

less experienced than that distinguished physician might have taken the tumor for an ovarian cyst. It occupied the whole of the abdomen and distended it enormously, and the edge of the tumor could be felt in the pelvis. I opened the abdomen and then opened the liver, emptied between two and three gallons of hydatids, fastened the two wounds together by continuous suture, secured a drainage-tube well into the cavity, and succeeded in curing the patient. The case is published in the volume of the "Transactions of the Royal Medical and Chirurgical Society" for 1880, and since that time I have operated upon eight other cases of a similar character with perfect success in all. I have also opened the distended gall-bladder and removed gall-stones in three cases by a similar operation, and have in these cases also had perfectly successful results, so that we have a prospect of a remarkable extension of abdominal surgery in unexpected directions.

There is one condition of the ovary concerning which a very great deal of discussion has taken place, and upon which I am yet by no means clear that a satisfactory conclusion has been arrived at. I refer to the displacement which has been described as ovarian pregnancy. It is a question which has a much greater interest from a pathological than from a clinical point of view, because even if there be such a condition as ovarian pregnancy I do not see that the treatment required for it would be in any way different from that required in Fallopian pregnancy, which I have fully described in another chapter. Until the appearance of Velpeau's article in the "Dictionnaire de Médecine," most of the cases of extra-uterine pregnancy seem to have been regarded as instances of the actual impregnation and development of the ovum within the structure of the ovary itself, and it is very evident from the description of a number of cases of dermoid tumor of the ovary that these singular structures were also regarded as having this origin. In fact, I think I may say that between the incomplete development of a foetus in the dermoid cyst to its complete development in the extra-uterine pregnancy, there does not seem to have been any clear distinction until about 1850. The assertion, therefore, that ovarian pregnancy does really occur is made by the great majority of authors without any really critical examination of the facts of the case.

I have spent a great deal of time in the investigation of the literature of the subject, and I am bound to say that I am sceptical as to the reality of the descriptions of any of the instances which have yet been given of this phenomenon. Spiegelberg, according to Schmiet, has established the authenticity of nine cases and has added ten more; but Dr. Parry contents himself

with merely saying that the weight of authority is in favor of the possibility of ovarian pregnancy. Further than this I certainly am not inclined to go, for if we consider for a moment the chain of circumstances which alone could lead to such an incident, we can readily understand, in the first place, how extremely rare its occurrence must be; and, in the second place, how difficult it is to prove what is absolutely necessary—that the ovum was developed within the follicle which it had never left. We must imagine, in the first place, that the spermatozoa had penetrated the whole length of the Fallopian tube, a circumstance which must be of extreme rarity if the views of the physiology of the oviduct which I have advanced be correct. We must then further see that this incident must have occurred at the time when the pavilion has embraced the ovary, and the embrace must have occurred at the spot where the follicle was about to rupture. After all this the most extraordinary incidents of the process must occur: the ovum, instead of leaving the follicle when the rupture takes place, must remain within it; the spermatozoa must enter through the rupture; the rupture must then heal; the ovum must become reattached to the epithelial lining of the follicle; the rupture heals, and then the development of the ovum must take place within the walls of its original home. Supposing the whole train of these extraordinary circumstances to have occurred, it would not be impossible to imagine that the follicle would distend as it does in the case of cystic growth, and that we should have a case of true ovarian pregnancy.

During the progress and development, and in many of the troublesome accidents through which all cases of extra-uterine pregnancy must pass, there would inevitably occur such adhesions and displacements as would make it most difficult to prove that the actual seat of the foetus was within the tissue of the ovary. Among many other conditions which would have to be fulfilled the following are some of the most important. In the first place, of course it would be quite impossible to admit any case as one of ovarian pregnancy in which a most careful *post-mortem* examination had not been made, by a thoroughly competent observer. Then we should have to find that the uterus and both tubes were absolutely intact; that one ovary was present and that the other could not be accounted for save by its existence as the cyst of the pregnancy; and in the cyst wall of such a case there would have to be found microscopic evidence of ovarian tissue. In several cases of tubal pregnancy which I have dissected it was a matter of the utmost difficulty to find the corresponding ovary, even when it was perfectly clear that

the seat of the pregnancy was one of the Fallopian tubes. In one of my dissections I could not find the ovary, and yet that case was, with perfect certainty, one of tubal pregnancy. In Spiegelberg's paper there is only one case cited to which these tests apply with any degree of satisfaction, and therefore I give its details in full.

An abdominal section was performed under circumstances of great difficulty, and after peritonitis had been some time in existence the sac had become closely adherent to the great intestine and to the right wall of the pelvis. On both sides the tubes were normally distributed, but the left one, after a course of 7 ctm., disappeared in the walls of its broad ligament. The right tube extended 10 ctm. along the upper edge of the thickened, broad ligament toward a sac which was united by the *ligamentum ovarii* to the *ala vesperilionis* of the uterus; it had a diameter of 10 ctm. and was in a collapsed condition. After the tube had reached the sac it could be traced along its surface for a distance of 22 ctm. and was permeable for a distance of 12 ctm., and in the remaining 10 ctm. of its length it disappeared as a narrow, smooth band on the outer surface of the sac. There was in this neighborhood a small dermoid cyst in the wall of the sac without any distinct boundary. The sac itself had two layers, the outer of which was thick and firm, and the inner one fine and delicate, these two being capable of easy separation. The inner layer was clearly the chorion, for over its greatest part it had the structure of placenta, which was thickest at the bottom of the sac and thin at the upper part.

Spiegelberg therefore concludes that the right ovary was the bag containing the child. He could find no ovary on the right side, but he found distinct ovarian elements in the outer wall of the sac. It must here be pointed out that, in the first place, the *post-mortem* examination is admitted to have been not very efficiently performed, and the description given of the tube makes it, I think, quite as likely that it was a case of pregnancy in the broad ligament which resulted in the rupture of the tube on its lower aspect—that being the most common variety of the tubal pregnancies which are not fatal in their early rupture—as that it was a case of ovarian pregnancy. The fact that there was present an ovarian tumor is proved by the existence of a dermoid cyst. This would account for the somewhat wide distribution of ovarian elements in the wall of the sac, and as Spiegelberg does not claim to have found ovarian elements all over the wall of the sac, I think we may be quite justified in being somewhat sceptical even about this case; though I frankly admit that the eminence of the observer and the manifest care with which all

his records are given make it quite possible that his conclusions are correct. Since this was written, I regret to say, Prof. Spiegelberg has passed over to the majority.

In a paper published by M. Puech upon this subject he describes a case in which the left Fallopian tube, like the right, was fixed behind the ovary by adhesion, but had remained permeable. Its pavilion was closed in great measure, but not completely, and admitted a probe. The left ovary measured 46 mms. long, 26 mms. broad, and 18 mms. thick. It contained Graafian follicles of various degrees of development, the largest being 8 mms. in diameter. On its outer extremity was a rounded body about the size of a large cherry, its largest diameter being 20 mms., while its smallest was 12 mms. Its envelope was transparent and furnished with well-marked reticulated vessels. At one spot a deep violet coloration was seen over a space about the size of a lentil, and around this the envelope was thickened. Over most of the rest of the surface a yellowish substance could be seen through the translucent envelope. On opening the cyst with scissors a prominence with a villous surface was found attached at the area of coloration, while over the rest of the surface a layer  $\frac{1}{2}$  mm. thick could be easily separated from the cyst wall. The villous prominence was furnished with large vessels, and formed a semi-ellipsoid measuring 11 mms. by 10 mms. On incising this with cataract scissors it was found to contain a cavity distended by a clear fluid, and in the fluid floated an embryo in the form of a vermiform body 1 m. long, curved in the middle and swollen at one extremity. It was enveloped in an excessively delicate membrane by which it was fixed to the presumed chorion.

Now of course the whole conclusion in this case depends upon the assumption that this vermiform body, only 1 m. long, was an embryo. It may have been one, but certainly there is no proof advanced in favor of this view; and although I am by no means prepared to deny its accuracy, I am certainly very doubtful about it. If it was an embryo it could only have been one of a few hours' existence, and one could hardly expect to find the machinery of the whole process so defective that the pavilion of the tube—the most important part of the whole machinery—was so damaged as to be, according to M. Puech's description, almost closed and fixed behind the ovary by adhesion. One would have at least expected this adhesion to have been over the seat of the rupture, and yet it is distinctly stated not to have been so. I have seen so many queer looking things in ovarian cysts and follicles that I am not inclined to admit that this vermiform body has been shown conclusively to have been an embryo.

In another case, recorded by Walter in the *Monatschrift für Geburtshilfe* (vol. xviii.), there is a description of a cyst which had ruptured and allowed the foetus to pass into the abdomen. The cyst is stated to have been an ovary, but the conditions of the description are not sufficiently exact for this to be admitted, though it is stated that the cyst was free from adhesions to surrounding parts and was free from the pavilion of the corresponding tube. On the whole, I am inclined to regard the evidence advanced so far concerning the alleged occurrence of gestation within the proper tissue of the ovary as by no means complete; and while I am not prepared categorically to deny its occasional occurrence, as I did in a previous edition of this book, yet I cannot admit that it has been proved. Even if it does occur it would, as I have said, possess little more clinical importance than a case of tubal pregnancy, a differential diagnosis of it could not be made, and it would have to be treated on the same principles as the other varieties of extra-uterine pregnancy.

An extremely interesting contribution to the comparative pathology of the ovary has been made by Mr. Henry H. Slater, in the *Journal of Anatomy and Physiology* (vol. xiii.), concerning an ovarian tumor found in a hen pheasant. It measured when fresh 2.3 inches in greatest length, 1.1 in breadth, and the same in depth. It was very irregular in form, and was roughly divided into three principal lobes, which were united at their bases, and were subdivided into many smaller lobes; the whole presented the general sulcated appearance of a human brain on a smaller scale.

The ovary seemed to be almost entirely absorbed; nothing resembling its usual granular appearance was visible; and the tumor rested consequently directly upon the kidneys, a fold of peritoneum alone intervening. Though no ovary was visible, the left oviduct was convoluted as much as it would be in the earlier part of the breeding season, but this, of course, was not healthy excitement, but due to the inflammation of the organs. The right oviduct presented its usual aborted appearance.

On making a transverse section of the tumor, the interior was seen to be quite solid, and in no degree cystic or alveolar; nor was there, as might have been thought likely, any tendency to a concentric growth, but, on the contrary, bundles of fibres were seen faintly to radiate from the point of attachment of the tumor.

The minute anatomy was difficult to determine, owing to the necessity of employing a high power. There were visible fat-cells (by far the largest), granule-cells, and nucleated cells,

which I regard as resembling those found in tubercle—the last named being very numerous and irregular in shape and size. Interspersed were minute fibres, but these were rare; and lastly, diverging from the base of attachment of the tumor, were bundles of fibres, very irregular in shape. To these is due the radiated appearance of the section. They are unstriated muscular fibres, and seem to be the only remains of the original ovary.

This diseased ovary is only the most conspicuous part of a general tubercular affection which pervaded the whole of the viscera—the liver, pancreas, omentum, and intestines being all distinctly more or less involved.

I was under the impression that the tumor was cancerous, from the great resemblance under the microscope to medullary cancer of the human ovary; and my thanks are due to Professor Turner, who was kind enough to suggest that the tumor was probably tubercular, the correctness of which opinion was at once verified by means of dilute acetic acid.