enterostomy for cancer, and are aware, too, that in gastric and duodenal ulcers the acidity of the stomach secretion is usually increased. I feel, then, that a careful regulation of diet for patients in their convalescence—even their late convalescence—after gastroenterostomy and the inhibition of alkalis over a considerable time after operation would do much to do away with some of unpleasant post-operative occurrences.

DISCUSSION.

DR. E. P. RICHARDSON (closing): It seems to me that the distinction between jejunal and gastro-jejunal ulcers is one that deserves to be clearly drawn. The important practical point is, of course, the occurrence of gastro-jejunal ulcer in connection with the use of unabsorbable suture material. With the etiology so clearly shown in so many instances, it is a complication which should be avoidable by changes in technique. In jejunal ulcer, however, which occurs at definite distance away from the suture line, and occasionally apparently after a considerable period of time, I fail to see how the technique of the suture itself can be the most important factor. It seems to me that we must look further than the question of suture material. These cases are, of course, much rarer than gastro-jejunal ulcer, but still they do occur. I feel that Dr. Bottomley's suggestion that they may be the secondary expression of a septic focus elsewhere is very important, practically as well as theoretically. Such a focus, existing in the abdomen, might also tend reflexly, to increase the gastric acidity. This certainly occurs in stomachs otherwise normal, and I see no reason why it should not tend to occur following gastro-enterostomy.

In reply to Dr. Churchman's question in regard to the x-ray, apparently the actual crater is rarely shown by the x-ray. Other evidence shown more indirectly by the x-ray study is apparently of great importance in diagnosis.

Original Articles.

VAGINAL DELIVERY AFTER CESAREAN SECTION.*

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OWING to the steadily increasing indications for the performance of Cesarean section, particularly in this country in recent years, there has developed a large class of women who must

face pregnancy and childbirth after previous Cesarean section. The majority of obstetricians consider the proper treatment of these cases is determined by the expression,—to them an axiom,—“once a Cesarean, always a Cesarean.”

These men base their view on the theory that the scar in the uterus from a former Cesarean section has weakened the uterine wall at that point, and makes rupture of the uterus a grave danger in the event of subsequent pregnancy and labor.

The object of this paper is to point out that the patient who has had a Cesarean section properly done, for some cause other than a pelvic indication, may with safety, as far as the Cesarean scar is concerned, be subjected to future pregnancy, labor and vaginal delivery, provided her convalescence has been afebrile and free from uterine infection.

A series of experiments was made in 1910, by the writer¹ and Dr. John T. Williams on pregnant cats and guinea pigs, to determine the relative strength of scar and uterine wall. Weights were suspended from sections of the uterine wall containing linear scars, and it was found that rupture invariably occurred in the muscle and not in the scar. These results confirmed the clinical observations of Schauta², who says that with modern closure of the wound rupture will more likely occur outside the scar.

Dr. Brodhead of New York in a letter to the writer a few days ago expresses the following views: “If patient has had Cesarean for eclampsia, placenta previa, or minor contraction, I can see no reason why she should not have a chance with normal labor. If the contraction is major, induction of labor at 8 months would probably be safer for the mother, at least. In other words, with marked contraction at term with a large child I would advise a second Cesarean.”

Dr. Palmer Findley,³ in a recent impartial and exhaustive analysis of rupture of the Cesarean scar, expresses himself in the following words: “I confess at the onset to have entertained a prejudice in favor of repeated Cesarean section in all cases to forestall a possible rupture, but as the work developed in my library I was led to conclude that such a position is untenable.”

I am told by Dr. Frank Konrad, who has recently been for 16 months in charge of the University Frauenklinik at Freiburg during the absence of Professor Krönig at the front, that the latter holds strongly to the view and constantly gives voice to it in his teaching, that a patient who has had a Cesarean section may with safety in a subsequent pregnancy be allowed to pass into labor and be delivered by the vaginal route.

To aid in securing a firm scar, labor should be well established, as pointed out by Dr. Charles M. Green,⁴ before the operation is performed. He states “that the scar will be thicker and stronger if the closing sutures are applied to a uterine wall thickened by several hours of contractions, than when placed in the thin, com-

* Read before the Obstetrical Society of Boston, Nov. 28, 1916.

paratively flabby wall of a uterus incised before labor has begun."

The longitudinal fundal incision is likely to give the best result from the standpoint of future strength of the scar, particularly where future Cesarean sections are contemplated. The muscular development of the uterus is greatest high on the body. The low median incision of earlier days is quite likely to produce a serious complicating factor. Omental and intestinal adhesions over the anterior face of the uterus occur in many cases after the operation. These adhesions can be well dealt with at a future operation when situated high on the uterus, but if low down, because of their close proximity to the bladder, it is often difficult to free them without injury to the bladder. It is also extremely difficult to differentiate the tissues, and from fear of doing harm to the bladder, proper coaptation of the muscular walls of the uterus is frequently not obtained at the lower angle of the wound.

Palmer Findley⁵ points out that the transverse fundal incisions are relatively insecure.

Since eversion has been abandoned a shorter and therefore stronger scar has resulted. In the performance of the operation certain points of technic should be mentioned as being essential to the securing of a firm uterine scar. The principles of S^änger⁶ should be carried out. These principles are the layer method of suturing, sutures closely placed which include the entire uterine muscle but avoid the decidua, the rolling in of the peritoneal coat and tying the sutures firmly with three knots.

Dr. Newell lays stress on a point in closure which is of vital importance. It is to place a deep suture through the uterine musculature, both above the upper angle and below the lower angle of the wound because at these points splits in the muscular tissue frequently occur in the extraction of the body and head of the child. It seems probable that failure to repair such splits is not infrequently the direct cause of an imperfect scar, because in a large proportion of the reported cases of faulty scars the weakened areas have been described at the upper and lower angles of the former incision. Lateral splits in the musculature of the uterine wall also occasionally occur because the incision in the uterus is made too small to allow the head to be delivered through it. Thorough inspection of the edges of the cut uterus should be made, by evertng it, half at a time, through the uterine incision. These splits when found should always be sutured. It is well to resect the scar at repeated sections and so leave the woman with only one scar when she has had several operations.

The character of the suture material in the absence of infection probably plays but little part in the subsequent strength of the scar. Chromicized catgut of all materials used has given the best results. Silk and linen have been discarded at the Boston Lying-in Hospital.

When silk and linen were employed local infection of the wound and the subsequent development of ventral herniae were more common than at the present time. The writer at the time of the general wave of enthusiasm for iodized catgut employed it in the uterus and experienced the misfortune of having two patients develop utero-abdominal fistulae following Cesarean section.

The qualities of strength, slow absorbability and tolerance of infection without itself becoming infected raise the question as to whether or not kangaroo tendon might be an ideal suture material for uterine closure.

The following case illustrates the permanency of kangaroo tendon:

CASE 1. A. B. High forceps operation at the Boston Lying-in Hospital in 1910. Two Cesarean sections followed at the Salem Hospital in 1912 and on Nov. 28, 1913. At the second section, medium kangaroo tendon was used for the uterine closure. At a third Cesarean section performed by Dr. Newell at the Boston Lying-in Hospital on Feb. 22, 1916, nearly 2 years and 3 months after the last one, the former Cesarean scar was found to be firm and the sutures still in place.

Where there is a reason to suspect that the method of closure of the uterine wound after a Cesarean section has been faulty or infection in the convalescence has been present, we are not justified in permitting a labor of any length to occur. Such cases may tolerate labor and vaginal delivery, but it is not wise to take the risk of subjecting a uterus to labor in which the scar may be imperfect.

The operation of Cesarean section has been performed 393 times at the Boston Lying-in Hospital, beginning with the first one by the late Dr. George Haven on July 15, 1894, and ending with the most recent one by the writer on Nov. 24, 1916. Of these operations 106 have been repeated sections. The 106 repeated sections were performed on 73 women; that is, second sections were done on 49, third sections on 19, fourth sections on 2, fifth sections on 2, and a sixth section on 1.

In the early days of doing the operation, careful closure was sacrificed to speed, and proper apposition of the tissues of the uterine wall was not always secured. As a result in these cases, the uterine walls healed imperfectly and became permanently weakened. Many of the cases formerly operated upon, we judge from our present viewpoint to have been manifestly unsuitable for Cesarean section. Some of these earlier cases were patients who had been long in labor, often with ruptured membranes—women who had been examined many times in unclean fashion and those upon whom many attempts at operative delivery from below had been made. The sequence of abdominal section upon these women was puerperal infection, with marked local manifestations in the uterine

wound. A number of these cases who had been subjected to these unfavorable conditions again became pregnant, were allowed to have labors of varying duration and then repeated Cesarean sections performed. In not a single instance has any one of these 106 repeated sections come to grief either in a subsequent pregnancy or labor. To be sure, some of these cases showed uterine walls that were dangerously thin, and in several instances the operator found areas in the uterus covered by tissue amounting to hardly more than peritoneum. The account of these cases is given in the reports that follow.

The following reported cases are, with one exception, confined to those collected in this community, in order to be certain of their authenticity. The histories have been obtained from hospital records or directly from the men who have been in charge of the patients. The names of the attending obstetricians and surgeons are mentioned in most instances to call attention to the fact that these cases are occurring not infrequently about us with satisfactory results.

CASE 2. S. H., a colored primipara of 16, had a first Cesarean section for a justo-minor pelvis performed at the Boston Lying-in Hospital on Feb. 5, 1898. The operation was performed after 19 hours of labor, the patient being fully dilated and with ruptured membranes. A septic convalescence followed, in the course of which the entire abdominal wound broke down. She has had five sections since that time, one of which was a twin birth. Some of the incisions have been in the lower abdomen starting from just above the symphysis pubis. Such extensive adhesions formed after the first operation that the five subsequent ones have been extra-peritoneal. At the last operation, the sixth section on Oct. 14, 1916, Dr. Torbert found an area in the lower third of the scar of the size of the palm of the hand, close to the bladder, covered over only by peritoneum. A careful plastic has placed this patient, we trust, in a position to hold the record of the world for Cesarean section.

It seems not unlikely in this case that the dehiscence in the musculature of the uterine wall may well have been the sequence of former Cesarean scars low on the anterior face of the uterus in close proximity to the bladder. The well-known prevalence of Neisser infection in the colored race may also have been a causative factor in the weakening of the scar.

CASE 3. R. C. This patient was a rachitic dwarf who had five Cesarean sections performed at the Boston Lying-in Hospital. The first one was done on Feb. 20, 1909, and the last one on Aug. 30, 1916, by Dr. Torbert. Most of the incisions which had been made were the low longitudinal ones starting from just above the symphysis pubis. The following note in part was made descriptive of the last operation: "Membranes not only adherent to the uterine wall in many places, but in some spots had actually coalesced with the old uterine scar which at these

points was as thin as paper. Deemed advisable to remove this portion of the uterine wall. Piece about 3 cm. in diameter excised. Ventral abdominal hernia repaired at the same time. Good convalescence."

In this instance again the uterine incision was not far removed from the bladder.

CASE 4. J. W., a colored primigravida of 19, with a generally contracted pelvis, was delivered by Dr. Torbert at the Boston Lying-in Hospital by Cesarean section on Sept. 26, 1908. Her convalescence was complicated by an acute dilation of the stomach and a pelvic peritonitis. A second Cesarean section was done by Dr. Kimpton at a private hospital on Jan. 23, 1910. The uterus was sutured in two layers with No. 1 chromic catgut. A loop of small intestine was found to be very adherent to the fundus of the uterus but was not disturbed. The new incision was made through the former scar and extended up to the adherent gut. Convalescence uneventful. About two months later, on March 25, 1910, she entered the Boston City Hospital for acute appendicitis and was operated upon by Dr. Blake. At this operation the loop of bowel adherent to the fundus of the uterus was removed, excising with it a portion of the uterine wall. A third Cesarean section was done by Dr. De Normandie on August 12, 1911. At this operation the anterior wall of the uterus was found to have a fibrous glistening appearance, and in the centre of it, over an area 3 inches by 4 inches in size, there was only a thin peritoneal covering. The thin tissue was excised, the edges of the muscle were refreshed and brought together. The convalescence was complicated by a uterine infection during the first 10 days. A fourth Cesarean was done by Dr. Green on April 15, 1913. Uterus presented a normal appearance. Good convalescence.

The imperfect scar found at the third Cesarean section followed an excision of the gut from the uterine wall at the time of the appendectomy. A Neisser infection may also well have been present in this colored patient. The fourth section gave evidence of excellent repair of the uterine wall.

These three patients, whose histories we have just taken up, are the only ones in our repeated sections who showed serious weakness in their former scars. In many other cases the scars were visible and often contained thin areas along their course.

CASE 5. Dr. Green⁷ reports a spontaneous rupture of the uterus in the ninth labor of the patient after 7 1/2 hours of pains. She had been seen at her home by the house officers of the Boston Lying-in Hospital, who found a transverse presentation and a contraction ring. While arrangements for transfer to the hospital were being made, the contraction ring disappeared, labor stopped and shock developed. Dr. Green found on her admission a shoulder presentation with the left arm and a pulseless cord prolapsed through the fully dilated os. The feet of the baby were easily palpable under the abdominal wall. He delivered the patient by podalic version of a dead foetus weighing 4 3/4 lbs.

The abdomen was promptly opened while the pulse was 180. Dr. Green described his findings and operation as follows: "The uterine rent extended diagonally from well above the left broad ligament; downward close to the bladder peritoneal reflex, thence over the upper border of the right broad ligament; four fingers could be passed between bladder and uterus into the vagina; there was no rupture of large vessels. Hysterectomy was considered, but uterine suture was decided on. Deep muscular sutures of linen were passed until I came to the bladder, where it was impossible to suture the uterine muscular wall, and only the peritoneum was closed." The patient convalesced well. Four weeks later an examining finger passed through the torn cervix could feel no trace of the unsutured rent between bladder and uterus, it having evidently closed in the involution. Seventeen months later, an externe from the hospital attended the patient in her home in her tenth labor. The breech presented high, and on rupture of the membranes both feet and a pulsating cord prolapsed into the vagina. Easy traction delivered a 6½-pound living baby, the whole labor having lasted 8 hours. Convalescence was normal.

Although this patient did not have a Cesarean section scar, the uterus was forced to tolerate a strain fully as severe.

CASE 6. Dr. Green⁸ also reports a case of complete traumatic rupture of the uterus with the escape of the placenta into the peritoneal cavity. No suturing was done and the woman recovered. She subsequently delivered herself safely in normal labor without uterine trauma.

It would seem reasonable to assume from the history of the above two cases that if the uterus can safely withstand pregnancy and full-term labor following such trauma it should be able to accommodate itself in pregnancy and labor to a well-healed Cesarean section scar.

CASE 7. M. F. A Cesarean section was performed by Dr. DeNormandie before the advent of labor at the Boston Lying-in Hospital on this patient Aug. 16, 1911, because she had a justo-minor pelvis and the head could not be pushed into the brim. The baby weighed 7 1-2 pounds. The convalescence was complicated by a uterine sepsis of 2 weeks' duration. The patient entered the hospital a second time in hard labor with the head bulging the perineum, on Nov. 2, 1913. A labor of three hours and 10 minutes was terminated by a low forceps operation and a child weighing 7 lbs. 1 oz. delivered. The third pregnancy ended with a precipitate labor of 2 1-4 hours, an 8-lb. child being delivered. The patient was attended at her home by an externe house officer from the Boston Lying-in Hospital, and it was not until after her delivery that the externe house officer learned she had been the subject of a previous Cesarean section. A fourth pregnancy was terminated on Aug. 27, 1916, at the State Infirmary in Tewksbury by a normal labor lasting 8 hours. Baby weighed 7 lbs. 7 oz.

The forces of nature effected a normal descent through the pelvic canal three times in succe-

sion following a previous Cesarean section, and twice before there was an opportunity to contemplate forestalling vaginal delivery by the abdominal route.

CASE 8. H. L. Cesarean section at the Boston Lying-in Hospital by Dr. Hubbard for contracted pelvis on Aug. 13, 1906. Female child weighed 7 lbs. A second pregnancy was terminated by induction in England at 8 months with good results for mother and child. A second Cesarean section was done at the end of the third pregnancy at the Boston Lying-in Hospital by Dr. Torbert on Jan. 15, 1913. Female child weighed 6 1-2 lbs. Nothing remarkable was noted about the uterus at the time of operation.

CASE 9. Mrs. A. Dr. Young tells me the following obstetric history of one of his patients. The second pregnancy ended in a forceps delivery of a 7-lb. child in October, 1911. In the next pregnancy an 8 1-2-lb. child was delivered by Cesarean section on July 25, 1914. A second Cesarean section was performed by Dr. Young on Aug. 25, 1915, for an 8-lb. child. At this operation the mark of the old scar could be seen, but it was solid, no thin places being found. A fourth pregnancy ended in a 4 months' miscarriage on Oct. 14, 1916. Uneventful recovery except for the retention of one small piece of placenta for which a curettage was done.

CASE 10. Mrs. R. Dr. Richard D. Schmidt tells me of a patient whom he attended at 3 normal labors in 1909, 1910, and 1912, the babies weighing 8 1-2, 6 1-2 and 8 3-4 lbs. respectively. Her fourth pregnancy was complicated by the severe hemorrhage of a placenta previa at 7 months, for which a Cesarean section was done by Dr. Sleeper at the Salvation Army Hospital in December, 1913. Baby weighed 6 lbs. The convalescence was complicated by temperature and chest symptoms, making it impossible to exclude local infection of the uterus and pulmonary tuberculosis. Pregnancy occurred a fifth time and labor took place at full term in July, 1915. Dr. J. J. O'Brien, who was in attendance, has told me of the labor. On arrival at the patient's house he found her in hard labor with the os fully dilated and the head low. Pituitrin was given. The pains became at once markedly increased in strength and 10 minutes later, an 8-lb. child was delivered normally. It is worth while to note that the last child weighed within 3-4 of a pound of the heaviest weight of the babies in the 4 previous pregnancies. The entire labor lasted 2 hours. Convalescence was normal.

In this instance we have a patient whose uterus contained a Cesarean scar, but was able to withstand the strong pains of a precipitate labor which became tumultuous at the exhibition of pituitrin.

CASE 11. Dr. Good reports a high forceps operation performed in consultation for a justo-minor pelvis in 1908. The baby weighed 8 1-2 lbs. and was still-born. Following delivery the patient suffered considerably from trauma to the bladder and convalesced with a poor perineum. Dr. Good deliv-

ered her by Cesarean section of a baby weighing 8 3/4 lbs. in 1909 and by a second section of a baby weighing 8 lbs. in 1911. He again delivered her twice by a low forceps operation, after a hard five-hour labor of an 8-lb. baby in 1913 and after a vigorous six-hour labor of a 9-lb. baby in 1915. All four convalescences were normal.

In this instance the last child weighed more than any one of the previous babies, including the two born by Cesarean section. Forceful pains, coupled with slight cervical and perineal resistance, afford us the explanation of the easy and rapid descent of the head.

CASE 12. Dr. Percy of Arlington reports a case of a patient whose leg was amputated for tubercular disease at the age of 5. One side of the pelvis distinctly flattened. Eleven years ago her first pregnancy was ended by a destructive operation in Labrador. Six years ago she had a hard instrumental delivery. Baby weighed 8 lbs. and had a persistent obstetrical paralysis. A Cesarean section was done 3 years ago by Dr. Howard Lothrop. Baby weighed 7 1/2 lbs. One year ago a high forceps operation was performed. Baby weighed 8 1/2 lbs. and had a slight obstetrical paralysis which soon cleared up.

CASE 13. Dr. Good tells of a patient whose first labor was terminated by a difficult high forceps operation. He performed a Cesarean section in 1911 in her second pregnancy for twin babies and did a low forceps operation in 1915 after an active four-hour labor, delivering an 8 1/2-pound baby. All three convalescences were normal.

CASE 14. M. F. A forceps operation was attempted upon a primipara who had been in labor for 60 hours with no cervical dilatation and no descent of the presenting vertex but failed. A Cesarean section was performed and a child delivered weighing 7 lbs. 7 oz. The immediate convalescence was good, but after a month was complicated by pneumonia and phlebitis for one month. Her second labor was attended by Dr. J. J. O'Brien, but the patient being fearful of a second abdominal operation did not send for him until she had been in labor for 20 hours. Eight hours later she was easily delivered by a low forceps operation of a 9-lb. baby. Convalescence normal. The patient is again four months pregnant.

A labor of 2 1/2 days without progress was followed by another labor more forceful in character, but not one-half as long, which brought the presenting head of the baby, 1 lb. and 9 oz. heavier than the first baby, to the pelvic floor.

CASE 15. Dr. Percy of Arlington tells me of a patient whose first child was delivered normally. Three years ago a Cesarean section was done for placenta previa by Dr. Howard Lothrop. A third baby was delivered normally 8 months ago after a 5-hour labor. All these children weighed about 6 1/2 lbs. Normal throughout.

CASE 16. M. W. A case of antepartum eclampsia was delivered by Cesarean section by Dr. Sleeper

at the Salvation Army Hospital on Feb. 16, 1914. Premature baby weighed 6 lbs. Slight infection complicated the convalescence but a good recovery was made. A second pregnancy ended by normal delivery in twilight sleep at the New England Hospital after a labor of 15 1/2 hours on Sept. 15, 1915. Baby weighed 8 lbs. Excellent convalescence. Patient is now again 7 months pregnant.

The extra-pelvic cause which had been the indication for the section, being removed, normal labor, aided by "Dammerschlaf," took its natural course.

CASE 17. P. M. Colored primipara of sixteen. Cesarean section at the Salvation Army Hospital by Dr. Frank W. Sleeper for eclampsia on Feb. 9, 1913. Female child weighed 6 lbs. Stormy convalescence from a general infection running a high temperature off and on for 5 weeks. A second pregnancy ended in a normal delivery at the Long Island Hospital on May 20, 1914, after a labor of 16 hours. Female child weighing 6 lbs. 8 oz. A third pregnancy ended in a normal delivery at 8 months at the Boston City Hospital, Oct. 7, 1916, after a labor of a few hours. Male child weighed 4 lbs. 12 oz.

CASE 18. J. S. Dr. John T. Williams reports the case of a patient who had had a Cesarean section by Dr. Crandon for undilatable contraction ring after failure of forceps delivery by patient's physician. Two years later, on Nov. 22, 1914, Dr. Williams attended the patient at a normal delivery after a five-hour labor. A retained placenta made it necessary to enter the uterus with the hand to extract it, and on digital examination allowed the finger tips to pass into a cul-de-sac at the upper end of the scar where the thickness of the uterus was not over 1-2 inch.

These patients in the last two cases were delivered normally when the cause for the Cesarean section operation was no longer present.

CASE 19. E. P. A primipara had a Cesarean section performed by Dr. Green at the Boston Lying-in Hospital on April 2, 1914, because of a just-minor pelvis and failure to engage the head in the brim after 10 hours of strong first-stage pains. Baby weighed 9 lbs. The convalescence was complicated by a mild sepsis of 10 days' duration, at the end of which time a piece of membrane was passed. The patient again appeared at the hospital after 2 hours of hard labor on June 16, 1915, fully dilated with the head on the perineum. She was delivered by a low forceps operation of a 6-lb. baby. A slight uterine infection lasting 5 days complicated the convalescence.

CASE 20. Dr. Hubbard tells of a patient whose first labor began three weeks later than the expected time. The child was large and the attending physician, failing in his attempt at forceps delivery, called in a consultant who performed a Cesarean section. In the second pregnancy labor was induced when the patient was a few days overdue in order to secure a smaller child than before. This labor was prolonged, but otherwise normal.

I understand from Dr. Hubbard that he is now taking care of the patient for the first time in her third pregnancy and that he will decide later whether her delivery will occur by the vaginal or abdominal route.

CASE 21. A. H. This patient had two Cesarean sections done for a flat pelvis, one by Dr. Erb at St. Elizabeth's Hospital in 1907 and the other by Dr. Holmes at the State Infirmary in Tewksbury in 1910. The babies weighed between 8 and 9 lbs. A third pregnancy was terminated by an easy low forceps operation by Dr. Green at the Boston Lying-in Hospital on March 7, 1914, after a prolonged first stage with signs of exhaustion. Baby weighed 5 lbs. 4 oz. Uneventful convalescence.

CASE 22. Dr. Frank Williams reports a case where high forceps was attempted and failed. A Cesarean section was done and a 12-lb. baby delivered. The convalescence was complicated by a severe septic infection. Two years later the patient delivered herself normally of a 6-lb. child. Convalescence was normal.

These four cases of smaller babies delivered vaginally followed the delivery of larger babies by Cesarean section.

CASE 23. E. J. A colored woman with a justo-minor pelvis had three Cesarean sections performed at the Boston Lying-In Hospital in 1899, 1901 and 1907, the babies weighing 6 lbs., 6 lbs. 6 oz., and 6 lbs. respectively. The first section was done after 11 1-2 hours and the second section after 9 hours of ineffective labor. The third section was done before the advent of labor. In her fourth labor at the hospital in 1908 she delivered herself normally, after 14 hours of strong pains, of a child weighing 6 lbs.

CASE 24. J. W. A woman with an irregular pelvic contraction from hip disease had three Cesarean sections done at the Boston Lying-in Hospital in 1900, 1901 and 1905 and the babies weighed 8 lbs., 7 lbs. 8 oz., and 7 lbs. 8 oz., respectively. At her fourth labor at the hospital in 1908 her pains were harder than ever before and she delivered herself normally of a baby weighing 7 lbs. 3 oz., which was 13 oz. less than the weight of the baby for which section was originally performed.

CASE 25. M. S. An early miscarriage ended this patient's first pregnancy. A right salpingo-oophorectomy for an extra-uterine pregnancy was done in the Somerville Hospital in 1911. A Cesarean section was done by Dr. Newell for a justo-minor pelvis after 27 3-4 hours of labor at the Boston Lying-in Hospital on Nov. 20, 1914. Female child weighed 5 lbs. 3 oz. Normal convalescence. Nearly two years later the patient entered the Boston City Hospital in labor at full term. Labor lasted 24 hours, but at the end became so rapid that the house staff did not reach the patient until after delivery. Male child weighed 5 lbs. 4 oz. Normal convalescence.

CASE 26. I. N. The writer had charge of a primipara of 24, whose labor started with a rupture of the membranes. After 12 hours of nagging pains the head remained floating and the os undilated. Cesarean section was done on Jan. 26, 1914, for a 6 1-4-lb.

baby. A second labor vigorous in character brought the baby to the pelvic floor in 7 hours. A low forceps operation was done on Sept. 21, 1916, and the baby weighed 5 lbs. 5 oz.

More vigorous pains than in former labors was the factor in these four cases, which in three produced normal delivery and in one a low forceps operation after previous Cesarean section.

CASE 27. A primipara of 27 had 12 hours of labor, but the head remained high, the os undilated and the fetal heart dropped to 100. A Cesarean section was performed by Dr. Torbert and a 7-lb. baby delivered. Convalescence slow because of poor general condition. The general health of the patient improved and two vaginal deliveries followed the section, attended by the family physician. The patient had a 16-hour labor Oct. 24, 1915. The head was posterior. Two doses of pituitrin were given and a baby was delivered weighing 7 lbs. 6 oz. The patient again fell in labor with a posterior head Aug. 19, 1916, and after 6 hours of pains, aided by 2 doses of pituitrin, was delivered by low forceps of a 7 lb. 3 oz. baby. Excellent convalescence after both forceps deliveries.

Each one of the babies delivered by low forceps weighed more than the Cesarean baby. The improved general health of the patient caused stronger pains than before, and these, increased by pituitrin, brought the baby down to the pelvic floor.

CASE 28. Dr. Broadhead writes me of a case of normal labor following Cesarean section, recently reported by him at the Sloane Alumni meeting. The patient had a true conjugate of 8.50 cm. The baby had a biparietal diameter of 10 cm. and weighed 9 lbs. 12 oz. He says: "My patient had the notion in her head that she had not had a long enough chance to give birth and that the Cesarean had been perhaps not necessary. She was therefore very anxious to have a 'try,' and I agreed to this, provided she came to the hospital at once after beginning labor. The labor was very easy, terminating with several easy tractions with low forceps."

CASE 29. I. L. Dr. John T. Williams reports a personal case. A Cesarean section was done after 4 days of false pains, the pulse having risen in rate and the head remaining high. Baby weighed 6 1-2 lbs. Good recovery. In a second labor the patient having requested a vaginal delivery, after 14 hours of pains the os had dilated but slightly. A moderately hard forceps was performed. Baby weighed the same as before.

These two patients, desiring to avoid a second Cesarean section, were allowed to have labors, both of which were terminated by a forceps operation.

CASE 30. A. H. Colored primipara of eighteen. Cesarean section at the Boston Lying-in Hospital by Dr. Newell for a justo-minor pelvis on Aug. 30, 1901. Female child weighed 5 lbs. 11 oz. Normal convalescence. Second pregnancy ended in a mis-

carriage July 4, 1902. Second Cesarean section at the Boston Lying-in Hospital by Dr. Green on April 5, 1906. Male child weighed 7 lbs. and 8 oz. Normal convalescence. Fourth pregnancy ended in a miscarriage at 6 months at the Boston Lying-in Hospital on Oct. 6, 1907. Ten-ounce male macerated foetus. Fifth pregnancy was terminated by a Cesarean section at the Boston Lying-in Hospital by Dr. Newell on Oct. 5, 1909. Female child weighed 6 lbs. 9 oz. Nothing remarkable was noted about the uterus.

Cesarean sections and interruptions of pregnancy alternated in this case, but the uterus showed no impairment in its integrity when seen at the end of every other pregnancy.

CASE 31. F. P. The patient had had four difficult operative deliveries followed by four still-births. A Cesarean section was performed by Dr. Green at the Boston Lying-in Hospital on March 3, 1915. The indications were the past history and an obstetric conjugate of 8 cm. Baby weighed 7 lbs. 6 oz. Convalescence uneventful. The patient again entered the hospital on Sept. 12, 1916, and came under the writer's care. She was sent in for a second Cesarean section after 24 hours of hard pains. An examination showed a woman in active labor with a pulse of 110 of rather poor quality. The uterus had a tendency to become tonic and the head was floating. An unsuccessful attempt at a high forceps application was made. An internal podalic version was cautiously performed, with good result for mother and child. Baby weighed 8 lbs. 1 oz. A manual examination of the interior of the uterus after delivery revealed no trace of the former Cesarean section scar.

The patient's previous history indicated Cesarean section as the proper mode of delivery. It was not performed, however, because the length of labor, the tonic uterus and her poor pulse jeopardized the safety of the mother if the peritoneal cavity were to be opened. High forceps failed, and craniotomy was deemed undesirable because the baby was alive. This last baby, delivered by version, weighed 11 oz. more than the one delivered by Cesarean section. The uterus which contained a Cesarean section scar and had become tonic from a long labor withstood an internal podalic version.

A search throughout the community to find cases of rupture in the scar of the Cesarean uterus in subsequent pregnancy or labor has revealed but one case, and that a spontaneous rupture in the scar of a full term pregnancy.* This case is certainly unique in view of the fact that the suturing of the uterine wound was not at fault and the convalescence from the operation was afebrile.

This case is one of such extreme rarity that it seems proper to classify its occurrence among the accidents of surgery which the obstetric surgeon of the present day must face as the obstetric attendant of the past has met spontaneous rupture of the normal pregnant uterus in labor and embolism in the puerperium.

* Personal communication by Dr. C. H. Hare.

CONCLUSIONS.

If the advantages of the improved technic of the present day are employed, and the convalescence is free from infection, the Cesarean scar will be strong enough to withstand the distention of a full-term pregnancy and the strain of labor.

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THE REASONS FOR THE RE-ENTRY OF HOSPITAL PATIENTS.

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A SHORT time ago the writer listened to some tales and opinions, which expressed in a general way the feeling entertained by many concerning the treatment which patients receive in the larger hospitals. The burden of these complaints was that patients were often operated upon unnecessarily and that they were many times forced to return owing to the unsuccessful treatment accorded them. These criticisms were not directed toward any institution in particular; but they aroused the interest of the writer and led him to investigate the reasons for the re-entry of patients, in order to ascertain whether their return was due to inefficiency of hospital treatment, to their own inefficiency, or to vicissitudes of life encountered by some, if not by all. Naturally, over the last two causes the hospital can exert but a slight control, and in most instances, none whatever.

For the purpose of this investigation, 100 cases, all admitted more than once, were taken at random from the records of the Gynecological Service, by one who did not even know for what purpose they were intended. Although all of these women have been treated by the service, a few have been admitted to the surgical departments of the hospital as well, and a small number have been at other hospitals. As it was impossible to find out exactly their ailments while there, only entries to Boston City Hospital wards are considered.

This paper is intended neither as a defense nor as an apology for the treatment of hos-