Thesis on
"Laceration of the Cervix Uteri"

by

R. A. J. Fetherson M.B. Ch.B.

Candidate for the degree of Doctor of Medicine

Edinburgh University
This thesis has been written from notes and observations made by myself upon cases attending the Women's Hospital Melbourne, and also upon a few cases in private. Whenever I have quoted from authors the fact has been mentioned at the time.

Melbourne.
March 1888.
Lacerations of the cervix are met with in a variety of conditions.

1. As a small fissure extending through the mucous membrane of the cervical canal and a part of the underlying muscular tissue at the external os. These may be one or many such fissures having no regularity as to position but usually being arranged in a more or less radial manner. This condition being frequently met with where there is also a deeper or more extensive laceration.

2. Lacerations through the mucous and middle coats of the cervix are not uncommon and may be included with the former of slight and the next variety of severe.

3. Single or unilateral lacerations extending through the whole thickness of the vaginal portion of the cervix upwards for a variable distance upwards to the vaginal junction thus obliterating the natural arrangement of a portion of the canal. When a unilateral laceration occurs by far the most frequent position for it to be is in front and slightly to the left side, fully three-fourths of the single lacerations being in this position. After this I find the order of frequency to be as follows: in front, behind and to the left, in front and to the right, behind and to the right, sometimes but rarely in any other position.
In extent they generally go through the whole thickness of the Cervix and upwards for about half to three-fourths of an inch along the Vaginal portion. Though Laceration going to the Vaginal junction are by no means rare.

4. Double Lacerations are usually found in one or other of the oblique diameters of the pelvis. The most frequent position in which double Lacerations occur is in front and slightly to the left on one side and to the right and posteriorly on the other and from my own observations I find that this is the most frequent of all forms of Lacerations. Next in order of frequency comes exactly the reverse to above or a Laceration on the other oblique diameter. Then come Lacerations which are rather rare such as Right + Left, or Anterior + Posterior and irregularly in other places. Their extent varies the left as a rule being the deeper but seldom do either extend more than two-thirds of an inch along the Vaginal portion.

5. Multiple or Sclerot Lacerations may occur in any position but they usually assume a radial character varying in number from three or four up to seven or eight. They divide the Cervix into several irregular pieces thus causing a shallow appearance. Their depth is variable but seldom is their extent as great.
as either of the two preceding varieties.

6. Rare cases are recorded (Thomas Dis. of Women) where during labour a complete ring of cervical tissue was torn off.

Cause

Almost every laceration of the cervix is caused by the fetal head during its descent in labour. Some observers describe lacerations in particular places as being due to special positions of the fetal head but though I have carefully noted the position of the fetal head in a great many cases of both early and advanced labour I have been unable to find any relation existing between the position of the fetal head and the subsequent laceration. Though they usually occur in or near the oblique diameter through which the long diameter of the head passed.

If the circular and longitudinal muscular fibres of the cervix have any relation to the occurrence and frequency of lacerations it is at present not properly explained. Certain conditions are said to favor the occurrence of lacerations but I think that it would be more correct to say that they predispose to extensive laceration. Amongst the most frequent which I have met are precipitate labour
Slow labours especially when the Membrane have been ruptured early. Any form of rigidity or Edema of the Os Uteri, Caeurn of the cervix, Instruments or manual delivery particularly if had recourse to before full dilatation of the Os, deformities of the pelvis usually arising through the interference which they require.

Lacerations may occur after abortion Smellit others stating that they are more frequent seen after criminal abortion but I think that those observers much associate criminal abortion with some dilating instrument otherwise there is no reason why such should be the case.

Frequency

From their frequency Lacerations may be saied to be the usual consequence of short labours. Indeed so great an authority and so keen an observer as Sir J. Y. Simpson has said: That the Remnant of some laceration may be found in an autopsay of every Paris Woman. I have carefully examined a great many women when discharged from the Midwifery wards of this Hospital and was able with very few exceptions even when labours had been premature to detect
in primipara a laceration or fissure
and I failed to meet a multipara
without some trace, though very slight
in a few women.

It is not so much the mere frequency
of a laceration occurring that is of
importance but the frequency with
which it is followed or associated
with a diseased condition.

From observations as regards this point
I have found that from fifty to seventy
per cent of the parous women
presenting themselves for treatment
at The Woman's Hospital Melbourne for
uterine diseases had an easily
detectable laceration and at
least a quarter of these there was
nothing to account for the symptoms
beyond a laceration with in most
cases erosion and so called erosion.

This latter condition may be ascribed
in ten or twelve cent of several hundred
cases examined.

Thus I am led to conclude that
very few cases do occur where the
laceration itself causes any
trouble and perhaps these few
may be attributed to pressure of
or contraction of the cicatrix in
the angles of the laceration upon
the surrounding tissue. This
easily accounting for the neuralgia
and hyperaesthesia of the cervix
occasionally met with.
Termination and Results.

In a great number of cases of convalescence by means of the caesarean wound, and almost all cases of them, is gone by the end of from six to eight weeks. This being the usual course with small tears and fissures. Attendance, cleansing, and antiseptic midwifery being all that are required.

But should the tear be larger and more extensive than in most cases, we have a granulating surface showing the position of the tear, which tends by forming a cicatrix over the formerly raw surface, being particularly well marked in the angles of the wound.

The above may be considered the natural termination and as the most favourable results which we can expect to obtain.

Hemorrhage may occur as a result of laceration either shortly after delivery or at a more remote period of the puerperium. These latter being rare though an occasional case is seen. Rarely do either from cause any anxiety.

The most frequent of all bad results is for the uterine wall to show the granulating process to affect the involution of the uterus, and so cause subinvolution in either part or whole of that organ.

The fact of the cervix being divided must tend to lower its vitality; so
we often see more or less Congestion of the mucous membrane and cervical tissue left after involution is completed. The granulation process may be delicate and adhere subjects thus for some time after the puerperium and is occasionally seen discharging pus which may in turn set up an obstinate vaginal discharge.

Of far greater importance than any of the above but having an extremely uncommon occurrence is hope absorption of some low form of organism which is brought into contact with the exposed surfaces & palpates discharges, dirty instruments &c. This septic infection so much to be dreaded during the puerperium may be set up I have never seen septicemia thus caused but have no doubt that such is its origin in a few cases, whether it be from neglect or otherwise.

As before stated many women have an imperfect involution uteri with some congestion of the cervix usually most marked in its mucous membrane which condition gradually merges into catarrh and extending giveth rise to Chronic Podo-Cervicitis. The lips of the os become thickened and under go more or less Cystic degeneration at the same time hyperplasia of the adjacent connective tissue is going on giving rise to the condition known as "Cervicitis or Uteritis."
Epithelium of the cervix has been attributed by some to the continued irritation of prolonged discharges. I have not been able to trace any cases to this cause. But think that if the conditions necessary for the development of carcinoma be present, they are more likely to be set into activity than those in laceration chests.

Some cases of Amalgma of the cervix are not with and seem to be caused by the contraction and pressure of the os uteri at the angles of the laceration upon minute nerve fibres.

Lacerations of the cervix were stated by Emmett and others to be a considerable bar to conception, but my experience would lead me to quite an opposite view viz that a moderately deep laceration without complications will favour the occurrence of pregnancy. Though undoubtedly they seem to predispose in some women to the occurrence of abortion in the early months of pregnancy. Complications, of course, tend towards sterility but are by no means a complete obstacle.

A great many other conditions are stated to be caused by lacerations of the cervix but I think that prolapse, displacements, metritis, and such conditions should be attributed to the abortion or congestion rather than to the laceration pure and simple.
Symptoms.

The symptoms which are by no means diagnostic may be short assorted as the usual uterine symptoms such as pain low down in the back and very often in the left hypogastric region, sensation of bearing down, troublesome micturition, remalgic pain after work, difficulty or pain on walking, dyspareunia with in some cases sterility, irregularity of menstruation. These symptoms may be and are often entirely absent when a laceration exists without complication and their absence is not in proportion to the amount of accompanying disease which may be present.

Physical Signs.

By a careful vaginal examination no mistake can be made. Digitally the condition of parts and age of the term are usually determined in most cases any existing doubt being set at rest by the use of a speculum. A duck-bill is the best as much care is required when using a tubular speculum for it is likely to cause scarring and so may be misleading.

With the aid of a speculum we see a calculus marking the position of the lacerations and the tips of the os swelled, red, granular, and usually clothed here and there with minute pearly bodies being small corks seen in the hyperplastic tissue.
Diagnosis

Section of the Cervix whether performed during labour or not will excite a simple laceration and 60 of some medico-legal interest. I have seen one case in which a lady performed hysteromy produced five sections through the whole tissue of the cervix and exactly resembled a shell-like laceration when other conditions and the woman's statement left no doubt that she was non-parous.

The other conditions with which a laceration of Cervix when complicated is likely to be mistaken are: Cystic or granular degeneration of Cervix, Simple hyperplasia of the Connective tissue or Mucous Membrane, perhaps also with each Carcinoma.

Treatment.

Dr. Bilton of Chicago and Pellae of New York suggested that lacerations might be stitched at about the same time as a ruptured perineum is done. But I have failed to find any record of the operation having been performed but for obvious reasons such a suggestion may be passed over without comment. Sufficient to say that no surgeon ever taught in a British School would for one moment entertain such an idea as the mere fact of a laceration existing causes quite enough irritation.
without fire or cold entries as an extra source. The difficulty of the operation at such a period and the danger of air entering the thoracic cavity also forbid its performance. As previously stated, caeretations if left alone may heal without any treatment but should this not take place then the wound surface granulates and forms a cicatrix over the former raw surface and will probably thus heal for many years without giving rise to any symptoms whatever. The few cases which are met with causing any inconvenience can usually be treated successfully with cocaine, or cooling pessaries as of lodest of lead, arsenic, belladonna, and the judicious use of gylcomine plugs.

When we have the so-called erosion or ulceration then we must effect in most cases to give relief & arrest the locally applied lead, baryta, acid iron salts, chrome acid, iodine & colostrum and powder of silver being the most generally used. With a gylcomine plug at night of any congestion. Eeals packing the vagina with rose acid and cotton wool is very effective in some cases. The patient should rest as much as possible, take good food, and plenty of fresh air and may wear a pessary to support the
Almonds, internally and externally are often of good service in restoring the general health.

Should the above treatment fail after a fair trial and the symptoms remain there or in a patient with a family history of cancer then we may consider the question of the radical cure of the lesion and with it the complications. There are various ways of bringing about a radical cure and all have for their object the revivifying of the torn edges and then suturing them together. Such an operation is called Dracelo-Raphy having been first described by Smellie. As to the advisability of operating great diversity of opinion exists even amongst the most eminent specialists. Although the operation is easily performed and causes very little pain I have come to the conclusion from watching many cases that it should not be undertaken too lightly.

In the upper classes where the surroundings are good, proper rest and attendance being easily obtained I think that the operation is rarely justifiable. But in poorer women where rest and proper attention are next to impossible or in women with a cancerous family history I think that we meet with some cases where after having given a fair trial to local measures the operation is the correct treatment.
The prognosis as to the operation curing the existing disease is favourable but in many cases the symptoms return after three or four months. The cervix then is usually less.

Women in the child-bearing period of life are likely to become pregnant after the operation. So we not infrequently find patients returning some months after they state that since the operation they have been confined and on examination we find the parts in the same condition as before.

There are two out-patients at this hospital who have been operated upon three times for restoration of a laceration and are at present no better than before the first operation. The danger of life is very small indeed and a few cases are recorded where this operation was followed by death. Two deaths have occurred in this hospital in about five hundred cases the being from suppuration following cellulitis the other from septicaemia. Cellulitis usually slight is sometimes met with after operations and particularly if much traction has been used in drawing down the uteri during the operation.

Having determined that the patient is not pregnant choose if possible a time six or seven days after a
Menstrual period and have the woman prepared as for all other vaginal operations. An anesthetic is usually required to keep the patient quiet through any necessary procedure on account of the pain inflicted. The woman is placed in the supine position on the left side, her hips being brought to the end of the table.

A large Buck’s speculum is introduced and held well back by an assistant. A retractor may be required to keep the anterior vaginal wall out of the way. A careful inspection is now made in order to determine the exact amount of tissue to be removed.

This having been determined, a wire ligature, curette, hook or vulsellum is fixed on one of the lips of the os and with it the uterus is slightly drawn down towards the orifice of the vagina and held there by either an assistant or the operator himself.

In a case of double laceration the operator proceeds to dissect off with a knife or scissors the hyperplastic tissue and with it the mucous membrane from the acceseed surface. This is most easily done by dissecting the mucous membrane 90° off in four pieces, two of equal size from each lip of the os.
Some surgeons leave a narrow strip of mucous membrane down the centre of each lip, so that when the parts are brought together some mucous membrane may be left to form a continuous canal. Others simply dissect off all mucous membrane from both lips. In either case it is well to so deeply incise the angles of the wound and carefully remove all traces of the muscle.

Having finished the dissection and the hemostasis being stopped, the reapproximated edges are well cleaned to remove all clots and loose pieces. The sutures are inserted as follows. Take a strong silver wire on the best material both which large curved needles are threaded. They being inserted about a tenth of an inch from the edge of the wound and passed from without inwards through one and from within outwards through the other lip at opposite points beginning with the highest section. Two or more sutures are thus inserted on one side and held out of the way. Then a sufficient number are placed on the other side in a similar manner being arranged so as to leave an interval of about one-third of an inch between the lowest sutures on either side. The hook is withdraw and sutures twisted together from above.

If all the mucous membrane has been stripped off a small tent of oiled
Silk with a piece of silk cord attached is passed through the two central sutures. The strip of mucous membrane if it has been left performs this function viz. to prevent the two surfaces from uniting completely and to leave no canal. The sutures are now cut leaving the ends of the upper ones rather long to facilitate removal and the uterus rises according to the amount of traction which has been exerted upon it. The speculum having been withdrawn, the patient is placed in bed and kept at rest. The tent is withdrawn in about forty-eight hours and vagina is syringed twice a day with carbolic water. The sutures are withdrawn in from 12 to 14 days, a sound passed, and the patient is soon able to go back. When the Cæciteration is unilateral probably the most satisfactory procedure is to divide the cervix at a point opposite the tear thus making a double cæciteteration or to remove the mucous membrane and revivify the side where the Cæciteration exists.

In multiple Cæciterations it is more difficult but the same plan is followed of dissecting off all diseased tissue and trying to leave when the suturing is to be done as few separate pieces as possible. It is better to remove a small portion altogether.
than to try and bring too many pieces of the cortex into the sutures as they rarely hold them firmly. If time is much difficult the best plan is to use sutures to bring the adjacent portions of the cortex together. The posterior sutures being inserted first and the lateral ones last.