would immediately raise the question of operation—whilst, so far as we know, a true idiopathic eczema need not—it is evident how important it is to collect all available data which may render the recognition of the difference between the two conditions more easy.

The idea that cancer might develop on long-standing eczema has, analogically, much to recommend it. There are well-known authenticated cases of the development of epithelioma in lupus tissue; and the development in cicatrices, and in tissues subject to special causes of irritation—as in the chimney-sweep's cancer, and in cancer of the lower lip in smokers—is well known. All that is wanting to establish a similar fact for eczema is a well-authenticated case; but, common as eczema is, such a case does not seem to have occurred.

In distinguishing, clinically, this malignant dermatitis from eczema, the chief points to be borne in mind are the well defined margin in the former, and the evidence, when the tissue is grasped between the fingers, of infiltration in the papillary layer. An eczema of the areola, that had the thickening and moist redness which have characterised some of the cases of this affection, would be so acute in its nature that the zone of inflammation would pass off gradually into the surrounding skin, would probably become widespread, and would give rise to very active symptoms. The overlapping margin forming a veritable ridge, with a sulcus behind it, which characterised another case, would of itself be sufficient to exclude the diagnosis of eczema. The history of the case may be found useful in establishing the diagnosis. In two cases which have come under my notice, there was clear evidence that the disease began in a position corresponding to the openings of the lactiferous ducts, and remained limited in that position for some time before extending over the surface of the nipple.

This malignant dermatitis has neither the symptoms nor the pathological anatomy of any known skin-disease. It is characterised by destruction of connective tissue, and by a permanence of the destructive influence; for repair of the destroyed elements does not occur. In other words, a destroying agent extends from the mouths of the lactiferous ducts into the surrounding papillary layer. The condition of the breast, in the early stage before a tumour can be felt, requires further investigation. In a case, examined and described by Mr. Butlin, in which the breast was removed (*Medico-Chirurgical Transactions*, vol. 59, page 103) simply on account of the condition of the skin, there "not being at the time of operation any evidence of cancer", the lactiferous ducts were found, "for an inch or more beneath the nipple", completely filled with epithelium. But, from what we know of the slow changes that frequently mark the earlier stages of cancer of the skin (in rodent cancer, for example), there can be little difficulty in accepting it as probable, that cancerous changes are developing in the ducts long before they have given rise to sufficient induration to produce a palpable tumour.

Irreparable destruction of connective tissue of the areola argues, of necessity, in favour of the continued action of a connective tissue poison, if the term may be allowed. Cancerous epithelium—as distinguished from normal epithelium—is such a poison: and the development of malignant papillary dermatitis of the nipple is suggestive of the escape of fluid through the mouths of the ducts, possessing the corrosive qualities which such an epithelium would give it. The hypothesis is confirmed by the subsequent development of palpable cancerous growths in the breast, which are formed by an abnormal development of duct epithelium.

What I believe is most clearly shown, by the preparations and drawings, regarding the nature of the breast tumours, is, that these cases are not cases of ordinary scirrhus or parenchymatous cancer. In all of them the tendency of growth was in round columns, which as they grew larger coalesced into round masses, the tendency to penetrate and infiltrate the interlobular connective tissue being comparatively feeble. In scirrhus or parenchymatous cancer, the terminal vesicles of the acini, after they begin to enlarge, rapidly lose their symmetry, and offshoots pierce the connective tissue in all directions. In the tumours which I have been describing, on the other hand, the tendency was to regular symmetrical growth on the circumference, and occasionally to the formation of cystic cavities, by simultaneous breaking down of the central cells. The tendency was more or less pronounced towards the formation of structures that, in England, it is usual to describe as examples of adenoma. In Case 11, for example, in some parts of the tumour the epithelial growths consisted of parallel columns (seen in section as groups of circles), one of which is illustrated in Fig. 15. A tumour in which the growths were found of this character, and in which, as was the case with some parts of this one, a membrana propria was found enclosing the new epithelial formations, would certainly be considered by many pathologists as "adenoid". The cases described in this paper support the view, that, between duct cancer (fibro-carcinoma cysticum mammae, Waldeyer), of which they are examples, and the mammary growth known

in England as adenoma, the difference is one of degree and not of kind. When an epithelial growth in the mamma takes its origin in the duct epithelium, if the development of columns and tubes is localised and encapsulated by a growth of connective tissue, the ordinary adenoma is produced; if, on the other hand, there is progressive destruction of connective tissue and continued growth, we have a duct cancer as the result. But the stamp of origin in the duct epithelium is always retained; and in some parts of the tumour round-cell masses, with columnar epithelium, will eventually be found, marking the radical distinction between this kind of tumour and scirrhus or parenchymatous cancer.

The evidence regarding the nature of the breast tumours associated with disease of the nipple, which has been brought forward in this paper, should be taken in connection with that given in Mr. Butlin's papers in the *Medico-Chirurgical Transactions* (vol. 59, page 107, and vol. 60, page 153). Setting names aside, and examining the drawings with which Mr. Butlin has elucidated his memoirs, I believe evidence will be found that the tumours he has examined, and those which I have described, belong to the same category. In Figures 8 and 10, plate 6, vol. 59, and Fig. 4, plate 7, vol. 60, I recognise the structure of duct cancer. The appearances figured are similar to those found in my own cases, and are essentially identical with those described by Waldeyer as characteristic of his fibro-carcinoma cysticum mammae. The blocking up of the lactiferous ducts in this affection, by newly-formed epithelium, is clearly described in Mr. Butlin's paper. Further investigation has, however, shown that the cancerous epithelium may break through the wall of the duct into the connective tissue of the nipple; and that the diseased skin has pathological characters irreconcilable with the conception that the affection is eczema.

In the portion of Dr. Thin's paper published in last week's JOURNAL, Fig. 6 was accidentally reversed. It should have been put thus.

Fig. 6.—Showing a transverse section of a lactiferous duct and columns of cancerous epithelium growing in a direction parallel to the long axis of the duct; magnified 22 diameters. *a*. White fibrous tissue of the nipple. *b*. Elastic layer of Henle surrounding the lactiferous duct; *c*. Contour of the duct. *d*. Column of cancerous epithelium cut transversely.

ON THE ETIOLOGY AND TREATMENT OF LACERATIONS OF THE CERVIX UTERI.*

By MONTROSE A. Pallen, M.D., LL.D.,

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HITHERTO no surgeon has given any special attention to the immediate treatment of laceration of the cervix; but quite a number in the United States have made studies in the description of the indications for, and methods of, the operation, for the restoration of a laceration long after the lying-in period. It was my province to first describe the operation, as performed by myself in 1866, when I believed myself to be the pioneer, in a paper entitled *Fissure of the Neck of the Womb*, and published about that time in the *St. Louis Medical and Surgical Journal*. I had been preceded, however, by Dr. Thos. Addis Emmet, the then chief surgeon of the New York State Woman's Hospital, who first performed the restorative operation in 1862, although he did not publish anything until 1869 or 1870, or even later.

An extended study of the plastic surgery of the cervix, vagina, and perinæum, and the performance of very many operations for their restoration after injury from parturition, has given me an experience which warrants somewhat of positive statement. In the Clinic at the University, I have closed at least fifty lacerated cervixes during the past six years, and very many more in private practice, which, added to the total number performed since 1866, gives a very large field from which to draw deductions and rules for operating.

* Concluded from page 766 of last number.

When we peruse the works of those great masters who preceded us—and I mean by “us”, the generation of gynecologists which dates its epoch from the culmination of the fame of that great Scotchman, Sir James V. Simpson—we readily understand the numerous amputations of the cervix by Lisfranc for so-called cancer; the frequent “meltings-down” by Bennet with the potassa fusa; or the actual destruction of the cervix, by Jobert (de Lamballe), in his exhibitions of uterine pyrotechnics at the Hôtel-Dieu. Except for epithelioma proper, or perhaps for some rodent or lupus-like ulceration, we now find other means than mutilation, for the restoration of the integrity of the diseased cervix. We may almost lay it down as an axiom that the so-called ulceration with *fatalis* os never existed, save in the descriptions of our predecessors, who mistook the un-united ragged laceration, with edges covered with hypertrophied papillæ and cicatricial tissue, for a gaping ulcerated mouth of the womb. No wonder so many of the women of the past generation succumbed to the amputating knife, the potassa fusa, and the cautery iron: they were mutilated, and were deprived of the intravaginal cervix uteri. If death did not fortunately relieve them, subsequent pelvic cellulitis, uterine displacements, and general broken-down health attended them through life, because mistaken “authority” had decreed suffering, sterility, and uselessness, when a simple plastic operation, the analogue of that for hare-lip, would have restored them to health, maternity, and happiness.

What are the symptoms of laceration of the cervix? Whenever a patient presents herself, who has borne one or more children, and who complains of leucorrhœa, precordial malaise, or pulsation, neuralgic pains in either iliac fossa, hemicrania, or intercostal neuralgia, menorrhagia in a greater or lesser degree, co-added to the usual reflex symptoms of rectal or vesical disorder, we may safely anticipate cervical lesion. Knowing, as we do, that in the mother, the most frequent of cervical lesions is laceration, we are certainly warranted to suspect such a condition: more particularly if her abdomen be comparatively free from tenderness. To positively reach a diagnosis, both digital and ocular inspections are necessary. One sweep of the finger is sufficient in the skilled diagnostician to detect the breach of tissue, however small or great it may be; and in about 80 per cent. of all cases it is found in the left posterior vaginal fornix, on a line corresponding with the sacro-iliac synchondrosis. All doubt is removed when the patient is placed on her left side, in the semiprone position, with the perineum retracted by a Sims' speculum, and the cervix exposed. After cleansing the surfaces of mucosities, a red irregular rent is seen, generally extending from the tip of the intravaginal structure to the insertion of the vagina; or the entire cervix seems to be lost, nothing remaining but two feat-like projections at the upper end of the vagina, the laceration, in this instance, having equally sundered the anterior from the posterior segment. With a couple of tenacula, the torn edges may be easily approximated, the extent of the lesion indicated, and the cervix re-adapted to its pristine shape and integrity. All cases should be operated upon, however slight the lesion, as the laceration is sure to eventuate in alteration of structure, either in hypertrophy of papillæ, or, by involving some nerve-fibrils in the cicatricial tissue, to beget all manner of neuralgic and neuroses. We may, to all appearances, thoroughly cure the erosion, or the so-called ulceration, with iodine, hot-water injections, and a properly adjusted pessary to prevent vaginal friction; yet, as soon as we desist from treatment, there will be a re-accession of the former symptoms, in consequence of attrition of the edges of the fissure, and maceration from leucorrhœal discharge; and particularly rapid are these returns of trouble, if the patient have retroversion, which certainly exists in about 80 per cent. of all cervical lacerations. After an operation, it is quite rare for the retroversion to persist, as a restoration of the cervix usually re-establishes the normal uterine position, in consequence of rectification of the symmetry of support; and the withdrawal of reflex irritability (by the cure of the erosions, as well as the ablation of cicatricial tissue) does away with the frequent fluxions and congestions to which the womb and its annexes are so liable, pending the existence of the laceration.

As to the proper time to perform the operation, four or five days after the cessation of the menstrual flow should be the chosen period; in fact, all surgical procedures about the female generative tracts should be made at that time, as there is more pelvic vascular quiescence then, than at any other period: the organisms are resting from the labours of the oviposit.

After the operation has been determined upon, a question of some importance arises, as to its earliest practicable performance, or if the patient should undergo a certain amount of preparation. Very excellent authority counsels preparation in regulating the hygiene, hot water douching *per vaginam*, the application of a pessary to lift the uterine cervix from the vaginal walls, etc. This process of training

usually takes from thirty to ninety days, and the benefits accruing are hardly commensurate with the time lost. My experience is, that a reasonable amount of hot water douching, the daily replacement of the displaced uterus* for a fortnight prior to her next succeeding menstruation, accomplishes all that is requisite; and a very much more permanent and rapid gain is obtained after, than before, the performance of the operation. All the hot water, iodine, and pessaries we can use for ninety days will not close up the wound; and the sundering of cervical tissue is the cause of all the other ailments. Temporising is not the method of success—the effect must be eradicated by removing the cause. To make the operation, the patient should be placed on the table, lying in the left lateral semiprone position, with the perineum retracted by a Sims' speculum, or one of its modifications. I prefer my own adaptation, as the assistant can hold it with more facility, and with less fatigue.† The question of anæsthesia is one, simply, of choice upon the part of the patient, as the operation is less painful than any other of its gravity, many women would rather submit to it without ether, as the subsequent nausea is much more trying than the pain. In the Clinic of the University, I frequently perform the operation without the anæsthetic; but I always submit the question to the patient herself, when I think she is sufficiently courageous to undergo the ordeal—otherwise, I administer ether, although I fancy I shall hereafter use the nitrous oxide, as I have done quite often latterly, for operations which do not require more than three-quarters of an hour; in fact, I see no reason why it should not be used for any length of time. The only drawback is in having a sufficiency of gas: this difficulty is overcome in New York by the manufacture of the compressed liquefied nitrous oxide gas, which gives to surgery the complete control of this, the safest of all anæsthetics.

The instruments used for paring the edges of the laceration are scissors, about seven inches in length, of a variety of curves, to be able to squarely cut off the cicatricial and eroded tissues. The length of these scissors is of great importance, as it is proper to make the denudation with the uterus *in situ*: any dragging or pulling downwards of that organ being unskilful, unsurgical, and possibly dangerous by disrupting old adhesions around the uterus, which might light up a cellulitis. Whilst the dissection is being made, the cervix is steadied with a tenaculum, equally as long as, or longer than, the scissors, the point being very hard, and bent at a very acute angle, to avoid slipping. An assistant sponges rapidly and thoroughly, with very small sponges firmly pressed upon the bleeding surfaces. Dr. Emmet describes a tourniquet, by which he controls the bleeding. I find that a very hot douche, just prior to the operation, blanches the tissues sufficiently to modify, if it does not control, the hæmorrhage. As a general thing, the amount of blood lost is very trifling, hardly ever exceeding an ounce. Sometimes, however, we cut very large vessels; and when they are found ramifying in the dense, hard cicatricial tissue, the bleeding goes on until the edges are firmly approximated by the silver wires. If this cicatricial tissue be not all cut away, it may interfere with the healing entirely, or may retract after the process of healing has commenced, to set up a secondary hæmorrhage—three such accidents happening within a period of forty days of each other, in May and June, 1880: the first in the service of Dr. Emmet, at the Woman's Hospital of New York; the third in the same institution, in the service of Dr. Lee; and the second in a private patient of my own, where, on the sixth day after the operation, the nurse, in facilitating an evacuation of the rectum, stretched and reopened the union, which was followed by such profuse bleeding as to endanger the life of the lady in question. The hæmorrhage was only checked after all of the sutures were removed, the uterus emptied of clots, and nine new and deeper wires placed. Fortunately, her life was saved, and the operation succeeded. It is sometimes very difficult to make a smooth dissection, more particularly when the angle of the wound follows a very tortuous and sinuous route upwards towards the uterine body, and under the vaginal duplicature. Should we fail to clean up this angle, the success of the operation is endangered. After the paring is done, we should apply the sutures, which are passed by means of short, straight, well-tempered needles, with trocar or pyramidal points, very sharp and very hard. Sometimes it is more convenient to use a needle shaped like a fish-hook, as it is very difficult to

* By putting the woman in the knee-chest position, the femora at right angles to the pelvis, and the spinal column at an angle of forty-five with the plane of the table, the sternum resting flat, and the perineum retracted sufficiently to permit the vagina to be ballooned with air, whereby the intestines gravitate towards the diaphragm, and the womb rolls upwards and forwards.

† This instrument was devised in 1866, and fully described and figured in the *Transactions of the American Medical Association* for 1867. I find one sold in London to be very similar; and it is alleged to have been gotten up without any knowledge on the part of the makers of anything like it in existence. Whilst I do not allege that my principle has been copied in the construction of the London instrument, I wish to place myself on record as having first devised, described, published, and used this form of speculum long before it was utilised in Great Britain.

pass the straight ones through the upper angle. These needles are rarely an inch in length, and are held in the ordinary Sims' forceps needle-holder, whilst the tissue is steadied with a tenaculum. Most of the American gynaecological surgeons bend the wire on a silk thread, which is placed in the eye of the needle; but for many years I have dispensed with the silk, and place the wire directly in the eye of the needle, which is purposely made larger. Great care should be exercised in passing the needle, lest it snap just at the critical moment. The needle-holder should never grasp the eye, and the needle should be placed at such an angle as to be pushed straight through. I am rather particular about these technical details, as upon their proper manipulation depends the complete success of the procedure. The trocar, or pyramid-pointed needles, penetrate without cutting; and, the body of the needle being larger than the point, somewhat of stretching takes place, and there is less oozing of blood than with any other form of needle. I have used them for fifteen years, and they have never yet disappointed me.

Before the wires are twisted, all clots should be sponged away, and the edges of the wound accurately approximated without strangulation by the sutures, which are to be bent on the flat, curved on the cervical tissue, and cut off about two lines from the wound-line.

For many years, I was in the habit of passing only as many wires as were necessary to bring the raw surfaces accurately together; latterly, I rather multiply the sutures, as the presence of good silver wire does no harm, and a surplus insures success, as well as prevents accident. The patient is kept in bed ten days or so, when the sutures are removed, provided union is perfect; otherwise, they are to be tightened, or some additional ones passed, to remain as long as it may seem proper—ten or twelve days more. During the presence of the sutures, the carbolic or thymolised hot douche should be constantly used.

In the whole range of gynaecology, there is nothing so satisfactory as the successful issue of an operation for the cure of laceration of the cervix. Symptoms of the most rebellious nature succumb to the closure of divided tissue, and reflex phenomena often disappear as the mist before the sun.

The rules I would lay down are, to close the laceration at the time of the accident, just as we do habitually for similar perineal lesion, and, in default of making the immediate restitution, to perform the plastic restorative operation as early as practicable. The stitching of the neck of the womb upon the immediate accident is not only necessary, sometimes, to stop the hæmorrhage, but it occasionally is the sole method left to us to save life; besides, it prevents septicæmic trouble pending the lying-in, and union avoids all subsequent breaking-down in health. When the woman arises from the parturition with a division of the cervix, she will, sooner or later, be subjected to more or less of menorrhagia or metrorrhagia, or she will be the prey to the inconveniences and miseries of bad health, as evidenced by leucorrhœa, neuroses of various manifestations, dyspepsia, frequently sterility, and uterine displacement. The operation for the cure of this condition, whilst it is difficult in performance, is comparatively free from danger; and now that we know there is danger of secondary hæmorrhage, not before anticipated, we can take due precautions to guard against it.

The chief deduction in the study of laceration of the cervix is, that the prophylaxis of skilled obstetrics will do much to diminish its frequency, particularly if, in the management of the pregnant woman, the accoucheur directs special attention to its histological status; and should any condition exist which is liable to impair the progress of a normally rapid labour, the hydrostatic dilator should be used, to open the cervix before there is a possibility of the production of œdema, perivascular effusion, ecchymosis, or tissue-bruising. These preventive measures are not only necessary in the scleremic cervix to save it from rupture, but the benefits to the general condition of the woman are most apparent, by saving her the additional dangers of a tedious and exhaustive labour.

The hiatus yet to be filled in obstetrical and gynaecological literature, is a thorough and complete treatise on the management of the pregnant woman, more particularly with regard to the prophylaxis of accident and disease at parturition, as preventives of subsequent pelvic trouble. The skilled accoucheur must forecast his patient's horoscope of health by common sense, and the dictates of the tenderest humanity.

CENTRES OF VISION IN THE CEREBRAL HEMISPHERES.—Dr. J. C. Dalton (*New York Medical Record*), concludes a paper on this subject thus. 1. Extirpation of the angular convolution causes loss of visual perception on the opposite side. 2. This operation is not followed by any disturbance of the intelligence, attitude, power of locomotion, or general sensibility. 3. It does not interfere with the general sensibility of the retina or conjunctiva, the reaction of the pupil to light, nor with the normal consentaneous movements of winking. Its effects are therefore confined to the exercise of visual sensibility.

CASE OF STRANGULATED CONGENITAL HERNIA IN A CHILD TWO MONTHS OLD: OPERATION: RECOVERY.

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THE following case is interesting, from the extreme youth of the patient, as also the contradictory nature of the symptoms, which rendered the diagnosis more than usually difficult.

On July 2nd, 1880, a child, nine weeks old, was brought to the Royal Dispensary, Richmond Street, Edinburgh, for advice. The mother stated that the child had for ten hours been suffering great pain, which had come on suddenly after a fit of coughing. The pain was increased by pressure on the scrotum, which was swollen to about the size of an egg. The mother stated that the child had had a swelling in that position since its birth, which she could always cause to disappear gradually by continued pressure, and which gave the child no apparent discomfort, though it always filled again slowly when the pressure was removed. It was evident, from her description, that the child had suffered from a congenital hydrocele. Since the appearance of the acute symptoms, the patient had been unable to pass urine; the bowels had been freely moved, and there had been no vomiting; the chief symptoms being the apparently intense pain, and the pinched and exhausted expression of face. With these apparently conflicting symptoms in view, I put the child under the influence of chloroform, in order to make a more careful examination than was otherwise practicable. The right half of the scrotum was tense, shining, and full of fluid. Though the neck of the tumour felt somewhat thickened, I could distinguish nothing that felt like intestine, nor was there the least impulse noticeable on the child crying or coughing. Thinking it just possible that the swollen and painful state of the scrotum might be due to some blow or fall upon the previously existing hydrocele, I inquired of the mother whether the child had sustained any such injury. She assured me that such was not the case. I then concluded that the symptoms were due to a minute strangulated hernia, complicating the hydrocele; though the absence of vomiting, and the particularly free movement of the bowels since the supervention of the acute symptoms, apparently contradicted such a conclusion. Such, however, turned out to be the nature of the case; for, having failed in attempts at taxis, on making an incision over the neck of the tumour, and opening the sac, there escaped about two ounces of dark blood-stained serum, and in the uppermost part of the sac there lay a small knuckle of intestine, not much larger than a pea, and deeply congested. This was easily returned on division of the neck of the sac. Having then gathered up the funicular portion of the sac as tightly as possible round the cord, I put two deep catgut sutures through the sac and the surrounding textures, in such a way as to bind it down to the cord, and lessen as much as possible the liability to return of the hernia. I sewed up the superficial parts of the wound closely, and covered the line of incision with a thick layer of collodion.

The child made an excellent recovery, and has now dispensed with any retentive apparatus, though I recommended one to be worn for the first few months, as the child was suffering from a severe attack of whooping-cough.

In infants, where the antiseptic dressing is unsuitable, the collodion dressing will be found useful in preventing the urine from coming into contact with the wound, and thus preventing the healing process.

CASE OF CROUP TREATED BY PASSING CATHETERS INTO THE TRACHEA BY THE MOUTH.

By J. WILSON PATON, M.D., M.R.C.S., Rockferry.

IN THE BRITISH MEDICAL JOURNAL for July 24th and 31st, 1880, are two papers by Dr. Macewen, on the Value of Tracheal Tubes introduced by the Mouth in (Edema Glottidis, etc. The cases he records are all in adults. I am not aware that this treatment has been used in children; but its simplicity and advantages are so great, that a few notes of a case of croup in which catheters were used may be interesting.

H. J., aged three years and ten months, had measles, the rash appearing on February 15th, 1881. On the disappearance of the rash, a hard cough supervened, which gradually increased in severity till March 1st.

On this date, I found him, at 1.30 A.M., suffering from intense dyspnoea, quite unable to speak, and his lips of a dark livid colour. His cough was constant, brassy, and without expectoration. The respira-