Original Articles.

REMARKS UPON OBSCURE NON-TRAUMATIC TUMORS OF THE LOWER ABDOMEN SUDDENLY APPEARING WHERE NONE HAD PREVIOUSLY BEEN DETECTED.

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THE sudden appearance of abdominal tumors should suggest to the observer a lesion that demands intervention; for nearly, if not all, are curable only by surgical means. Moreover, intervention in most of the tumors under consideration must be prompt to be successful. It is from this point of view that I invite attention to a class of abdominal lesions so hard to understand that they must be called obscure. Indeed they are of such uncertain origin that no man, skilful and experienced though he may be, can more than hazard a guess as to their nature. Fortunately these tumors present symptoms that of themselves demand early operation. A differential diagnosis, interesting as it may be, is impossible from the very nature of things.

A wide experience in abdominal surgery may not afford a single example to illustrate my subject; a narrow one may afford several. Most of the cases upon which I base my remarks have come under observation within the past four months. In every case the patient's life was saved by operation performed as soon as the urgency was clear. In but one was a correct diagnosis made before exploration; that exploration demonstrated in all the lethal nature of the lesion.

By sudden and obscure tumors I mean those which are so small that they escape observation one day, and so large that they cannot be overlooked the next; so small that bimanual examination fails to detect them at one examination, and at the next so large that they may even bulge the abdominal wall.

My attention was particularly attracted to this subject by the detection of a large ovarian cyst with twisted pedicle in a woman whom I had examined a short time before without finding any tumor whatever. My interest in this case was especially acute because my failure to detect the tumor was shared by one experienced in such examinations, who, even under anesthesia, had been unable to discover anything abnormal in the lower abdomen.

CASE I. The patient, a woman of forty, had suffered for some six months with sudden attacks of pain in the left side of the abdomen. The first attack in August, 1895, came on five days after confinement. Between that time and February, 1896, there had been six attacks. It was supposed to be a nephritic colic, and the history in detail certainly justified that diagnosis. The pain was controlled by morphine. The patient was examined under ether. *Nothing could be detected in the pelvis.* The urethra was dilated and the bladder examined. Nothing abnormal could be felt anywhere in the abdomen. Two days later, without any apparent reason, she became suddenly collapsed. There was no sharp pain — only a "sinking feeling." The nurse could feel no pulse. I first saw and examined the patient on the evening of this day, and could detect nothing. The temperature was 99.4°; the pulse 170. No operation was advised.

Three weeks later the patient presented symptoms so strongly suggestive of an acute appendicitis that a medical consultant after careful examination advised that a surgeon be sent for. I was then able to diagnosticate and to re-

move an ovarian tumor with twisted pedicle, the whole filling the abdomen as high as the umbilicus. The patient made a good recovery. The explanation of this case, as demonstrated by the operation, seems satisfactory. There was a flaccid cyst of moderate size, which escaped detection owing to an unusually thick abdominal wall covering it; the collapse was due to hemorrhage into the cyst at the beginning torsion. At the time of operation the tumor had become large and tense enough to be easily detected.¹

The first and most natural criticism in considering this case is that the examination was not thorough; that skilled examiners could not have failed to detect such a tumor. But such a criticism, I maintain, can be founded only upon ignorance or upon inexperience, for there can be no doubt that tumors suddenly appear in regions where the most painstaking and experienced examiners have failed to detect any.

The first and most common of the suddenly appearing tumors, and, I may add, the most likely to be overlooked, is the over-distended bladder. If the whole truth were told, not a few instances would be recorded in which the operator has exposed a normal bladder in a state of extreme distention — some in which he has actually opened it. Such a mistake is common with certain acute lesions, more especially appendicitis with abscess. I recall one case in which the tumor of the appendix was so closely connected with a full bladder that I opened the latter. Fortunately no harm was done. Taught by this experience, I have by catheterization avoided several fluctuating tumors which proved to be the full bladder fastened to the right side of the abdomen by contiguous appendicular inflammation.

In such cases, however, there is no sudden and unexpected development of a tumor; moreover, the causative lesion is always apparent. It is rather the uncomplicated tumor, elastic, fluctuating and symmetrical, that must be carefully scanned. Even with the most painstaking examination such a tumor may deceive us, unless we continually bear in mind the possibility of a full bladder. We shall be especially liable to mistake if we are unaware of the suddenness of development, for the bladder may have been over-distended some time before the first examination. In one instance I was about to open the abdomen for supposed ovarian cyst. I found it filled by a fluctuating, symmetrical tumor. The patient was a woman of twenty-six, who had complained for two months of pain in the right lower abdomen. The attending physician had made a diagnosis of ovarian cyst and had asked me to operate. Vaginal examination confirmed the diagnosis of ovarian cyst. I advised operation. The patient was placed in the Trendelenburg position, and the cut was about to be made, when something, I forget what, suggested bladder. I found that just before operation, she had passed her urine voluntarily and easily and had not been catheterized. The tumor escaped through the catheter.

In pelvic surgery especially it should be an invariable rule to catheterize the patient just before operation. This rule should apply particularly to women. Failure to empty the bladder by the catheter will often cause the annoyance of a partly filled bladder interfering with one's work; sometimes catheterization will prevent the performance of a totally unnecessary abdominal exploration.

I have twice been astonished to find, a few days

¹ The Medical Register, Richmond, Va., October, 1899.

after simple operations upon the lower abdomen, a large fluctuating tumor extending to the umbilicus. The most serious and impossible complications were immediately suspected, particularly hematomata. In each instance the catheter solved the diagnosis and relieved the patient.

On the other hand, the tumor does not always prove so easy of diagnosis.

CASE II. On January 30, 1900, I saw with Dr. George E. Thompson, of Boston, Mary M., a girl of fourteen, who had been taken with pain in the lower abdomen ten days before. The illness began with diarrhea, followed by vomiting, distention and general tenderness. There were some constitutional signs, but of moderate extent. The attack began just at the close of her first menstruation. She had been greatly frightened by the flow, not understanding it, and she had kept about her work, had got wet, and had taken cold. The lower abdomen was dull and apparently fluctuating. Her general condition was good. The whole abdomen was much distended, but soft.

I advised the passage of a catheter, and was greatly surprised that nothing came through it. The lesion was quite obscure, but it seemed probably a subacute peritonitis, probably connected in some way with menstruation. I sent her to the hospital, where she was kept under careful observation. On March 2d I operated upon the tumor in the lower abdomen which had gradually developed, and found what I had never suspected — a pelvic abscess from appendicitis.

The tumor which at first I thought might be a full bladder was a localized peritonitis with gradual thickening walls. The true diagnosis was never even suspected. Though in this case no bladder complications were found, the passage of the catheter as a means of diagnosis was clearly indicated. Attention is at once directed to the bladder whenever there are urinary symptoms, especially dribbling. Fluctuating tumors in men suggest bladder, even when urinary symptoms are not mentioned. No more common condition is overlooked by the general practitioner than the distended male bladder, even when dribbling of urine calls the attention directly to it. The female bladder is even more likely to be overlooked, for it may be enormously distended without giving rise to a single symptom or even to an inconvenience. The obvious lesson is that in all fluctuating tumors of the lower abdomen, before opening the abdomen, the catheter should be passed. Many tumors will by this means of diagnosis disappear.

A second variety of rapidly forming tumor may be the idiopathic dilatation of the colon — the so-called phantom. A suddenly appearing tumor dependent upon this cause possesses characteristics quite different from all other varieties considered in this paper. The ordinary phantom tumor, though it may be called obscure, can hardly be called suddenly appearing; it should rather be called a suddenly disappearing tumor. It is a well-known and persistent tumor, disappearing only under anesthesia. The dilated colon, however, may suddenly become twisted or obstructed and show itself as a well-marked tumor. Such a condition of the colon may have given no signs whatever of its existence. A remarkable case of this kind came under my observation some years ago.²

CASE II. The patient, a man of forty, under the care of Dr. Hardy Phippen, of Salem, became suddenly distended to enormous proportions. The bowels were completely obstructed. Violent peristaltic movements were visible through the abdominal walls. There was no es-

pecial tumor other than that of an enormously distended coil. It was clear that there was a violent effort in the large intestine to empty itself, and this effort showed itself in a tense and dilated coil. I found the abdominal cavity filled with the sigmoid flexure, twisted about its mesentery and completely obstructed. I untwisted and fastened the sigmoid flexure, in normal position, to the abdominal wall. This was on March 22, 1897. On August 9th, the twist having recurred, I resected the whole coil with permanent success.

The diagnosis in this variety of suddenly appearing tumor is limited to those lesions of intestinal obstruction which are attended by the presence of an isolated and distended coil. The disease most commonly found is an intussusception or a volvulus, though I have seen the intestine just above a stricture excessively distended and forming a pear-shaped tumor, sagging with retained liquid feces. The common forms of intussusception, volvulus, and simple obstruction need not be considered in the rapidly appearing intestinal tumors, for they are, as an almost invariable rule, small or hard of detection. In the case just mentioned the coil was so large that it filled the whole of the abdomen.

CASE IV. A recent case of the so-called phantom tumor without obstruction — in some respects more remarkable than the first — was that of Mary K., who entered the Massachusetts General Hospital for a supposed case of chronic appendicitis. The appendix was removed with temporary benefit. When she first came under my observation she presented a rounded, symmetrical, tympanitic tumor filling the lower abdomen. Dr. Fitz made the diagnosis of idiopathic dilatation of the colon. The tumor belonged to the so-called phantom class, for under ether it entirely disappeared. On recovery from anesthesia the tumor immediately reappeared. On May 5th I removed the whole sigmoid flexure — 14 inches of excessively dilated bowel — and joined the descending colon to the rectum in a straight line. On April 19, 1900, she presented the same appearance as before. I have recently explored again and found at the site of the suture an excessive dilatation with thickening of the bowel. A second sigmoid flexure has appeared. The second tumor must be regarded as an idiopathic dilatation of the descending colon and upper rectum, for at my previous operation no sigmoid flexure was left. There was no obstruction to the fecal stream and the recurrence of dilatation to me is inexplicable.

Dr. F. B. Harrington has had a similar case recently reported by Fitz. In a personal communication Dr. Harrington has given me the facts of a third case. A woman of seventy suddenly developed a tumor rather above than below the umbilicus, with complete obstruction. The tumor was tympanitic, resistant and tender. Exploration showed it to be an enormously distended sigmoid flexure.

In some instances in explorations of suddenly appearing tumors comparatively large collections of clear fluid will be found in close connection with such lesions as salpingitis and even with appendicitis. Small cysts are often noted upon the Fallopian tubes or upon fibroids. An extreme development of these collections of fluid explains the large pseudocysts of sudden appearance. I recall one case in which a bulging tumor between the caput coli and the bladder proved to be an encysted collection of serum dependent upon a recurring abscess two years after the removal of a gangrenous appendix. In another instance, to be reported later in this paper, there were several localized collections about a single large cyst filled with blood. In numerous patients I have found, confined behind the uterus, low in the pelvis, very considerable collec-

² Transactions of the American Surgical Association, 1897, p. 585.

tions of clear, sterile fluid. Such collections may form in a short time. When they are high up in the pelvis they may, in a night, cause a bulging of the abdominal wall. On the other hand the collection of fluid about recently inflamed tubes may be of considerable extent and yet be impossible of detection. On March 23d I opened the abdomen in an obscure pelvic case, supposed to be either salpingitis or extra-uterine pregnancy, and exposed a flaccid encysted peritonitis which I had been unable to feel under anesthesia by bimanual palpation. Such a cyst tensely filled would have bulged the abdominal wall. Had its thin-walled vessels given way the patient would have presented a suddenly appearing obscure tumor filled with blood where none had previously been detected.

Tumors of this origin must be considered in attempting to make a diagnosis. They do not appear, however, without being preceded or accompanied by physical signs easy of detection. The appendicitis, the salpingitis, the fibroid, the pelvic peritonitis, all present sufficient evidence upon which to base an opinion.

The next lesion is so unusual that little can be said to throw light upon its probable origin or upon its exact nature. I venture to say that few would be able in the illustrative case to hazard a guess as to the lesion. I will give the case in some detail from the records of the Massachusetts General Hospital. It may be interesting for the reader to make his diagnosis before going on to read the description of what was found at the operation.

CASE V. The patient, a girl of nineteen, had been under the care of Dr. Fitz in the medical wards of the Massachusetts General Hospital. The only gastric symptom was discomfort after eating. This had lasted a year and was supposed to have been caused by a "blow upon the stomach" from a fall upon a curbstone. There had been frequent vomiting and much belching, but no hematemesis.

The patient gained under medical treatment which was directed to her general condition—one of neurasthenia with dyspepsia. Repeated examinations of the abdomen were negative. On February 14th at noon she began to vomit. In eighteen hours she began to complain of pain in the left abdomen. She soon became collapsed. On February 15th, at noon, twenty-four hours after the vomiting began, she was seen by Dr. Mixer and myself. The left side of the abdomen was much more prominent than the right, and flat from the pubes to the ribs. The tumor was fluctuating and tender. The patient was collapsed. There was a leucocytosis of 22,300. She was then transferred to the west surgical division.

I found a large, fluctuating, tender tumor filling the whole lower abdomen. Vaginal examination showed that the tumor pressed upon the bladder and filled the upper part of the pelvis. The patient was in extreme collapse. Though it seemed hardly possible that the tumor could be a dilated bladder, I advised first the passage of the catheter. It was not a bladder. The symmetry, tenderness, fluctuation and dullness strongly suggested an ovarian cyst with twisted pedicle. I therefore made careful inquiries as to the previous examinations. I found that repeated examinations by Dr. Fitz had shown the abdomen "negative." I was yet inclined (in the light of Case I) to regard the tumor as an ovarian torsion. The real lesion was not for a moment suspected. Dr. Mixer kindly operated for me and found an excessive dilatation of the stomach. This organ filled the lower abdomen, sagging it in the shape of an enormous pear. There were several gallons of fluid dragging the stomach into the lower abdomen, where it formed, as I have already described, a dull, bulging, symmet-

rical, fluctuating mass. No stricture of the pylorus or other cause was found for this condition. It was impossible to relieve the stomach by way of the esophagus, Dr. Mixer not being able to pass a tube into the stomach in that way. An anastomosis was therefore made between the stomach and the jejunum. The patient gradually failed and died three days later.

The symptoms in this case were largely gastric, but no physical signs of dilatation were detected. No tumor of the lower abdomen or pelvis was ever apparent. The lesion, evidently of the gravest character, showed itself by the sudden appearance of a large, symmetrical, tender, fluctuating tumor of the lower abdomen. The chief constitutional signs were those of collapse. The aggregation of symptoms pointed as much to an ovarian tumor with a twisted pedicle as to anything else,—indeed rather more,—and not at all to the real lesion. Fortunately they indicated the necessity for surgical relief, and the course taken was the only one making recovery possible, for even with the abdomen open it was impossible to drain through the esophagus.

The inference to be drawn from this case is that in the tumors under consideration the stomach is not too remote to be a possible cause of the unexpected tumor. Another case, though not as extraordinary as this, illustrates the subject.

CASE VI. Isabel McL., age twenty-one, single, entered the accident room of the Massachusetts General Hospital on February 10, 1900. There was a past history of indigestion and constipation for three years. During the last days of June, 1899, she had an attack of pain in the right iliac region and pain in the back. She vomited a great deal. She went to bed and stayed four days. Two months ago she had had another attack of pain in the same place, without vomiting. She did not then go to bed. Two weeks before entrance she had an attack of pain in the right iliac fossa. She vomited frequently and the bowels were constipated. There was tenderness in the right iliac region in all of these attacks. The menstruation was slightly irregular. The last period was two weeks ago. She was well developed and well nourished; the heart and lungs were negative. There was tenderness in the right lower abdomen. The rectus was more rigid on the right side. Examination by rectum showed a slight tenderness in the right side of the pelvis. It was impossible to make a vaginal examination. There was a blood count of 6,000. The next day she was more comfortable. She could not pass the urine and she had to be catheterized. She complained of attacks of pain during this day—not very severe—starting in the right hypochondrium, and extending down the median line towards the pubes. There was no vomiting.

On the 16th she was more comfortable. The pain was less severe. The tenderness was more marked in the right iliac fossa and above the pubes. No mass could be felt in the abdomen. The urine in twenty-four hours was 18 ounces. On the 17th her condition was the same. On the 18th white count was 20,000. It was now deemed advisable to open the abdomen. Within the last twenty-four hours a tumor had appeared to the right of the median line, pretty well filling the right lower abdomen. I was extremely surprised to find a large, tender and elastic tumor where none had been felt the day before. The diagnosis seemed very obscure.

On opening the abdomen I found a tumor of the right ovary, about the size of a small cocoanut. There was a twist in the pedicle which impeded the venous return, though it did not entirely shut off the circulation. The cyst was tensely distended with the exudation from the obstructed vein. There was in the left ovary a small cyst, about the size of an egg, which I dissected out with the blunt dissector, closing the rent in the ovary by an inter-

rupted fine silk suture. The patient has made a perfect recovery.

The most common tumor, probably, which suddenly attains considerable dimensions is the ovarian tumor with twisted pedicle. The obstruction to venous return, which begins before the arterial supply is closed, causes, first, engorgement of the tumor walls as well as its cavity. In many instances this engorgement results in hemorrhage into the cyst. When the cyst is distensible, the shock and collapse depend chiefly upon the hemorrhage. More infrequently the tumor is due to the rupture of blood vessels, and hemorrhage into the distensible cyst, without any twist in the pedicle whatever. In many cases the symptoms of hemorrhage and collapse are so characteristic that the attention is at once drawn to the examination of the pelvis, and the tumor is found. In many other cases the tumor is already known to exist. In the tumors which suddenly appear without warning, without pain, and without hemorrhage—signs so characteristic of ovarian torsion—the diagnosis and explanation are somewhat more doubtful, as in the following case:

CASE VII. Ada McD., age eighteen, White River Junction, Vt., entered the Massachusetts General Hospital on February 6, 1900. The history was negative up to two years before admission, when she had what was supposed to be a peritonitis. For a year before admission she had been having weekly tampons in the vagina, with no marked improvement. The symptoms were chiefly connected with the menstruation. The flow was painful and rather scanty. The chief complaint was pain in the left side low down in the pelvis—a dragging down sensation, and backache. The chief point in this case was that in my first examination I was unable to find anything whatever in the pelvis. I was not satisfied with this examination, however, and on February 9th I etherized the patient. Under ether I made a most thorough bimanual examination. I found the uterus anteфлекed—in a state of normal anteфлекion—and a mass extending on either side, rather more to the right than to the left. It seemed to be either a small fibroid or an enlargement of the tube. In a word, the girl had a tumor which was somewhat difficult of detection.

On the following Monday morning I found a tumor filling the whole lower abdomen, going as high as the umbilicus. It was fluctuating, not especially tense and not especially tender. I was so surprised to find this tumor that I hesitated a long time before opening the abdomen, thinking that I might possibly have overlooked a pregnant uterus. Finally, under bimanual examination, I felt something rupture, and then I knew at once that it was a cyst or a portion of a cyst which had given way during examination. There was no indication of hemorrhage, and yet the girl was rather pale. I opened the abdomen and found a very thin-walled ovarian cyst of the left side filling a large part of the lower abdomen. The cyst was multilocular, one cyst being much larger than all the rest combined. This one was aspirated and bloody fluid was withdrawn. The right tube and ovary were normal. The patient's condition was very poor at the end of the operation, but she made a good recovery. An immediate cover-glass examination was made, with negative results. The culture from the peritoneal cavity was sterile. Further examination showed that the initial lesion was a "tuberculosis of the Fallopian tubes."

In this case the cyst was distended by a fluid composed mostly of blood. The source of the hemorrhage was undoubtedly the thin-walled vessels of the interior of the cyst, ruptured probably during the manipulation of the bimanual examination. The patient was somewhat pale, but presented no other signs of hemorrhage. With a tender, resistant tumor, and with signs

of hemorrhage, attention would have been immediately drawn to the possibility of an ovarian torsion.

The most frequent cause of unexpected tumors seems to be, as in Case I, the result of sudden enlargement of a flaccid tumor due to a twisting of its pedicle. The common occurrence of this mechanical lesion has for some time attracted my attention. The frequency with which the physician fails to recognize so grave a lesion might seem inexcusable were it not that the mistake is sometimes made by the most experienced diagnosticians. The trouble is that the effects of twisting are often observed in patients who have never known or suspected that they had a tumor. Moreover the lesion may occur in the course of other diseases or conditions which cannot but mislead the observer.

Nothing could be easier than the diagnosis when a well-known and perhaps often-observed tumor becomes suddenly painful, tender and resistant, and especially when accompanied with vomiting and collapse with rapid pulse and subnormal temperature. Such an aggregation of symptoms cannot but suggest a sudden shutting off of the blood supply to the tumor, with distention of the tumor either by blood or by serum, and beginning gangrene of its walls. But suppose that pain, tenderness, vomiting and collapse take place, and that under ether nothing is discovered by the most careful bimanual examination, would not the examiner be surprised to know that these symptoms were due to a twisted pedicle, as proved two or three weeks later by the successful removal of a tumor filled with blood large enough to occupy the whole lower abdomen (see Case I)? Or suppose a mild and frequently recurring appendicitis, so evident that neither physician nor consultant deemed a vaginal examination necessary, would not the operator be surprised to find a small ovarian cyst, strangulated in the pelvis, shut off completely from its pedicle and nourished by adhesions? Or even after repeated observations upon a painful and tender fibroid, would he not be surprised, in beginning a hysterectomy, to find an ovarian pedicle twisted enough to shut off the venous return, while still permitting the arterial supply? He might well be surprised, and I might add that I have been surprised under these very conditions, for all these supposititious cases are taken from my own records. Fortunately, the indications for operation were clear and all the patients were saved.

The chief necessity in connection with the suddenly appearing ovarian torsion is the early recognition that something has occurred within the abdomen which urgently demands exploration. Refinements of diagnosis, however desirable in ordinary cases, must be condemned if they consume precious time. Sudden, sharp and severe pain in the lower abdomen, followed by symptoms of shock, with tenderness and tumor, mean a serious lesion, and demand exploration. The surgeon may find an extra-uterine pregnancy, an ovarian torsion, an acute salpingitis, or even a perforated appendix.

Tumors of hemorrhagic origin, suddenly appearing, are usually coincident with the initial pain, and for this reason are apparent at the first examination. In case the patient is examined before the pain—the initial sign of hemorrhage—appears, it is evident that nothing will be discovered. The sudden development of the hemorrhage is not unlike that of the tense and blood-filled cyst of the ovarian torsion or of

simple hemorrhage. Early examination in suspected pregnancy will show that no considerable tumor is present, even in ectopic gestation; in most cases only an enlarged ovary or tube will be detected. When in a suspected pregnancy a tumor suddenly appears coincidently with sharp abdominal pain, the chances favor the ruptured sac of an extra-uterine pregnancy with confinement of the blood within the layers of the broad ligament. At times the tumor is a hematoma or a hematocele confined in the pelvis. The diagnosis between the tumor of an extra-uterine pregnancy and ovarian tumor with twisted pedicle is often dependent upon the history of a possible pregnancy, for the principal symptoms of onset are identical. When the cyst becomes filled with blood, in both there is a sudden pain with faintness and collapse; in both there is a tender, elastic and suddenly appearing tumor; in both there are symptoms of peritoneal irritation, nausea, vomiting and distention; in both, low temperature and high pulse. When there is a history of irregular menstruation, of tender breasts, and of morning sickness, the chances favor an extra-uterine pregnancy. In the absence of all signs pointing towards pregnancy, the elastic, tender tumor suggests an ovarian tumor with twisted pedicle.

The ovarian tumor with twisted pedicle is usually tense and tender; the hematoma is not. If the hematoma is tense, it is seldom tender. Many examples of suddenly appearing blood tumors of the lower abdomen might be given here to illustrate the foregoing remarks. They differ materially from the encysted hemorrhages of ovarian tumors, whether with twisted pedicle or not. The importance of distinguishing between the hematocele and the ovarian tumor is great, for the former often do well without operation and the latter always demand it. One distinguishing feature not mentioned is the gradual development of the hematocele. Yet I have seen one develop suddenly. I recall the case of a married woman of thirty-four who had gone over her menstrual period one month. There was nausea. Pain in the abdomen came on suddenly, and was accompanied by vomiting. I found a tumor as large as a child's head extending from the pubes nearly to the umbilicus. On exploration this proved to be a thick-walled sac containing clotted blood. The walls of the sac were stitched to the wound and the blood was removed by irrigation. No evidence of fetal structure could be found. Convalescence from this operation was rapid, but a sinus remained for some time. About four weeks after the operation the patient was seized again with pain, the attack being very similar to the first. A tumor then rapidly formed to the left of the uterus, as in the first attack. No intervention was attempted. The swelling subsided gradually, to appear on the right side some weeks later. The appearance of the last tumor was sudden and was accompanied by the same symptoms as the first. The patient was kept quiet in bed for some weeks, and was discharged July 11, 1892.⁴ In another case of suspected extra-uterine pregnancy I found the whole abdomen filled with a tumor evidently containing blood. The patient was improving at the time that I first examined her, and no surgical operation was performed. She made a perfectly good recovery.

Among the remotely possible sources of suddenly appearing pelvic tumors are the distended gall blad-

der and the intermittent hydronephrosis. A consideration of the distended gall bladder seems hardly appropriate, because it is impossible for a gall bladder, from its very nature, to acquire in a few hours such dimensions as to encroach upon the pelvis. In all the tumors of the gall bladder that I have seen the largest has been due to a chronic obstruction of the common duct, from cancer of the pancreas. I have reported one case in which the tumor came down to the brim of the pelvis. This was not, however, a suddenly appearing tumor; on the contrary, it was a tumor of very gradual development. It was recognized at the very beginning. As I have already stated, the gall bladder, from its very situation and structure, is an organ that does not permit of the excessive dilatation necessary to reach the pelvis. It is somewhat different in another class of tumors—the sudden dilatation of the pelvis of the kidney. I have seen and reported a case of intermittent hydronephrosis in which a tumor filled the right hypochondrium. Such a tumor, though impossible of detection one day, and bulging the abdominal wall the next, occupies a place in the abdomen far removed from the pelvis. It is conceivable, however, that the kidney may be displaced, and give rise to a suddenly appearing tumor, either at the brim of the pelvis or in the pelvis itself. The intermittent hydronephrosis is in itself a rare tumor. It would be almost inconceivable to have a tumor displaced in the pelvis, and at the same time the seat of this unusual condition. In a differential diagnosis the dilated gall bladder and the intermittent hydronephrosis may be eliminated from their very rarity. On the other hand, the acute dilatation of the stomach cannot, for this lesion is certainly more common than either acute dilatation of the gall bladder or acute dilatation of the pelvis of the kidney. Moreover, the stomach, being a large and distensible organ, may easily be sagged into the regions of the ovarian tumor and of the extra-uterine pregnancy. Indeed, I have been struck by the frequency with which the stomach appears below the umbilicus in the median incision. It is a very common occurrence. Such a stomach, even with the patient in the Trendelenburg position, appears below the umbilicus. When distended in the horizontal position, or in the erect position, it is easy to see how such a stomach might cause an obscure tumor. I have seen several instances in which the dilated stomach has shown itself low down in the left side of the abdomen. In these cases the stricture of the pylorus and the dilatation or sagging were so gradual that there was no difficulty whatever in the diagnosis. These tumors could hardly be called either suddenly appearing or obscure tumors, for they appeared gradually and were not obscure.

The foregoing consideration, then, applies chiefly to the sudden dilatation of a flaccid ovarian cyst, either by hemorrhage from its walls or by an obstruction to the venous return from a twisting of its pedicle. It applies to the sudden enlargements of the chronic dilatations of the sigmoid flexure; to the sudden appearance of encysted peritonitis, accompanying salpingitis or other inflammatory conditions of the pelvis, and finally to the large collection of blood due usually to the rupture of an extra-uterine pregnancy. In all these lesions the importance of their recognition is obvious. The diagnosis of these suddenly appearing tumors is a matter of great interest and importance, for upon a clear recognition of the necessity of surgi-

⁴ *Annals of Surgery*, December, 1894.

cal intervention depends in many instances the life of the patient. A clear recognition of the nature of the lesion will prevent also the danger of an unnecessary, not to say a meddling, operation.

From the cases already detailed it appears that, in my experience at least, an exact diagnosis is often impossible. It appears clear, however, that a lesion essentially fatal, if unrelieved, presents symptoms so suggestive as to form a conspicuous guide to the surgeon's hand; symptoms that lead him to the sure relief of the tumor with twisted pedicle or the hematoma of ectopic gestation, but which also call him to stay his hand in the sudden and painless tumors of the overdistended bladder.

In most of the tumors under consideration pain is the first, the most important and enduring symptom. Pain alone demands careful examination of the pelvic viscera. Discomfort in the lower abdomen, if not amounting to real pain, may reveal on examination a pelvic tumor the nature of which will become clear only upon the appearance of other symptoms and signs.

The great emergencies of pelvic surgery attended by the sudden appearance of tumors are ovarian torsion and extra-uterine pregnancy. In rare instances, perhaps, the perforation of an appendix may give rise to a tumor of considerable dimension. Appendicitis and salpingitis, too, might be included in the present consideration. Both these diseases, however, present such definite histories and such definite physical signs — physical signs so definitely follow the initial pain — that the tumor so invariably associated with them can hardly be called obscure or unsuspected. A consideration of these common lesions is therefore beyond the scope of this communication. The tumors of an ectopic gestation, on the other hand, may attain in a few hours a size that is extraordinary, so also may the tumor of an ovarian torsion, a dilated and obstructed sigmoid flexure, a suddenly distended ovarian cyst, an acute dilatation of the stomach, and a full bladder.

The mistake of opening a full bladder by laparotomy is so inexcusable that I may be pardoned for saying a few words upon the diagnosis of a full bladder. It cannot do harm to repeat that the full bladder often causes grave mistakes, no matter how experienced the diagnostician. Presenting, as it does, a smooth, symmetrical, fluctuating tumor, who is to be blamed for thinking it a simple ovarian cyst, especially if there have been no urinary symptoms whatever, no pain, no overflow, but on the contrary natural and easy micturition at the usual interval? He would be inexcusable perhaps who should open a bladder when urinary discomfort and dribbling of urine pointed clearly to the bladder in a state of overdistention, though I have been called to operate upon many such tumors, the nature of which was conspicuous. But should he be blamed for exploring such a tumor in the total absence of urinary symptoms? I think he should be, when by the use of the catheter a sure means of diagnosis is at hand. The catheter, therefore, should be used in all fluctuating tumors of the lower abdomen as a means of eliminative diagnosis. As a matter of routine the catheter should be used just before laparotomy.

The diagnosis of an acute dilatation of the stomach may be said to be impossible; a correct one in the case mentioned would have been mere guess work.

Even in the light of exploration it is difficult to see what the symptoms meant. In a second case precisely like the first I should feel quite as much in the dark. Those who were familiar with this case would probably suggest the possibility of a dilated stomach. They would use the stomach tube as a means of diagnosis. As the catheter will solve the question of the full bladder, so will the stomach tube that of a dilated stomach. Yet it would seem absurd to say that the stomach tube should be passed in all fluctuating tumors of the lower abdomen. Indeed it is absurd unless the stomach is in some way suggested as the possible cause of the tumor.

The large bulging tumor of the dilated colon, with or without symptoms of intestinal obstruction, gives signs which I am sure will hereafter suggest to me the true lesion. If the tumor subsides under anesthesia, if it is tympanitic, resistant and tender, if it is rounded and symmetrical, if the obstruction is acute, and if there has been no gradual cachexia, the dilated colon is strongly indicated. The suddenness of the appearance of the tumor and of the symptoms rules out the dilated coils of a chronic obstruction, such, for instance, as are due to cancerous stricture.

The diagnosis of extra-uterine pregnancy is usually easy. Pain in the course of irregular menstruation, with dribbling of blood from the uterus, always suggests it. With the sign of hemorrhage the diagnosis is almost sure. With any other confirmatory signs of pregnancy it is about certain. Most cases of extra-uterine pregnancy are unaccompanied by any tumor of considerable size. The tumor, if any is found, is small. It is often buried up in the free blood of the pelvic cavity. Even if a tumor is felt it may not be that of the fetal sac. Recently a friend and gynecologist sent me at the Massachusetts General Hospital a patient with extra-uterine pregnancy, in whom under ether he found the fetal tumor on the right side, where under ether I also found it. The exploration showed a tubal pregnancy too small for bimanual palpation, on the left side.

There are, however, tumors connected with extra-uterine pregnancy and hemorrhage, and of very considerable size, as I have already stated. Those found in the case of an extra-uterine pregnancy are preceded by pain, and accompanied by the usual signs of pregnancy. They are collections of blood in the layers of the broad ligament, or encapsulated in the pelvis.

The diagnosis of ovarian tumor with twisted pedicle is easy when a tumor is known to exist. Where one has not been found previously it is very difficult. It depends upon sudden pain, with or without signs of hemorrhage. The tumor is elastic and tender. The signs of strangulation, gangrene, peritonitis, are often obvious. The diagnosis of ovarian tumor with twisted pedicle must always be suggested by these symptoms.

In spite of difficulties of diagnosis the signs point the right way — towards surgical intervention. It matters little whether the diagnosis of extra-uterine pregnancy is wrong if the surgeon is guided to the relief of an ovarian torsion, or if, expecting a torsion, he finds an extra-uterine hemorrhage; if, expecting an ovarian tumor, he finds a dilated stomach; or if, expecting an internal strangulation or an intestinal obstruction, he finds a dilated and twisted sigmoid flexure. It does matter, however, if, expecting to find a serious lesion, he finds a full bladder, or if, ex-

pecting an ovarian torsion, he finds a normal pregnancy.

Fortunately the call for relief is a loud one in the serious lesion; the surgeon makes few mistakes who quickly responds. It is not a loud cry in trivial cases; it is a suggestion for careful study, or even for prolonged observation, under which the true nature of the phenomena can be accurately determined.

In summing up the matter of these acute abdominal emergencies which constitute the greater portion of obscure and suddenly appearing tumors, I am led to remark that here, as in all medical and surgical practice, the chief aim should be to view the whole with common sense; to consider carefully the history, to weigh carefully the symptoms, to apply all reasonable methods of examination, and finally if it is determined that intervention is necessary, to proceed to operation without unnecessary delay.

In all suddenly appearing tumors of the lower abdomen, however obscure they may be, intervention is demanded if the symptoms are the least urgent. A tumor that has attributes of sudden formation, of tenderness, of hemorrhage, of profound constitutional disturbance, demands immediate intervention. Tumors, however, which do not possess the attributes of urgency may be watched, especially if the local symptoms are subsiding, and if the patient's strength is returning. From their very nature, however, they all require surgical intervention sooner or later.

A CASE OF INFLAMED PERITONEAL CYST SIMULATING OVARIAN CYST WITH TWISTED PEDICLE.¹

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Mrs. A., thirty-six years old; mother of two children, youngest seven years old. Family history negative. Personal history negative, except that menstruation has not been perfectly regular as to time; occasionally the intervals between periods would be prolonged, varying from five weeks to six or eight months. Patient, then, was subjectively a well woman till seven years ago, ten weeks after the birth of her last baby, when she had an attack of what was called peritonitis, which attack was ascribed to mental anxiety and catching cold. Ever since this illness she has been compelled to be careful not to get overtired, overdoing being always followed by discomfort in both iliac regions, lasting from a few hours to several days, and relieved by rest. Four months after this initial illness, she miscarried spontaneously at three months, convalescing without complication. About this time she is said to have contracted malaria. Three years later she had an attack, diagnosed as appendicitis, from which she recovered, but which left her with an occasional feeling of discomfort in the right side of the abdomen.

Patient came under my care in January of the present year. She gave a history of overexertion all the month of December, preparing for the holidays. The exertion brought on the usual pain, which increased in severity, as she did not rest. She menstruated the last week in December, the period being unusually painful. When I saw her,

the first week in January, the flow had ceased for several days, but the pain continued in both inguinal regions, in the back and extending down the backs of the thighs; she also complained of headache and great nervousness. She refused to let me make any examination, and insisted that all she needed was rest and a little medicine for "rheumatism in the back." I prescribed for her and directed her to go to bed. She did not go to bed, but rested a little more than usual and felt better. Four days later she saw me again, and reported that she was better except for frontal and occipital headache, that she was very weak and that her "malaria" was troubling her again, as the night before she had an attack of vertigo with palpitation, followed by prolonged chilliness and cold sweat.

Upon my declining to assume further responsibility for her case without a thorough examination, she finally consented to let me examine her, and I found the following condition: Temperature 101.3°, pulse 80, respiration 22. Heart, lungs, liver and spleen negative. Urine contained large amount of albumin. Vaginal examination showed that the uterus was slightly enlarged, anteфлекed, tender and rather soft. The right broad ligament was resistant, swollen, and contained irregular masses, but was too sensitive to permit the appendages to be distinctly outlined. The left pelvis was filled with an elastic, tender cystic tumor extending up into the abdomen, midway between the symphysis and umbilicus, and from near the median line to about midway to the anterior superior spine of the ilium. Behind and below this tumor, near the cul-de-sac, was a small, irregular, firm, exceedingly tender mass. A diagnosis of acute exacerbation of a chronic salpingitis, with possible presence of pus, and probable left ovarian cyst, was made.

The patient was warned of the seriousness of her condition, but she still resisted going to bed. During the night she had a repetition of the chill and sweat. The next morning she had a chill lasting two and a half hours; I saw her just as the chill was subsiding and found her face flushed, conjunctivæ injected and an icteric tinge of the skin. Temperature 103.3°, pulse 92, respiration 20. Examination showed no change in the findings of the day before, but the patient looked much more ill. In the evening I was sent for in haste, and found intense abdominal pain over the region of the tumor; the abdomen was tympanitic and markedly sensitive, and there was some rigidity of the walls. The patient had been delirious at times the past few hours, and was vomiting at intervals. Temperature 104.8°, pulse 96, respiration 24. I made a diagnosis then of pyosalpinx with probable twisted pedicle of the cyst (ovarian?), and urged celiotomy.

The next morning I hastily curetted the uterus, hoping to leave that organ, and then performed celiotomy. On opening the abdomen and detaching the adherent omentum, there was escape of a small quantity of bloody serum. After walling back the intestines with gauze, the pelvis was seen as follows: Uterus in position, slightly enlarged, especially longitudinally, fundus forward. To the left of the uterus was a tumor which nearly filled the left pelvis and projected upward, into the abdominal cavity; its walls appeared roughened, dark red in color and had enlarged veins running over the surface. The left tube, slightly enlarged, was seen to be stretched out over

¹ Read before the Surgical Section of the Suffolk District Medical Society, March 7, 1900.