REPAIR OF LACERATIONS OF THE CERVIX UTERI.

AN INVESTIGATION AS TO THE PROPER TIME FOR THE OPERATION.*

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The following paper embodies the conclusions derived from an investigation covering one year and five months. At the outset all preformed opinions were relinquished and a true spirit of unbiased investigation prevailed. Realizing that it is far easier to teach one wholly ignorant than to controvert preformed opinions, I placed myself in the attitude of a beginner. At the outset I was a partisan of certain operative procedures and certain methods of technic, but this investigation has shown me the narrowness of this attitude. The indications for any certain procedure or technic are inherent in the individual case, not in the predilection of the operator. It is, then, a modest following of the example of Herodotus in that it is "a setting forth of investigation."

As a basis of my study I carefully tabulated the results of one hundred tracheloplastic operations performed at the Free Hospital for Women. A majority of these operations were trachelorrhaphies. This number was selected, as the proportions also represent percentages. Considering two years as a minimum allowance in which to observe the ultimate results of the operation, including its effects on subsequent pregnancies, I began at Jan. 1, 1900, and worked back until replies were received from one hundred women.

So difficult is it to trace these nomadic patients that my one hundred include cases in which from two to five years have elapsed since the operation. Reporting cases under two years would easily have enabled me to tabulate results of several hundred cases, but would have lessened the actual scientific value of the deductions.

My first desire was to prove tracheloplasty a necessary and justifiable procedure. I use the word tracheloplasty, as suggested by Newman in 1898, advisedly, as I distinctly disclaim partisanship to any one procedure.

To consider an operation necessary, symptoms must exist which fail of relief by palliative treatment. To be justifiable, it must relieve these symptoms without endangering the patient's future welfare to a greater extent than does the disease, or it must protect her against a presumably more serious sequel of the above-mentioned symptoms. Except in very exceptional cases, tracheloplasty should be resorted to only after all possible improvement has been achieved by palliative treatment, and this failing, if the operation accomplishes the desired relief it is fair to assume that the operation was necessary. In practically all of these one hundred cases competent palliative treatment had been employed in our out-patient department.

To be justifiable, it must relieve the symptoms, local, referred, and so-called reflex, without causing future sterility, miscarriage or dystocia. Another justification exists if it can be shown to act as a prophylactic of cervical carcinoma.

My first step, coincidently with an extensive research of all reliable recent and much antequated literature on the subject, was the sending of a circular letter to

ex-patients requesting answers to the following questions:

THE QUESTIONS ASKED OF EX-PATIENTS.

1. Did the operation relieve your suffering?
2. Have you given birth to any children or had any miscarriages since the operation?
3. How many and when?
4. Was your womb injured by any of these births?
5. If so, how?
6. What is the name and address of the physician who attended you in each confinement since the operation?
7. Have you had any womb trouble since the operation? If so, please state the nature of the trouble.

The following is a summary of the answers received:

QUESTION 1.—Did the operation relieve your suffering? Complete relief resulted in 78 (78 per cent.) cases. Great relief followed in 11 (11 per cent.) cases. No benefit accrued in 11 (11 per cent.) cases. No patient was made worse by the operation. We are accordingly justified in stating that in properly selected cases a properly selected procedure is here devoid of danger; that it is followed by beneficent results in 89 per cent. of the cases. Eighty-nine per cent. of cure or great relief justifies the operation, but this percentage can be materially raised by a more discriminating selection of cases, more thorough palliative preparation and improvement of technic.

QUESTION 2.—This question regarding subsequent pregnancies sought a two-fold enlightenment, namely, does tracheloplasty predispose to sterility or to miscarriage? There were thirty-seven pregnancies subsequent to the operations and of these 24 (80 per cent.) went to full term. Whether any of these 13 (20 per cent.) miscarriages were procured I was unable to learn. Probably a few were. Twenty-three of my 100 women were past the child-bearing period or were widows, which elevates the percentage of pregnancies from 37 per cent. to an actual 49 per cent. Therefore, a proper tracheloplasty does not engender sterility. Moreover, accurate determination of this point is impossible, as most women having undergone one operation, the direct result of injuries incident to parturition, will by every means short of sexual abstinence avoid the possibility of another pregnancy, and such pregnancy occurring will still seek to avoid an operation by seeking early abortion. Twenty per cent., undoubtedly including some procured, is too small a percentage to justify the statement that tracheloplasty predisposes to miscarriage.

QUESTION 3.—This proved almost entirely irrelevant, most ex-patients having had but one child. This fact is due to my receiving more answers from recently operated women than from those of more remote date.

QUESTIONS 4, 5 AND 6.—These questions regarding injuries, their nature and the accoucheur can be considered together, as they coincidently led to much investigation. Only 4 patients were aware that they were relacerated; definite negative answers were received in 13 instances; 20 failed to answer the question. The fifth question (if so, how?) was irrelevant. Each accoucheur was addressed through a circular letter. All letters reached their destinations, but only 16 of the physicians took the trouble to furnish me with data. On the other hand, several went to great trouble, even visiting and examining patients for me, and to all who answered I wish to express my thanks.

The questions were:

THE QUESTIONS ASKED OF ACCOUCHEURS.

1. Did the cervix dilate easily?
2. Was the cervix relacerated?

* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Obstetrics and Diseases of Women, and approved for publication by the Executive Committee: Drs. A. Palmer Dudley, H. P. Newman and J. H. Carstens.

3. If a laceration occurred should you estimate it as of the first, second or third degree?

Fourteen of sixteen answers told of easy dilatation of the cervix and in 3 instances it was "very easy." In 2 others no dystocia existed, the cervix behaving like that of a primipara. The cervix was relacerated in 8 cases, not relacerated in 7, and in 1 case the physician did not know. Of the 8 relacerations 5 were slight, 3 were of the third degree and in 1 the degree was not recorded. While these numbers are too small to justify broad deductions they at least show that relaceration can not be justly exploited as a serious contraindication when definite indications for tracheloplasty exist.

QUESTION 7.—Sixty-seven women (67 per cent.) have after the lapse of from two to five years been entirely free from "womb trouble." Nineteen of these have sustained labor or miscarriage without recurrence of symptoms. In 8 cases a subsequent labor or miscarriage determined a recurrence of former symptoms. By extra investigation or personal examination I have ascertained that 12 of the 33 not permanently cured owe their symptoms at present to adnexal lesions, fibroids, etc. There has been no instance of malignancy. In 5 instances the recurrence of pelvic symptoms was due directly to traumatism, and, lastly, in 7 cases I thought it possible that the technic might have been faulty. Thus ruling out the 12 non-cervical and the 5 traumatic cases our percentage of recurrences is reduced to 16. Therefore, in properly selected cases a proper plastic operation is capable of being permanently curative, exclusive of relaceration, in 84 per cent. of the cases.

Another fact brought out is that women past 35 are more permanently benefited than those younger. I consider the reason for this to be the fact that they do less hard work than younger women; their children have outgrown the age of being constantly lifted and carried; they are more temperate in all things, including sexual relations, and they seldom have children after the operation at this age.

Having satisfied myself that a proper operation after proper palliative preparation was curative and justifiable, I turned my attention to its prophylactic influence as regards cervical carcinoma. The literature is meager and contradictory, and afforded me no help.

Not facts but locality regulates the expressed opinion as regards the influence of cervical lacerations in predisposing to cervical carcinoma. American authorities so unanimously agree that local traumatism predisposes to future malignancy that the exceptions but serve to prove the rule. In Europe, especially in England, the statement should be exactly reversed.

Laceration and its sequelæ is, we know, not the sole cause of cervical carcinoma, but as we do not yet know even the nature of the remaining factors, we are greatly handicapped in tracing a relation of cause and effect. I determined to learn whether women having had successful tracheloplastic operations were more exempt from cervical malignancy than other women. To this end and also to learn their views regarding relaceration of the repaired cervix, fifty of our most distinguished gynecologists were addressed. In addition, our resident house surgeon, Dr. Bradley, kindly investigated seventy-eight cervical carcinoma cases treated in the Free Hospital for Women. These two lines of investigation cover an enormous, but obviously unknown, number of cases.

After the most careful search of all available records and literature in not a single instance was a history of a previous tracheloplastic operation found in a car-

cinomatous cervix. Patients contemplating a serious operation on the pelvic organs seldom fail to mention at the very beginning of an anamnesis the fact of a previous operation and few surgeons fail to inquire regarding such. The absence of such history is emphatically significant.

Nearly all specialists addressed responded promptly, a few even writing very instructive letters, and to them all I tender my hearty thanks and appreciation. The following questions were asked:

THE QUESTIONS ASKED OF SPECIALISTS.

1. In what percentage of cases should you estimate that a relaceration of a repaired cervix occurred?

2. What percentage of the total number of cases of cancer of the cervix you have observed should you say had an unrepaired laceration of the cervix?

3. What percentage of the total number of cases of cervical cancer observed by you should you say had undergone previous operations for such lacerations?

The infinite diversity of the answers obtained, defying tabulation, shows that thirty-five years after Emmet's classic paper much need of scientific investigation in this field still exists. The attitude of many of our ablest men also shows that much injury has been done by classing plastic operations as minor surgery. A few admitted the relegation of such cases to their assistants. As a matter of fact, plastic operations require greater technical address than any other. They are less sensational, and to many less interesting than the major operations, but there are many good abdominal surgeons for each good plastic operator.

QUESTION 1.—This elicited answers as follows: Six men express the opinion that no primiparous or repaired cervix ever undergoes the dilatation incident to parturition without at least a slight laceration; the same number state positively that they have never known relaceration to occur after a properly executed operation. Between these extremes are all grades of opinion. Many men of unassailable wisdom and experience answered: "I do not know." Many others stated that they had no data, but that their replies were mere guesses, and, therefore, though fully appreciated, they are useless. From information gathered from all sources, I am convinced that a properly repaired cervix reverts to about the condition of the primiparous cervix as regards laceration. Improper repair may not only predispose to a relaceration worse than the original tear, but like certain unrepaired lacerations, may cause serious dystocia, through containing an excessive amount of cicatricial tissue.

QUESTION 2.—What percentage of cancer cases had unrepaired lacerations? This brought out several replies of: "I do not know." The vast majority estimate them at 75 to 100 per cent. Several obviously confused the question with that of the occurrence of cancer in the nulliparous cervix, and others were stated to be guesses and therefore valueless. Their answers, in connection with my coincident investigation, convince me that at least 90 per cent. of the cases of cervical carcinoma occur in previously lacerated cervixes remaining unrepaired. Laceration is by no means a necessary antecedent, nor must carcinoma necessarily follow laceration. If laceration plays an actual etiologic rôle, it is merely as one of an unknown number of factors.

QUESTION 3.—This question, regarding previous tracheloplasty, achieved the nearest approach to unanimity. Fourteen of the gynecologists declared positively that such operation had not been performed in any case observed by them. Many left the question unanswered

and others, confusing the question with that of cancer in the nulliparous cervix or stating that they were guessing without reliable data, estimated the percentage at from 3 to 25. One man stated definitely that cervical cancer was preceded by a tracheloplasty in 6 cases out of 460.

We all know that carcinoma occurs, whether or not as the result of traumatism, in the nulliparous cervix, and it is inconceivable that any tracheloplastic procedure should render a cervix less susceptible to cancer than one never subject to any traumatism. Therefore, I believe that these answers, in connection with the above-cited results of my investigation of all available cases and literature, at least warrant the conclusion that the properly repaired cervix is no more liable to cancer than the nulliparous cervix, and that tracheloplasty is therefore prophylactic of cervical carcinoma. Granting that the operation is justifiable, when indicated, when should it be done?

There are unquestionably a vast number of cervical lacerations which cause absolutely no symptoms and do no harm and in which operation is, hence, not indicated, except perhaps as concomitant of other plastic vaginal operations. Moreover, although the statement has been challenged, it is a fact that many very considerable lacerations of the cervix heal entirely or nearly so by first intention. It is my firm conviction that the cases which heal primarily are not the result of chance, but heal because kept clean and not too badly bruised. Three cases observed at the out-patient clinic are interesting in this connection. All three showed unmistakable evidence of healed cervical lacerations, all denied a tracheloplasty and all three completed the expulsion of their children before the arrival of their attendants, and no examination was made. These facts would probably never have been elicited but for the enthusiasm of this inquiry.

During the past year I have almost daily been able to demonstrate to my students the scars of more or less perfectly spontaneously healed lacerations. Further, surgeons who also practice obstetrics almost invariably get good results from primary operations on the cervix while general practitioners not surgically trained do not. Why? Because surgeons, as no other accoucheurs, can carry out a thorough aseptic technic. A majority of the cases healed by primary operations would heal spontaneously and I know, as you do, that sepsis, not union, will follow the primary suturing of an unclean cervix.

These facts show that in many instances tracheloplastic operations may never be needed. We know that primarily placed sutures, as Hirst has shown, hang like earrings in the cervix after the subsidence of the edema and so do no good, and these data seem to indicate that the primary operation should be reserved for the control of hemorrhage.

If a primary operation is unnecessary for the above reasons, the same is true of the mediate operation. Moreover, Girvan has shown that traction on the ligamentous supports is more productive of uterine prolapse or retroversion at this time than at any other. While Wilcox has shown that for many days following labor the traction and manipulation incident to tracheloplasty is especially liable to cause embolism, possibly septic, from the placental site. The lochia are also troublesome at this period and mediate repair should be reserved for some special indication.

Having passed the above arbitrary periods definite symptoms certainly traceable to the cervix or local physical evidences should be awaited as an indication for

operation except the patient be anesthetized for other vaginal work.

As regards tracheloplasty for the prophylaxis of carcinoma, a strict adherence to the above indications is all sufficient. Cervical malignancy begins in the cellular element of the cervix, not in the cicatricial tissue unless the cicatrix has caused cellular inclusions, and so long as these cellular elements remain unirritated as the result of the laceration so long the laceration is doing no mischief. Cancer is, so far as we now know, an uncontrolled, erratic cellular overgrowth due to an ultimate unknown cause or causes. I am convinced that it is through the irritation of these cellular elements on the everted, eroded lips, the seat of the so-called ectropion, that laceration predisposes to carcinoma. Hence if this irritation does not exist, the increased liability to cancer does not exist.

As to technic, a pathologic study of sections from the everted and so-called eroded lips of a cervical laceration shows a decided flattening of the superficial structures. The mouths of the glands, while occluded, are also flattened out. The ectropion which might be termed a pseudo-new-growth constitutes a superficial layer over the deeper and less or unaltered structures. The correct operation for trachelorrhaphy should consist not of an indiscriminate chopping out of the angle of the tear and much comparatively sound tissue by scissors, but of a careful and rational excision of pathologic tissue with a sharp scalpel or specially devised knife.

The symptomatic influence of cicatricial tissue in the cervix has been greatly overestimated in some respects and underestimated in others. Aside from exceptional cases long neglected, cicatricial tissue does its greatest harm in limiting subsequent dilatation. Therefore, so that subsequent dilatation may be free, all excisions of material, especially at the angles, should be done with a knife, which leaves far less scar tissue in its wake than does the crushing out of the scissors.

Tracheloplasty, however, embraces a wider field than is covered by Emmet's operation, and includes the various plastic so-called amputations, Schroeder's operation, and such modifications as have been suggested by Newman, Goelet and others.

In the seven cases early referred to as owing subsequent "womb trouble" to possible error in operative technic, they had displacement apparently or possibly, due to too forcible downward traction. All possible plastic operating on the cervix should be done with the patient in Sim's position, thus rendering excessive downward traction unnecessary.

Whenever a repair of the vaginal wall is done at the same sitting, an absorbable suture should be used in the cervix so as to avoid stretching the repaired vagina for the removal of sutures.

CONCLUSIONS.

1. Immediate repair of the cervix is indicated only in exceptional cases aside from the control of hemorrhage.
2. Mediate repair (during continuance of lochia) is contraindicated, except it be in some unusual case.
3. Secondary repair is indicated as soon as symptoms are definitely due to the laceration, such symptoms failing of relief by palliative measures or recurring after apparent palliative cure. Operation should be prompt, not necessarily early.
4. Operations on women past thirty-five give better permanent results than in younger women.

5. Repair of the cervix is indicated as prophylactic of malignancy in a woman approaching the cancer age if the cervix manifests locally evidence of cellular irritation, whether or not causing subjective symptoms.

6. Lacerations in which operation is not indicated should be kept under close observation as the cancer age approaches.

7. Obstetricians are obviously unable to avoid lacerations of the cervix in many cases, but if the above deductions are correct a far more strict asepsis will, by favoring spontaneous primary union of such lacerations, do much toward lessening the number of secondary tracheloplastic operations.

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DISCUSSION.

DR. G. BETTON MASSEY, Philadelphia—This paper represents the methods of investigation that we should apply before forming conclusions. My own conclusions have been necessarily derived from seeing the failures only, and I have seen a great many after late operations. Not being an operator the large number of successes that the Doctor has found in his surgery were not known to me. These failures after the secondary operations were of two kinds: One was failure to remove nervous symptoms. Those cases were very numerous, particularly some years ago when the belief prevailed that all sorts of nervous manifestations in women were due to the existence of a healed scar in the cervix. These healed scars were taken out in many cases, but the patients were not improved. The second class of failures were due to the lack of proper treatment preceding the operative attempts. These patients were really suffering from uterine trouble, but it was a chronic metritis. The scar, which had probably admitted the germs originally, had long ceased to trouble the patient, as was proven by its healing. The subsequent symptoms were due to the enlarged and inflamed uterus, and a failure to cure this before operation probably explains some of the 11 per cent. of cases that were reported as failures. It teaches us that intelligent prior treatment should be exercised in all cases to remove the real seat of suffering, the chronic metritis and endometritis. I conducted a clinic in gynecology for a number of years. Connected with the same hospital were a number of active operators. During the whole time of my clinical work I was anxious to refer as many cases for surgical operation as I could find. Particularly was I looking for laceration cases—cases that in my opinion presented symptoms due to laceration. In the whole time I found but one case that had symptoms due to laceration and not to a metritis. The symptoms were in the nature of miscarriages at a definite period of gestation. The interior of the uterus was normal; there was no leucorrhea, but the uterus was split from the os half way to the fundus. As the patient was anxious to have children I strongly advised an operation. Having absolutely no symptoms from this deep laceration but the miscarriages she failed to take my advice. I want to emphasize the fact that we are looking here at a healed cervix as the cause of symptoms which are either due to the neurasthenic condition of the patient or to an enlarged and inflamed uterus.

DR. RUDOLPH W. HOLMES, Chicago—Every woman who gives birth to a child at or near term has a laceration. One of the most positive diagnostic signs of a previous pregnancy is that the os is no longer circular, but is generally a transverse slit. We must consider that a laceration is physiologic because every woman has it. We can call it pathologic only when a train of symptoms is produced. Women may have a laceration extending to the vaginal vault and it will be physiologic unless pathologic conditions are caused by it. I would like to ask what are the symptoms of a laceration. I have never heard of them and I do not believe that they exist. The symptoms are not those of laceration, but symptoms of the conditions produced by the laceration, such as sepsis or relaxation of the pelvic floor, which commonly accompanies the cervical laceration. From the obstetric standpoint I condemn

the promiscuous repair of lacerations of the cervix. No laceration should be repaired unless there are symptoms of the sequelæ of the laceration and when tentative measures fail. I can not recall one case of obstetrics in which a previous trachelorrhaphy had been done where there were not anomalies in the dilatation. As opening of the os occurred it invariably took place, not from dilatation alone, but with concomitant laceration. The most severe cervical lacerations with the accompanying hemorrhages that I have ever seen in my practice have been in cases where a trachelorrhaphy was done subsequent to a previous labor. Of course, we can predict that a woman who has an immense amount of cicatricial tissue in the torn cervix will have an extension of the laceration in her subsequent labor. Furthermore, in taking up the statement that carcinoma is more frequent in parous women because they have had cervical lacerations, and that the repair of lacerations will serve as a prophylactic measure, seems to me to present a great deal of sophistry; this assertion can only be conclusively demonstrated when a large series of cases of carcinoma are taken, and those who have not had trachelorrhaphies are compared with those who have had the operation. Further, I believe desirable results will be obtained for a working hypothesis if all the non-parous women who die after thirty years of age are compared with the parous in the same period of life; 90 to 95 per cent. of all malignant growths of the cervix are in parous women. Is this far from the percentage of parous women in relation to the non-parous at the time when cancer is prone to occur? Lacerations often heal spontaneously if no infection occurs to retard the reparative process. In some instances it is well-nigh impossible to tell if there had been a laceration because the union is so perfect; that is, there is a mere nicking on one or both sides of the external os; if these cases had been examined immediately after labor a considerable degree of laceration would have been demonstrable. I have verified this statement on a number of occasions, for I always examine the parturient canal after operative labors to ascertain the damages done, and again an examination is made at the end of two months. The reason why lacerations are generally found laterally is not explained alone by the fact that tears almost invariably occur there; tears very frequently are in other quadrants of the cervix; in the latter cases the opposing bladder and rectum act as a sort of splint; in the former this splint action is of no avail, and the movements of the uterus with the respiratory excursions prohibit primary union.

DR. A. M. HAYDEN, Evansville, Ind.—We have lacerations that require repairing, and some that do not. If we have a laceration heal, with an inflamed cicatricial scar, that should come out. Endometritis is often directly due to that, and by removal of the scar the endometritis is cured. If we have a laceration that has healed with no inflammation, no endometritis, then, no matter how deep the laceration, there is no indication for an operation. That patient will bear children as well as if she had no laceration. But we find many cases that have nervous symptoms and pain in the pelvis, and we find a laceration that never healed, with endometritis; then we should operate. The patient promptly gets well; the endometritis subsides without further treatment, and there are no further symptoms. Those cases all require operation. I have had many cases of carcinoma of the cervix and I have yet the first case to see where the carcinoma did not follow a laceration of the cervix.

DR. C. S. BACON, Chicago—The attempt of Dr. Craig to get definite data on this question of operation is to be commended, but I do not believe he has secured enough data to justify his conclusions. In the main I believe that most obstetricians would agree with Dr. Holmes. I will agree with Dr. Craig concerning the immediate repair of a laceration if he will make one addition to his conclusion, viz.: That immediate repair is important when there is a deep laceration extending up into the musculature of the uterus for some distance after a severe obstetric operation. It is well known that rupture of the uterus is much more common in cases where there has been a rather serious injury of that kind, and in those cases there should be a careful restoration by suture.

DR. F. A. DUNSMOOR, Minneapolis—Physicians criticise these operations because they hear stories of trouble from the failures, from the ones who suffer pain. The cured patient does not go to every dispensary and physician she knows and tell him that she was operated on and benefited. The patients who go around to the dispensaries, hospitals, etc., are rounders, who are never satisfied. They always criticise the surgeon because he failed to cure them of all their ills. This is the reason we hear so much about the failure of operations, and so little of the successes. Let us announce the results of the operations in patients who have been cured. Dr. Holmes does not believe that a laceration *per se* is a cause of cancer. I differ with him. I have operated on more than a hundred women for cancer of the uterus and all had borne children. Take into consideration the number of women who bear children and have a laceration, and those who bear children but do not have a laceration, and it is the non-repaired laceration which is productive of cancer. I have never yet had the opportunity to operate on a sterile woman for cancer of the uterus, although others claim they have. This repair operation is prophylactic for many conditions not cancerous. Women with deep lacerations of the cervix are predisposed to prolapse, endometritis and dragging pain associated with rectocele and cystocele, and early repair prevents the sequence. As to the diagnosis of laceration, Dr. Holmes says it can not be made except through the speculum. I differ with him again. I can certainly make a diagnosis much better with the point of my finger than by inspection. Often the eye says it does not look like a pathologic condition, but the tactile sense discovers it. I had an interview with Dr. Emmet about ten years ago, and at that time he reported two troubles. One was his renal colic, and the second was from people who thought they made an Emmet operation, when really they did something far different from his conception of it. He said he was often sorry that he ever described that operation because it had been abused so much. It is the experienced operator to whom we turn for counsel in this matter, and I am sure that all lacerations of sufficient extent to be shown by examination through eye or touch as a possible seat for future disturbance should be repaired at first opportunity.

DR. D. H. CRAIG—Had I trespassed on your time sufficiently to read the remainder of my paper some of the criticisms brought out in the discussion would have been answered. As regards scars in the cervix, there is one important question in the technic of the operation. When the denudation or removal of the diseased tissue is made with scissors you leave behind more scar tissue than necessary. I believe that it is important that we remove this pathologic tissue, not by scissors, but by the knife, whether specially devised or the ordinary scalpel, so that we can have accurate coaptation and leave a minimum amount of scar tissue in the cervix. Remove it as you would any new growth; not by indiscriminate cutting out of healthy tissue through a circular sweep of the scissors. The symptoms of laceration were considered at length in my paper. I consider the symptoms of a laceration of the cervix sufficient justification for an operation when other causes of the symptoms have been ruled out by proper previous treatment. I do not mean that cervices should be indiscriminately operated on, but we should select our cases and also the procedure which must be adapted to the individual case. No one operation will answer for all cases.

The successful physician is usually the man who attends strictly to his own business, and refrains from intruding into the affairs of others; who speaks kindly of his fellow practitioner, whether he deserves it or not; who is studious and observant, and profits by his own and the experience of others; who is full of good cheer, and is competent to give wholesome advice. If all physicians belonged to this school the medical profession would be a mighty power, capable of engineering mighty plans for the good of the people, united and respected, free from unjust criticism, and possessed of more than a "common mind."—*Northwestern Lancet*.

ACUTE GENERAL STAPHYLOCOCCUS INFECTION THROUGH THE PUERPERAL BREAST.*

W. P. MANTON, M.D.

DETROIT.

One of the most important functions devolving on the accoucheur is the management of the nursing breast, a responsibility too often shirked, either from indifference, carelessness or ignorance of the physiologic processes involved—a deviation from which may give rise to great physical suffering and lead to disastrous consequences.

It is now universally conceded that all of the more serious disorders of the functioning mammary gland are the result of microbic invasion, the morbid germs gaining entrance to the lobes and interglandular connective tissue either through the ducts, more rarely, or generally through cracks and abrasions of the nipples and surrounding areolæ. Septic material may readily be conveyed by the hands of the patient or an untidy nurse to the wounded surfaces, while the increased vascularity of the breasts and their augmented lymphatic circulation during the inauguration of the secretory function render these glands peculiarly susceptible to the influence of the *materies morbi*. Moreover, the researches of Honigsmann, Ringel and Kostlin¹ have shown that normal human milk contains both varieties of the staphylococcus, while Escherich maintains that pathogenic germs which have gained entrance to the blood from diseased puerperal organs are excreted by the breasts in the milk—additional evidence as to the necessity for the closest surveillance of the breasts during the whole of the lactational period, and especially during the early stages of beginning glandular activity.

While much may still be said and written regarding cleanliness, asepsis and the general care of the healthy and disordered mammary glands during lactation, it is not my purpose to review these phases of the subject, the sole object of this short paper being to direct attention to a single method of treatment much advocated and in vogue, but which, if misdirected, is capable of producing most serious complications. Take up any of the latest text-books on obstetrics and turn to the chapter on the puerperal breast and you will find that, with one exception (Garrigues), massage is recommended in the treatment of mammary engorgement and beginning mastitis. But nowhere will you find a warning word against the possible dangers which may arise from this practice.

The following case illustrates my meaning:

Mrs. T., primipara, aged 18, white, married and a native of Canada, was delivered at the Woman's Hospital by low forceps after a somewhat tedious labor, March 28, 1902. The male child weighed eight pounds. The placenta was expressed twenty minutes after the delivery of the child, and was of unusual size, weighing two pounds and thirteen ounces. The cord was twenty-four inches long and had varicose vessels. There were no maternal lacerations.

Two days later (30th) the patient complained of sore nipples, but the temperature and pulse remained practically normal. On the evening of the third day the temperature suddenly rose to 102.4 and the pulse to 104. There was no chill and the

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1. The latter found micro-organisms, generally staphylococci, in the milk of 91 per cent. of puerperæ. *Archiv für Gynäkologie*, Bd. liii, 112.