Proliferating cysts in the ovary of a seven months' foetus / by Alban Doran.

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Proliferating cysts in the ovaries of a seven months' fœtus.

By Alban Doran.

[With Plate VI, fig. 2.]

A few months since, when engaged in the examination of healthy human ovaries, I removed the internal generative organs from a seven months' fœtus, kindly forwarded to me by my friend Dr. Champneys. Presuming from their outward appearance that the ovaries were absolutely normal, I thought that they would afford me a favorable opportunity for investigating the development of the Graafian follicles, and particularly for observing the primitive involution which these follicles undergo long before puberty. For this purpose I first entrusted the ovaries to Dr. Vincent Harris, whose skill and experience in preparing microscopic specimens were sufficient to ensure the production of the fine series of sections which are brought forward to-night.

Each ovary measured two fifths of an inch in length. The right proved to be perfectly normal. Hundreds of Graafian vesicles were scattered over the stroma. In the tissue of the hilum, but there only, were thick-walled vessels. It is significant that whilst in the left ovary not one of the smaller cystic cavities presently to be described could be positively identified as an ovisac, in this, its fellow, the follicles forced themselves on the observer's notice at the first glance. Some of the deeper follicles lay close to the thick-walled vessels with which they are so often confounded. The ova were very distinct; the epithelial lining of the follicles was far more prominent than the slender endothelium which bounded the lumen of the thick-walled vessels, but much thinner than the lining of the morbid cysts in the left ovary. The spindle-celled stroma of the parenchyma in this normal ovary contrasted strongly with the fibrous and elastic tissue which replaced it in the same organ on the left side.

The left ovary appeared quite flat, like its fellow, and had the sharply-defined, sinuous border characteristic of the ovary in later fœtal life. Dr. Harris and myself were much surprised, on examining the sections, to find that the ovary contained three cysts, of almost equal size, lying in a row along its long axis, and plainly visible to

the naked eye, which could also detect exuberant vegetations growing from their walls. The cysts were almost perfectly spherical; the largest measured one-twelfth, the smallest one-sixteenth of an inch in diameter.

Examining the sections under the microscope, I found that the cysts, owing to their great relative proportions, encroached equally on the vascular tissue of the hilum and on the more superficial part of the ovary towards the tunica albuginea. They were surrounded by much condensed fibrous tissue. Into their interior grew an abundance of branched vegetations covered with a stratified layer of columnar epithelium. After repeated examination I could detect cilia on some of the superficial epithelial cells. In the narrower processes of the vegetations the stroma appeared purely fibrous, but in the broader tufts there were epithelial bodies in the midst of the stroma. The tissue at the base of these same tufts passed into the substance of the ovary, external to the boundary of the cyst, the epithelioid cells being traceable throughout, from the stroma at the free end of the tuft to the stroma of the ovary. These cells were clearly the same which, found in the deeper parts of normal ovaries, are admitted to be relics of the tubes of the Wolffian bodies.

In one of the sections (where a fourth proliferating cyst could be seen) a mass of vegetations sprouted, without any capsule, from the outer end of the ovary. The epithelial lining was far more regular than in the intra-cystic growths, and on examining a section of the fimbriated extremity of the Fallopian tube connected with this ovary, the identity of its epithelium and subepithelial stroma with the epithelium and stroma in the free vegetations outside the ovary became self evident. In fact, these free growths must have been developed from the ovarian fimbria of the tube.

The stroma of the parenchyma of the left ovary contained an unusual amount of elastic fibre and a very scanty supply of the spindle cells seen in normal ovarian tissue—as in the fellow to this ovary. The germinal epithelium had atrophied and become converted into a true condensed, fibrous tunica albuginea. Towards the surface of the ovary were several enlarged vessels, some full of blood-corpuscles, and all recognisable by their thin endothelium and thick muscular coats. Close to them were several cystic bodies not exceeding one-fiftieth of an inch in diameter, and lined with columnar epithelium precisely similar to that which invested

the intra-cystic growths. At first these small cysts appeared to be true Graafian vesicles, but on careful examination it could be seen that none contained ova, and that the epithelium on their inner walls was made up of much larger cells, arranged with greater regularity than in the cellular lining of a true ovisac in any stage of its development. No such epithelium could be found within any of the normal follicles which swarmed in the opposite ovary. The stroma around these small cysts contained a great number of the epithelial cells already mentioned. In fact, these cysts were most probably an early and younger form of the larger proliferating cavities.

There can be little doubt, judging from the appearances described above, that the proliferating cysts were developed from vestigial remains of some of the tubes of the Wolffian bodies, not from those tubes which remain in the adult as the parovarium, but those which can be detected in the stroma of the ovary as certain epithelioid bodies. The existence and nature of these bodies is admitted and explained by most of the living authorities on ovarian histology, especially Balfour, who has distinctly traced them from the Wolffian body. Klein and Noble Smith describe them minutely in their 'Atlas of Histology,' chap. xxxii, p. 286, quoting His, Waldeyer, Romiti, Born, and Balfour, as holding the same opinions on the nature of the epithelioid bodies. Olshausen, in his work 'Die Krankheiten der Ovarien,' describes at great length certain proliferating cysts often confined to the ovary, but more often involving the broad ligament, and in both cases traceable to the vestigial remains of the Wolffian body in the ovary. This kind of cyst is well known to surgeons experienced in ovariotomy, and distinct from the simple, non-proliferating "parovarian cyst;" but I am not aware that it has ever been observed before in a fœtal ovary. Olshausen states that no cysts, except those originating in dilatation of the Graafian follicles, have been found in the ovaries in fœtal life.

The epithelial elements scattered in the stroma of a normal ovary representing a general atrophy of that part of the Wolffian body which becomes surrounded by ovarian tissue, it is reasonable to suppose that the proliferating cysts in this specimen represented tubes belonging to that body which have, on the other hand, become dilated and cystic. All these changes, normal and morbid, were to be seen in this same specimen. Firstly, the proliferating cysts, then the smaller cystic bodies, one fiftieth of an inch in diameter, and

hardly altered from their original condition as true Wolffian tubes, and lastly, the epithelial relics of other Wolffian tubes that have undergone normal atrophy.

The absence of Graafian vesicles was so marked in this ovary as to lead to the conclusion that the abnormal changes in the Wolffian tubes must have blighted their development at a very early period.

The general appearance of the ovary is well represented in the highly successful micro-photographs taken by Mr. Francis Fowke and brought forward this evening for exhibition, together with the microscopic sections, with which they may be compared.

March 15*th*, 1881.

DESCRIPTION OF PLATE VI.

Fig. 2 illustrates Mr. Alban Doran's Case of Proliferating Cysts in the Ovary of a Seven Months' Fœtus.

FIG. 2.—Proliferating cysts in a fœtal ovary. From a micro-photograph by Mr. Francis Fowke. Two of the cysts are shown, as magnified by a 2-inch objective. The right-hand cyst measures $\frac{1}{16}$ inch in its long diameter. No Graafian follicles can be seen, but numerous enlarged vessels are exposed by section, and between the cysts, towards the free border of the ovary, lie a collection of small cystic or tubular bodies, which under a higher power are found to be lined with an epithelium similar to that which invests the growths in the large cysts.

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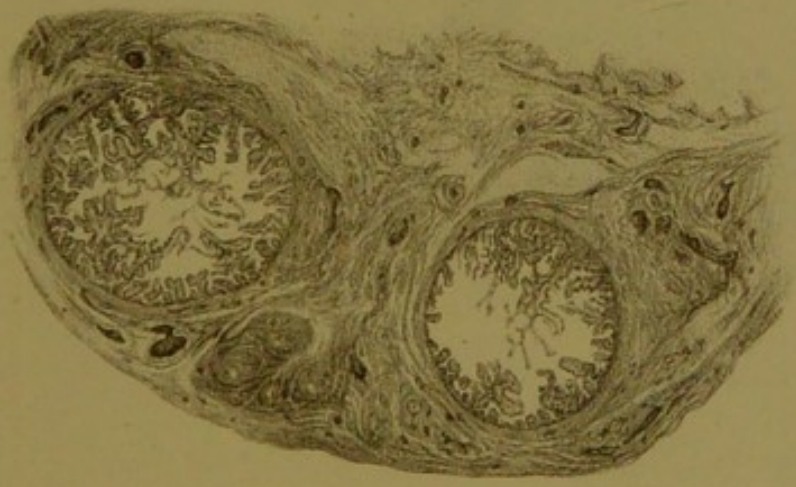


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