THE MUCOUS MEMBRANE OF THE UTERUS: WITH SPECIAL REFERENCE TO THE DEVELOPMENT AND STRUCTURE OF THE DECIDUAE

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Trieste

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Mucous Membrane of the Uterus

WITH SPECIAL REFERENCE TO

THE DEVELOPMENT AND STRUCTURE OF THE DECIDUÆ.

BY

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WITH FOURTEEN ILLUSTRATIONS.

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THE

MUCOUS MEMBRANE OF THE UTERUS.

INTRODUCTION.

In the fall of 1871, while pursuing my microscopic studies in the pathological laboratory of the General Hospital of Vienna, I was requested by my honored friend, Prof. Späth, Director of the Second Obstetrical Clinic, to examine an aborted mass, probably an ovum of the sixth week, in order to determine the structure and condition of the various tissues.

The outer wall of this ovum was formed by a thick, resistant membrane, which presented a most striking and interesting microscopic appearance; the tissue consisting in some places of large, well-marked epithelial cells, whereas in others it presented rather the appearance of young connective tissue; throughout its entire extent it was traversed by large, irregular sinuses, between which and the openings of apparently well-defined ducts, which appeared upon the smooth inner surface of the membrane, no direct connection could be traced; the capillaries were large, and distended with blood.

The specimens were examined by many, even by the veteran Rokitansky himself, who turned away with a word of thanks, but vouchsafed no explanation. The structure, it was evident, did not appertain to the ovum, but to the womb, it could be nothing else but the decidua; was it normal? was it pathological?—these questions no authority could answer, and Dr. Kundrat, first assistant to Prof. Rokitansky, appreciating equally with myself their high scientific and practical interest, we determined to seek for the answer, to study this still little-known structure, and give to the profession the microscopic anatomy

of the decidua, of the mucous membrane of the womb during all its phases and physiological changes.

The pathological laboratory of the Vienna Hospital, within whose walls the post-mortem examinations of the immense hospital, as well as the legal inquests of the gay capital, are held, was perhaps the only place where these researches could be undertaken, as none other could have yielded us the extent and variety of the rare material necessary.

In the course of the winter we were enabled to examine a large number of uteri in all possible conditions; more material was afforded by the post-mortems of the Charité and the obstetric clinic of Berlin during the summer of 1872, but above all by the extensive collection of ova in the anatomical museum of Berlin. These latter specimens I was enabled to study most thoroughly, as the unequalled liberality of my honored teacher, Prof. Reichert, had placed them entirely at my disposal.

The result of these researches was announced in a paper which was read by Dr. Kundrat before the "Gesellschaft der Aerzte" of Vienna on the 25th of October, 1872, and appeared in Stricker's "Medizinische Jahrbücher" for 1873.

The simultaneous publication in this country, which had been decided upon, was delayed, and other questions engrossing my attention, I intended to lay this matter aside for the present, knowing that such of the profession as were more especially interested in the results obtained, would refer to the German publication, and hoping at some future time to present a paper which would more thoroughly exhaust the subject, as the wealth of material accumulated would enable me to do.

To this resolution I have not been able to adhere; I deem it important that certain of the views expressed in our previous publication, which I cannot endorse, and which were developed after my departure from Vienna, should be corrected; other circumstances also, together with the request of friends, force me to what I might almost call a republication of our paper of 1873; the illustrations are all copied from this. I will not confine my remarks to the decidua, the mucous membrane of the womb during pregnancy, its period of highest vitality and greatest physiological importance, but will briefly discuss the structure of the uterine mucosa in its various changes, from its

first appearance in the fœtus, throughout its period of development in the child and its long season of maturity and functional activity, to the time of involution and inactivity. This I deem necessary in order that the picture presented may be a more perfect one, and that the result of our investigation may be more fully understood, as the macroscopic, and more especially the microscopic changes, which the mucous membrane of the womb undergoes during the various phases of female life, have never been thoroughly studied and defined.

I shall endeavor to present an accurate delineation of the membrane in all its various conditions *as characterized by the specimens examined;* confining myself strictly to these, I shall avoid a discussion of the numerous conflicting theories, calling attention merely to the more important particulars in which I deviate from current and accepted doctrines.

My conclusions are based upon the examination of a large number of uteri in various conditions, and of ova as well as uteri during all the periods of gestation. Seventeen uteri were examined containing normal, healthy ova in all stages of pregnancy, from the second week after conception to full term; of two hundred others, some were virgin wombs, some exhibited the menstrual condition, some that after abortion, and others that from the first day to the sixth week after delivery; in addition to these a large number were examined before the establishment of functional activity.

Twenty-nine of the ova were products of less than a month's gestation, as till larger number examined belong to later periods.

3003 Locust St., St. Louis, *April*, 1875.

PART I.

THE MUCOUS MEMBRANE OF THE WOMB IN ITS DEVELOPMENT UP TO THE TIME OF PUBERTY.

THE mucous membrane of the womb before it has attained functional maturity, as in the child, consists simply of round or polygonal cells with round nuclei imbedded in a very fine network of connective tissue. It possesses this same formation in uteri of incomplete or retarded development, which macroscopically also resemble that of the child in the flat hour-glass shape and in the prominence of the cervix. Spindle-shaped cells are found only around the vessels and near the surface.

All these elements, as well as the ciliated epithelium which lines the surface, are more delicate than in the fully developed uterus; the essential difference between this and the infantile womb, however, consists in the absence of all glandular structure in the latter.

No glands are to be found in the even, hard, uterine mucous membrane of the fœtus; nor do we meet with any trace of them during the first years of life, during which the membrane increases but little in thickness, averaging about 0.0078 inch (0.2 mm.), whereas in the seven months fœtus it measures between 0.0035 and 0.006 inch (0.09–0.15 mm.).

The small depressions existing in the mucosa near the lateral angles of the uterine cavity are not indicative of beginning glandular development, being nothing more than radiations of the palmæ plicatæ, which, in children, are continued beyond the cervix.

A change takes place in the third or fourth year, at which time the membrane has increased in thickness to 0.0118–0.0196 inch (0.3–0.5 mm.), and the first traces of the develop-