PROGRESS in obstetrics and gynecology is denoted, among other things, by greater accuracy of diagnosis. When mere opening of the peritoneal cavity, more often than not, meant death from general peritonitis much thought and time was spent on preoperative diagnosis. When it was demonstrated beyond doubt that by proper precautions the peritoneal cavity could be invaded with impunity preoperative diagnosis of gynecological, pelvic and abdominal conditions became less accurate and often were not made at all. It has been so easy to excuse our intellectual laziness in diagnosis by saying that it makes no difference since the correct diagnosis will be made after the abdomen is opened.

We all know this is false reasoning. In certain cases the diagnostic abdominal incision is directly contraindicated and may shorten the life of the patient, even if immediate death does not result. Poking around in the pelvic and abdominal cavities trying to make a diagnosis in a few moments when such diagnosis could have been made prior to operation by modern diagnostic methods is crude surgery and should be done away with.

The present paper was suggested by a recent case, rare to be sure, but easily diagnosed had it been approached systematically and not hastily and carelessly. It is the same story with the other four cases which will be reported. In each the correct diagnosis could have been arrived at fairly easily, had the histories and physical signs been more carefully considered and analyzed.

Case 1. Prolapse of right Fallopian tube through colpotomy incision mistaken for a granuloma. Removal of piece for diagnosis followed by severe hemorrhage.

Mrs. H. J. A., aged 29, married, was operated upon in June, 1918, for a large pelvic abscess occupying principally the right side of the pelvis. The posterior culdesac was widely incised, the abscess emptied and the sac drained. The patient made a good recovery and gained thirty pounds in weight after leaving the hospital.

She was examined January 10, 1920, for local pain and tenderness. Since the previous operation she has never recovered her health. She tires easily and is unable to do her work.

Bimanual examination showed both appendages adherent and tender. The uterus was enlarged and fixed in the pelvis. At the site of the previous posterior colpotomy incision to the right of the median line could be felt an adherent irregular mass the size of the end of the little finger. Through the speculum the mass was seen to be irregular and reddish, like a coxcomb. The conclusion was that the mass was probably a granuloma at the site of the old colpotomy incision. In order to be more certain a small piece was snipped.

off with the scissors. A sharp hemorrhage followed which could only be checked by gauze packing. However, even with this evidence the tissue was thought to be granulomatous until the pathologist, Doctor C. V. Weller, reported the removed tissue to be a portion of the Fallopian tube.

January 28, 1920, the abdomen was opened and the microscopic diagnosis confirmed. The right ovary was bound down by adhesions in the posterior culdesac while a third of the fimbriated end of the tube projected through the vaginal wall and was adherent to the walls of the aperture. The right tube and ovary and the left tube were removed. The patient made a good recovery.

Here was a case in point. There was no reason why a clinical diagnosis should not have been made had greater care been taken in the examination. It is no excuse to say that owing to the situation of the prolapsed tube in the vault of a long and rigid vagina it was difficult to secure a good exposure of the prolapsed tube. It was the business of the examiner to overcome such difficulties. The bleeding subsequent to the removal of the section of the tube should have aroused suspicion that the tentative diagnosis of granuloma was probably incorrect. A granuloma when incised does not bleed as did the tube. Although the correct diagnosis was arrived at prior to operation, there was no intellectual satisfaction on the examiner’s part connected with it because it was made by the pathologist.

The case also illustrates the peculiar trend of our minds when trying to arrive at diagnosis of unusual conditions. I knew this was an unusual case since I had never seen an adherent mass like this subsequent to a colpotomy although I have performed a good many hundred for purulent collections within the pelvis. Instead of carefully and systematically considering all the findings in this case whereby a correct diagnosis might and probably would have been arrived at, I jumped at conclusions and held to these conclusions until they were proved absolutely wrong by the microscopic examination.

The same thing will be found to be true in practically all the cases of errors in diagnosis which follow. The correct diagnosis could have been made in each instance if the facts in the examiner’s possession had been carefully and systematically considered. As has been well said it is not lack of but a failure to use our knowledge that leads to mistakes in diagnosis.

So far as this particular case is concerned a fairly careful search of the literature fails to show a similar case reported. The nearest approach to it is prolapse of the appendages through rupture of the posterior vaginal wall. Cousins in an address on ovarian hernia and the protrusion of the appendages through rupture of the vaginal wall has thoroughly covered this subject and reports quite a few cases. The misplacements of the organs in his cases, are preceded by quite a different history. According to Breisky the rupture of the vaginal wall occurs almost exclusively in labor or during the puerperium. Grenser reports a case in which a pregnant woman suffering from ascites had a prolapse of the retroverted uterus and appendages through a tear in the posterior vaginal vault. Cousins reports a prolapse through a ruptured posterior vaginal wall of the ovary and tube in the case of an insane patient suffering from uterine prolapse due to persistent straining effort on the part of the patient who had suffered for some time from uterine and rectal prolapse.
It would seem at first glance as if prolapse of the ovary with the tube would be easier to diagnosticate than where the tube is prolapsed alone. However this is mere conjecture. The main thing to bear in mind is that prolapse of the appendages is possible after incision or rupture of the posterior vaginal wall.

**MISPLACEMENT OF THE KIDNEY**

There may be either a congenital or acquired misplacement of the kidney and in either condition the organ whether normal or diseased may lead to errors in diagnosis. This is well shown by a review of the literature where the kidney has been reported as mistaken for ovarian tumor, solid or cystic, fifteen times, cystic or solid tumors of the tube alone or with other organs fourteen times, solid or cystic ovarian growths with the possibility of other organs beside the kidney being involved six times and hematometra five times.

The following case illustrates how easily hydronephrosis may be mistaken for an ovarian cyst.

**Case 2.—Cystic kidney situated in the median line, apparently arising from the pelvis mistaken for an ovarian cyst.**

Mrs. S., aged sixty-four, widow, was admitted to the hospital November 18, 1903. The menopause had been established sixteen years. She has always been in fair health up to the beginning of the present trouble. Three months ago she was told she had a tumor, although she thinks her trouble started a year ago with pain in the right side and lumbar region. At times she is sick at the stomach and has pressure symptoms and pain at stool.

Examination showed an extremely thin woman with marked atheromatous arteries. The abdomen is regularly distended by a mass which reaches from the pubes to the epigastrium. The tumor is slightly more prominent on the right than the left side. On the right it reaches to the anterior superior spine and extends upward to the border of the ribs, on the left it is within two fingerbreadths of the anterior superior spine and almost to the border of the ribs. The umbilicus protrudes. The growth is smooth, elastic in feel, and apparently is cystic. The percussion note is flat on the right but somewhat tympanitic on the left side. By vaginal examination the tip of the finger just reaches the growth at the brim of the pelvis. The uterus is atrophic, the appendages not made out.

The diagnosis was cystadenoma of the right ovary and the patient was operated upon November 19, 1903. On opening the peritoneum a blue walled cystic tumor presented. The peritoneum was in front of the tumor, the cecum to the left and overlapping the growth. The cystic mass was found to arise from the right flank and was unconnected with the pelvis. The left kidney was palpated and found to be normal in size and position. The peritoneum was incised and the cystic kidney removed. The patient made a good recovery.

Here again were all the facts for making a correct diagnosis had they been put together in the proper manner. There was a distinct history of pain in the right side and flank, unusual, to say the least, with cystadenomata. Moreover, it was exasperating to have dictated the finding that there was decided tympany over the left side of the tumor yet to have made no use of such data because the conclusion was jumped at that one was dealing with the very common cystadenoma.

A history of pain in the flank must always be regarded as indicative of the renal origin of cystic neoplasms until the contrary has been proved. To-
day it is the surgeon's duty to make a preoperative diagnosis in every cystic abdominal or pelvic growth. If there be a distinct history of the pelvic origin of the growth and if the abdominal and pelvic findings confirm the diagnosis of an ovarian cystadenoma, it may be unnecessary to make use of other methods of examination in the differential diagnosis. In all doubtful cases, however, it is absolutely essential in the interests of good surgery to employ all urological methods to establish the diagnosis.

The cystoscope may reveal no urine coming from the ureteral orifice on the suspected side or it may show the urinary flow to be continuous in contrast with an intermittent flow from the other orifice thus denoting hydronephrosis.

In doubtful cases it is essential to employ the functional tests after ureteral catheterization in order to determine the integrity of each kidney. The same may be said as to the value of pyelography in difficult or obscure cases.

A review of the literature shows that in the large majority of cases where cystic kidneys were mistaken for ovarian cysts, the preoperative diagnoses could have been made had the examiners given more consideration to the possibility of the growths being renal in origin.

Curiously enough, notwithstanding the lesson learned from the above case which I spoke of many times in my clinics when the differential diagnosis of ovarian cysts was under discussion, one of my former assistants, Doctor Ward F. Seeley, during my absence made the same error in diagnosis as follows.

Case 3.—Enormous cystic left kidney reaching from the pubes to the ensiform mistaken for an ovarian cyst.

Mrs. G. L., aged forty-seven, entered the University Hospital, February 10, 1915, complaining of enlargement of the abdomen of four years' standing. Four years ago she discovered a firm solid mass, the size of a grapefruit in the lower left abdominal quadrant. During the four years there has been a gradual increase in the size of the abdomen but no symptoms aside from the inconvenience of the enlarging abdomen. There were no fever, chills, nausea, vomiting or jaundice. The general health was excellent.

Examination showed the patient of moderate frame and good nutrition with an abdomen enlarged especially in the lower left quadrant. The highest point of the swelling is three inches below and to the left of the umbilicus. Palpation shows the tumor apparently arising from the pelvis and filling the left lower abdominal quadrant. It reaches almost to the ensiform and extends well into the right upper and lower quadrants. The mass is freely movable and easily displaced to the right side of the abdomen. The smaller upper pole of the mass is firm and hard, the larger lower pole is distinctly cystic. The tumor is easily palpable through the posterior culdesac and gives a distinctly cystic feel to the examining finger.

The diagnosis of multilocular ovarian cyst was made and the patient operated upon February 16, 1915. At operation the uterus was found displaced backward by a cystic tumor which extended from the pelvis to the ensiform. Both ovaries were normal. The colon was stretched over this mass which was retroperitoneal and arose from the left kidney. The right kidney was palpated and found normal. The cystic kidney was aspirated and 2200 c.c. of fluid removed. The kidney was removed in the usual manner and the patient made a good recovery.
This case was quite similar to the other case of hydronephrosis except the disease was of longer duration and the cystic destruction of the kidney much greater. It shows how easy it is to be mistaken in the origin of a cystic mass a part of which lies in and can be palpated in the pelvis. It also illustrates how important it is to outline carefully the uterus and appendages as an aid to diagnosis. Rectal examination is often very valuable in such cases and should always be used in the presence of cystic growths no matter how simple the diagnosis may appear.

The history of a round mass in the left lower quadrant four years before entrance to the hospital should have aroused suspicion that the origin of the growth might be elsewhere than in the ovary. At times the patient may be mistaken regarding the time of appearance or the early location of the growth but usually such testimony is valuable since if the patient is intelligent enough to notice a growth she is apt to have fairly accurate information regarding it. At least her story should be given credence until proved by other findings to be inaccurate. More often it is the examiner's fault in that he approaches the case with preconceived ideas of the diagnosis based upon findings pointing to a common disease leading to a scant consideration of points in the history which may be all important.

Aside from a cystic kidney which may be mistaken for an ovarian cyst, the movable or floating kidney or the congenital pelvic kidney may give rise to errors in diagnosis. Movable kidney is met with so frequently in women that the examiner is almost always on the lookout for it, therefore, recognizes the condition by the usual signs. In rather exceptional cases where the movable kidney lies within the pelvis it may give rise to confusion until doubt is solved by replacement into its position in the flank.

Movable kidney with torsion may be hard to distinguish from an ovarian cystic or solid tumor with a twisted pedicle. The pain, however, when the pedicle of a movable kidney is twisted is located in the renal or epigastric region, while the pain of a twisted pedicled cyst is lower down and there is more general peritoneal involvement.

In case of doubt it is easy to settle definitely whether the tumor be renal by ureteral catheterization or the x-ray.

The congenital pelvic kidney being more uncommon and immovable as a rule is more apt to be either overlooked or mistaken for a genital tumor. The following case illustrates such an error.

Case 4.—Pelvic kidney in a woman without a vagina mistaken for hematometra and punctured through an incision made between bladder and rectum.

Miss M. Z., aged seventeen, single, was examined June 23, 1911. The patient has always been healthy with the exception of never having menstruated. There has never been anything suggestive of menstruation, either a discharge of blood from the vagina or menstrual molimina, until Christmas, 1911, when she had a spell during which she felt very nervous, blue, and very irritable. Although she had no particular pain she was obliged to go to bed for three weeks. There have been a number of similar attacks since during which there has been a dull ache in the lower abdomen but no sharp pain.

Examination showed a well-developed and well-nourished girl, perfectly normal so far as the breasts, pubic hair, and feminine characteristics were
concerned. The clitoris and labia were normal but there were no signs of an introitus. The meatus urinarius admitted the tip of the little finger with ease and there was some eversion of the mucous membrane. Rectal examination failed to reveal with distinctness either uterus or appendages but did show a globular mass just at the end of the examining finger.

The conclusion was at once arrived at that the condition was one of hematometra and on June 27, the tissue between the rectum and bladder was dissected upward for a distance of three inches through a transverse incision. At this distance the mass could be distinctly made out and with the idea of emptying the uterus of blood and establishing a communication with the outside a scalpel was thrust upwards into the mass. The result was not as expected for upon withdrawing the scalpel there was a terrific hemorrhage, the bright red blood differing greatly from retained menstrual fluid. The hemorrhage was so sharp that it could only be stopped by tight gauze packing. The diagnosis now was plain, absence of vagina and uterus together with a pelvic kidney. For a number of days samples of the urine showed large amounts of blood which gradually diminished. On July 5, an artificial vagina was formed by means of flaps taken from the labia and buttocks. The patient married soon afterward and the vagina was found serviceable.

At the risk of being tiresome, it is again pointed out that the error in diagnosis was due to the same causes which led to the mistakes in the three previous cases. So sure was I that I was dealing with retained menstrual blood that I proceeded to empty the uterus in a manner which might have led to fatal results. There is very little satisfaction in having the diagnosis in a case like this thrust into your face. To be sure the woman did not die from the hemorrhage, but this was due to no foresight on my part. All this could have been avoided by raising the query as to whether the pelvic tumor might not be renal in origin and determining the exact position of the kidney or kidneys by modern methods.

Cullen reports an almost similar case of a right pelvic kidney, absence of the left kidney, absence of vagina and uterus and both ovaries in the inguinal canals. The diagnosis of hematometra was made and the tissues between bladder and rectum dissected for a distance of five inches. Then doubt was thrown upon the diagnosis and the abdomen was opened showing the true condition of affairs.

Engstroem made a diagnosis of hematometra in a young girl of seventeen who lacked vagina and uterus. Laparotomy showed a pelvic kidney and the operation was completed by removal of both adnexa, an unjustifiable procedure in the light of our present day knowledge.

Von Kubinyi reports the case of a girl of nineteen who had never menstruated. Rectal examination showed the presence of a round tumor thought to be a hematometra. The tissue between the bladder and anus was dissected up to the peritoneum. As the tumor could not be reached from below the abdomen was opened and the tumor found to be a sacral kidney.

Buss removed a pelvic tumor from a girl of twenty-one who showed absence of vagina and had suffered from colicky pains, the original diagnosis having been hematometra. The patient died in seven days from uremia and microscopic examination of the removed tumor showed it to be a kidney. The other kidney was not found at the autopsy.
Other cases have been reported of death following the removal of pelvic kidneys showing the danger of such procedures as congenital anomalies are liable to be multiple. In the light of our present knowledge suspicion should at once be aroused as to the renal nature of any mass in the pelvis where absence of the vagina, in whole or part, exists. Again it may be stated that it is an absolute necessity to obtain complete information regarding the genitourinary apparatus before any operation is attempted.

MISPLACEMENT OF THE SPLEEN

The so-called wandering spleen has given rise to more errors in gynecologic diagnosis than has the movable or pelvic kidney. A partial review of the literature shows that wandering spleen has been mistaken for an ovarian tumor, cystic or solid, thirty-five times; ovarian tumor or some other genital organ, six times; uterine tumor, seven times, with other scattering mistakes in diagnosis.

The diagnosis of wandering spleen may be easy or exceedingly difficult dependent upon the size of the woman afflicted, the position of the spleen, and whether it be movable or fixed by adhesions. The difficulty of diagnosis is illustrated by the following case where the diagnosis was not made until after operation.

Case 5.—Wandering spleen adherent in the pelvis and resting upon the retroverted uterus, mistaken for a uterine fibroid. Removal and recovery.

Mrs. E. W., aged thirty-nine, married, was admitted to the University Hospital November 8, 1901. The patient was very obese, weighing in the neighborhood of 300 pounds. Her present trouble dated from the age of nineteen when she had a severe fall. For months she was unable to walk and suffered from severe pain in the lower abdomen. The attacks seemed to have no connection with the menstrual periods. Abdominal and pelvic examinations were extremely difficult on account of the obesity of the patient. However, a pelvic mass, more solid than cystic, could be indistinctly made out in the lower abdomen rather more to the right than the left. The mass was quite tender and rested upon the retroverted uterus. A diagnosis was made of probable uterine fibroid and to save the obese patient a laparotomy, if possible, the anterior culdesac was opened. A large adherent mass could be felt just at the tip of the finger, resting upon the retroverted uterus. Its size preventing removal through the vagina, the abdomen was opened by an incision reaching from the pubes to the umbilicus. The tumor was found to be a displaced spleen adherent to the vesicoparietal peritoneum with its lower surface resting upon the retroverted uterus. The pedicle was ligated and the spleen removed. The patient made a good recovery and showed no ill effects from the removal of the organ, her symptoms being entirely relieved.

Displacement of the spleen is not uncommon in women, especially married women during middle life. If the spleen be displaced but nonadherent the diagnosis is not especially difficult if one keeps in mind the possibility that the spleen, like the kidney, may be movable. When it has been displaced and is adherent in the pelvis or at the pelvic brim the diagnosis may be extremely difficult, as in the case just reported, where it was thought to be a uterine fibroid. I have removed solid fibroid tumors of the ovary shaped
not unlike a spleen with a notch in the middle of the growth. It is not always easy to palpate the splenic notch in wandering spleen since the organ as it descends from its normal position tends to become horizontal and the notch to be drawn backward and upward. These facts, together with the increase in size of the spleen due to edema and congestion, can give rise to frequent errors of diagnosis so far as palpation is concerned.

Unless the peritoneal surface of an ovarian cyst or pedunculated uterine fibroid is or has been the seat of infection, there will be no tenderness on palpation, in contradistinction to the prolapsed spleen which, without torsion of the pedicle or evidence of peritoneal inflammation, is quite sensitive on palpation.

A study of the reported cases of wandering spleen shows that the condition cannot be excluded because a mass lies to the right of the median line. On the contrary, such a spleen can occupy any position in the abdomen or pelvis in which a tumor of the right or left ovary may be found.

Where the pedicle of the spleen has become twisted the difficulties of diagnosis become increased since the pain and sensitiveness may be the same in degree and location as when the pedicles of tumors of the genital organs become twisted. As in the case of cystic and solid tumors of the kidney the history may be of the greatest value in the differential diagnosis of wandering spleen. A history of a fall or injury and the slow gradual descent of a mass from under the left ribs should always arouse suspicion as to the possibility of a tumor being a wandering spleen.

It appears as if the new method of abdominal diagnosis, pneumoperitoneum, where the outlines of the abdominal and pelvic organs are shown by the x-ray after the injection into the peritoneal cavity of nitrous oxide or carbon dioxide gas, holds out the greatest possibilities regarding the diagnosis of wandering spleen. If this method of diagnosis, after its technic has been perfected, fails to show the spleen in its normal position, but shows a tumor elsewhere, it is strong evidence that the tumor is splenic no matter what the position or whether it be adherent or free.

Other misplaced abdominal organs have led to errors of gynecologic diagnosis. For instance, Chadwick reports a most interesting case where a prolapsed stomach was aspirated through the posterior culdesac under the impression that a pelvic abscess was being emptied. In two instances the enlarged and prolapsed liver has been mistaken for an ovarian cyst, while the prolapsed enlarged gallbladder has been incorrectly diagnosed as ovarian cyst in at least five cases. However, such errors of diagnosis will be merely referred to since I have no personal cases to record.

CONCLUSIONS

1. Mistakes in gynecologic diagnosis arising from misplaced organs are not uncommon as shown by the literature in which only a small proportion of such mistakes is probably recorded.

2. Such errors in diagnosis arise from either carelessness, or preconceived ideas of diagnosis whereby important facts in the history and equally important physical findings are either overlooked or ignored.
3. Such diagnostic errors can be averted by greater care in systematically considering with a free mind the facts in the case relating to the history and physical findings provided the latter are obtained through the employment of the most modern methods of examination.

4. In every case a preoperative diagnosis should be made and recorded in order to profit by mistakes revealed at the operation or autopsy.

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(For discussion, see p. 211.)