following preliminary note might be of interest. White rats only have been used up to the present.

Results.

1. In nearly every case the hair began to come out, although the coat was usually very fine and glossy. In a few cases, however, with young animals, the hair came out so much that the whole coat looked quite ragged.

2. The animals appeared to be perfectly healthy. There have been a very few exceptions, where the inoculations were pushed.

3. *Thymus*.—Macroscopically, no constant variation has yet been found. Microscopically, the whole gland appears unusually vascular, but otherwise normal.

4. *Pancreas*.—Hypertrophy of the islets of Langerhans has been observed, but is inconstant. Since the distribution and size of the islets varies so much in normal animals, further investigation of this point must be carried out before it will be possible to arrive at any conclusion.

5. *Suprarenals*.—The gland does not appear to be altered in size. Histologically the medulla is normal. The cortex, particularly the zona reticularis, is unusually vascular. Large spaces have been seen in the zona glomerulosa between the cells, the spaces containing blood and debris. Signs of disintegration are present in the two outer layers of the cortex.

6. *Testes*.—Very marked degeneration has been obtained. The degree of disintegration appears to depend on the duration of treatment, and the stages so far observed are exactly similar to the degenerative changes previously obtained under the action of x rays in graduated doses.

7. *Spleen and Liver*.—Normal.

The material from the female rats has not yet been examined microscopically.

In another series of experiments feeding the animals with desiccated suprarenal cortex brought about some change in the rate of growth.

If the feeding was begun at the age of about 4½ weeks, the rate of increase of weight was less, both in males and females, than in the controls. On the other hand, if the feeding was begun either earlier (at 3 to 3½ weeks) or later (at 5½ weeks), the rate of increase of weight was markedly greater in both males and females than in the controls.

The possibility of breeding from these treated animals and the microscopic examination of the glands is still under investigation.

The expenses of this research are being defrayed by a grant from the Royal Society.

REFERENCES.

¹ *Journ. of Phys.*, xlvii, 6, 1914. ² *Ibid.*, 1, 7, 1916.

Memoranda: MEDICAL, SURGICAL, OBSTETRICAL.

APPENDICECTOMY.

THE ileo-inguinal incision described by Mr. Whitelocke,¹ like the oblique inguinal incision of McBurney, may prove quite successful in uncomplicated cases of appendicitis, but very few surgeons nowadays would, I am sure, like to pin their faith to a definite diagnosis of an uncomplicated appendicitis. In fact, the mimicry of appendicitis by many different pathological conditions is so great that it is sound surgery to adopt an incision which will enable the surgeon to deal not only with a diseased appendix, but also with any accompanying pathological lesion which may be present.

Mr. Whitelocke seems to emphasize the fact that the ileo-inguinal incision will prevent the occurrence of hernia, but surely the well-tried incision of Battle—where the rectus muscle is left intact—is much to be preferred, seeing that the occurrence of hernia after Battle's incision is relatively very uncommon, even after appendicectomy for suppurative appendicitis. Through the same incision also any complication can be dealt with at the same operation, and thus prevent the surgeon from performing an incomplete operation.

I recently had under my care at the Victoria Hospital, Keighley, three patients who well showed the advantages of Battle's incision. In each case the doctor sent the patient to hospital with a diagnosis of acute suppurative appendicitis, but in the first case there was a well marked gangrenous appendix firmly adherent to an ovarian dermoid cyst with torsion of its pedicle. The second was a gangrenous appendix adherent to a pyosalpinx, and the third a gangrenous appendix adherent to the bladder. In each case I am convinced that the complete surgical treatment required would have been quite unsatisfactorily performed by the ileo-inguinal incision.

Another patient, a young lady aged 22 years, was operated upon by me at a nursing home for what was clinically an ordinary recurrent appendicitis. My diagnosis in this case was confirmed before operation by a very eminent surgeon. At the time of operation the appendix showed the ordinary signs of chronic inflammation with two faecal concretions in its lumen. Having used Battle's incision, I examined the other abdominal organs, and found a shrunken gall bladder full of stones. By extending the original incision upwards I also performed cholecystectomy. In this way the patient was in all probability saved the necessity for a further operation at a later date.

Similar experiences are common to every surgeon, so that, unless we have more certain evidence for the diagnosis of a definite uncomplicated appendicitis, surgeons will, I have no doubt, prefer to use an incision with a much wider application than that afforded by the ileo-inguinal one suggested by Mr. Whitelocke.

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ACUTE OEDEMA OF THE LUNGS.

THE cases described in recent issues under the title "Acute suffocative catarrh," especially those of Dr. Anderson and Dr. Gale, appear to me to be identical with the disease called "acute oedema of the lungs," of which a description is to be found in the latest edition of Osler's *Practice of Medicine*.

Some years ago I had the opportunity of observing the following case: A man, aged 57, previously strong and healthy, was awakened about midnight by a feeling of suffocation. Almost immediately after large quantities of

¹ BRITISH MEDICAL JOURNAL, February 14th, 1920. p. 211.