I hereby solemnly and sincerely declare that the accompanying thesis on "Granular Os Uteri" has been composed by me without aid from anyone, excepting quotations from Authorities which are duly acknowledged in the margin. I also declare that all cases and experiences related therein as having occurred in my practice have actually occurred as described.

I further declare that since graduating in Glasgow University as M.B. and C.M. in 1882, I have been engaged in the practice of my profession as locum tenens in Scotland for eight months, and afterwards in General practice in Nathalia, Victoria, Australia for five years, 1883 to 1888, and for eight years in Williamstown (1888 to 1896) Victoria Australia.

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Vid Sydenham, Society's Edition of the Works of Paulus Aegineta: Vol I p.p 624, 625.

51 954: Sect V.

Dr H. Bennets Inflammation of the Uterus p.p. 6 and 7.

Granular Os Uteri

or so called Ulceration of the Os Uteri etc.

Much discussion has taken place as to whether or not a true ulceration of the Cervix Uteri ever exists in life, also as to the importance or otherwise of the condition hitherto described under that name.

As far back as the 7th century we have this affection described as ulceration by Paulus Aegineta, who states that ulceration is to be detected by the "Διοπτρα", and that it should be treated, according to the nature of the ulcer, by emollients and astringents.
It is also mentioned in Hippocrates' Aphorisms.

But for many centuries it seems to have been altogether lost sight of, until Dr H. Bennett revived the subject and brought it into prominence in his work on Inflammation of the Uterus. In this work Dr Bennet states that

Ext Op. Page 6.

Cit: Op: p 36.

Diseases Peculiar to Women - Dr Ashwell 3d ed p 184.

even Sir Charles Clarkes "Treatise on Female Diseases", published as late as 1831 does not mention this disease.
Dr Bennet asserts that "in nearly five cases out of six of uterine disease in which Chronic discharges, mucous, purulent or sanguinolent, or other well marked uterine symptoms are present, there is inflammatory ulceration of the Cervix Uteri."
He further states that so large a proportion as 81 per cent of all women presenting symptoms of uterine ailment are suffering from inflammatory disease of the tissue or Canal of the Cervix Uteri, and 70.4 per cent likewise from ulceration of the Os uteri.
Whilst Dr Ashwell found only 1 ulcerated os in 50, Dr Bennet found in 300 cases of the same class of patients, 243 suffering from inflammatory disease of the cervix or cavity and in 222 of these ulceration was present either as an excoriation or more advanced Granular

loc at f 37.

" f 38

" f 78.

" ff 80, 81.

ulcer. Bennet contended that inflammation of the uterus and ulceration of the neck of the uterus are in the majority of cases the real cause of morbid uterine changes and symptoms. In favour of this view he mentions the vascularity of the cervix, the frequent exposure & danger of injury, and he mentions other organs in the body as examples.

He also affirms that inflammation of the cervical canal is in reality the common affection whereas inflammation of the uterine cavity is fortunately rare.

Briefly summarised, Dr Bennet strongly contends that ulceration of the Cervix Uteri is a disease per se, that it is a common affection requiring cauterization as a rule for its treatment, and that it is the results of inflammation.

He says that the existance of inflammation in the majority of cases is soon followed by the manifestation

p 82

op cit p 139

A Treatise on Gynecology, "Pozzi". Vol 4, p 186
New Sydenham Soc 1892.

of the ulcerative process, and that ulceration generally appears first round the Os, and just within the County of the cervix. From there it extends more or less, especially outwards over the cervix..

He further admits that inflammation of a Granular character may occur, also that real ulceration may be created and take on a Granular form of appearance.

Whilst commenting on the frequent occurrence of the disease in women who have born children, and who have laceration of the Os Uteri, he contends that laceration is not the sole cause of the disease, and in proof thereof he states that not only may inflammation and ulceration of the neck of the womb exist in Nulliparae and the Virgin female, but that it is not at all infrequent.

Pozzi corroborates this experience and in a footnote says "It is certain that laceration greatly favours the occurrence of ulceration, but it is nevertheless, true

Diseases of Women - Dr West. 3d ed p 114.

Op. cit p. 113

too far to say with Bouilly (Gemain med 5th Sept 1888 p 345) that ulceration of the cervix does not exist independent of a laceration caused by parturition. x x x x.

I have myself come across many cases of granular Os uteri in Nulliparae and Virgins which however I will refer to again. Dr West on the other hand, whilst admitting the frequency of the condition known as Ulceration of the Os uteri, regards it per se as of comparatively little importance, and considers that it is rather a coincidence than a cause of the extreme symptoms which it sometimes accompanies and which are really due to some other affection of the Uterus.

In doubting the opinion of Bennet, West argues the points fully, and advances the following reasons.

1. Referring to the supposed greater vascularity of the cervix and consequently its greater liability to inflammation, he says

"De West" op cit p 114.

"Not only does a simple examination of the womb suffice to show that blood is distributed in greater abundance to the body than to the neck of that organ, but a consideration of the relative share of the body and of the neck of the womb in furnishing the menstrual discharge or in the changes which pregnancy and delivery bring with them, must lead inevitably, I think, to the opposite conclusion."

He further emphysises his arguments by referring to the extent to which Cancer of the neck may advance before exhibiting any serious symptoms; also that the cervix may be forcibly dilated, it may be excised, burned with caustic or the actual Cautery, or portion of it may be removed with the knife with an impunity wholly incompatable with the assumption that the part is one endowed with high vitality and delicate sensibility.

2. He also claims that post mortem

evidence, which he tabulates as the result of the examination of 65 Uteri shows, to his mind, that the very frequency with which it is discovered, furnishes a still more cogent reason for regarding it as of comparatively little moment.

Table

Showing the chief results of the examn of 65 Uteri.

Uterus healthy in		36
" diseased "		29
Ulceration of the Os Uteri in		17
" " " " " alone in 11.		
" " " " " with disease of lining of Uterus	3.	
" " " " " with induration of the walls	3	17
Induration of the walls of the Uterus without Ulceration of the Os		5
Disease of the lining of the Os without ulceration		7
Total diseased Uteri in 65		29.

Want argues that this shows the absence of any necessary connection between

ulceration of the Os and those other changes of the Uterine tissue which have been alleged to be dependent on it, and suggests the probability that an affection which was betokened by no marked symptom during life, and is found associated with no important alteration after death, must itself be of no great moment.

3. Referring to Prolapsus Uteri as an example of exposure of the neck to injury, he argues that "from the irritation to which it is "exposed, the neighbourhood of the Os "Uteri becomes almost invariably ulcerated" "x x x Although the relations of the prociduent "womb differ materially from those of "the organ while still in situ, though its sensibilities are unquestionably much blunted by its change in position, yet the General absence of any abundant discharge either from the cavity of the womb or from the canal of its Cervix as well as the other symptoms supposed to

West – Op cit p 115,

characteristic ulceration of the Cervix uteri cannot but raise a presumption unfavourable to the opinion that ulceration of the neck of the womb is the all important affection which it has been assumed to be by some writers."

4. "If, he goes on to say, we grant that between the precedent uterus and the ovum still in situ there are differences sufficient to prevent our applying rigorously to the one conclusions drawn from the other, there is yet another source whence evidence may be deduced to show that the Os and Cervix are less susceptible to disease and that disease has less disposition to increase and to assume a serious character than has been sometimes imagined." He then suggests that prostitutes are more exposed to injury (local), that it would therefore be reasonable to expect this affection would be discovered with remarkable frequency

West – Op cit p116

in prostitutes not only as ulceration but as hypertrophy and induration, especially as the last named condition returns, even under favourable circumstances, extremely slowly to their original size.

His experience is however as follows. "I found some years ago on investigating this subject, that in 27 out of 40 women admitted into the venereal wards of the hospital, that the Os and cervix uteri were quite healthy. In 10 more the only morbid condition was a mere excoriation not above a line in breadth, partially or completely circumscribing the Os uteri, but associated with no other change of its tissues. In the remaining three (3) the ulceration was more extensive, but in one only of these (and she a woman who had given birth to children) were the lips of the Os at all enlarged, while in no instance was there any such alteration of the texture of the part as to deserve the

op cit p 118

name of induration.

5. He further argues that if ulceration were of the great importance which Bennet teaches, it would be certain to tend to certain definite results either in kind, duration or degree of the symptoms according to the presence or otherwise of ulceration of the Os.

Dr West gives a summary of his inquiries into the two classes of cases viz: those in which examination by the speculum discovered the ulcerated condition & he (1) present or (2) absent.

(1st) - Uterine pain, menstrual disorder and leucorrhœal discharges - the symptoms ordinarily attributed to ulceration of the Os uteri - are met with independently of that condition almost as often as in connection with it.

(2nd) These symptoms are observed in both classes of cases with a vastly preponderating frequency at the time of the greatest vigour of the sexual functions,

and no cause has so great a share in their production as the different incidents connected with the active exercise of the reproductive powers. But it does not appear that ulceration of the Os Uteri exerts any special influence either in causing sterility or in inducing abortion.

(3d) While the symptoms are identical in character in the two classes of cases they seem to present a slightly increased degree of intensity in those in which ulceration of the Os uteri exists.

(4th) In as far as could be ascertained by careful examination, four fifths of the cases of either class presented appreciable changes in the condition of the Uterus - such as displacement, enlargement and hardening of its tissues, while frequently several of these conditions co-existed. An indurated and hypertrophied state of the cervix uteri was, however, more frequent in connection with ulceration of the

Os uteri than independantly of that condition.

(5th) The inference, however, to which the last mentioned fact would seem to lead, as to the existence of some necessary relation, such as that of cause and effect, between ulceration of the Os uteri and induration of its cervix, is in great measure negatived by two circumstances, —

(a). That in numerous instances an indurated cervix co-existed with a healthy Os uteri

(b). That while in many of the cases in which induration of the cervix existed, the ulceration of the Os was very slight, induration was entirely absent in others instances where the ulceration was noticed as having been very extensive.

Since then we find a very great degree of resemblance exists between the two classes of cases; that women of the same age,

in similar circumstances, present the same symptoms, leading to the same results, having the same duration and attended with similar structural changes whether ulceration of the os uteri is present or absent, it may fairly be inferred that ulceration of the womb is neither a general cause of uterine disease nor a trustworthy index of its progress; and it follows, I think, as a necessary corollary that the endeavour by local remedies to remove this condition of the os is not the all important object in the treatment of uterine disease which the teaching and the practice of some physicians would lead us to imagine
Next attributes so called cures to not to the local applications but to the rest etc accompanying the local treatment, and he condemns the local application of caustics in most cases, as being detrimental to the patient morally and

physically as well as being unnecessary, painful and dangerous."

Both Bennet and West's views are no doubt extremes. Whilst it is impossible to agree with Bennet's views as to granular Cx being a disease per se from which all the other symptoms originate, it is equally impossible in my opinion to accept of West's conclusion that so called ulceration is merely a coincidence and that it has but little influence one way or the other on the progress of Uterine disease, nor do West's experiences as to induration and thickening being found in the absence of ulceration and vice versa at all disprove, to my mind, the connection between so called ulceration and hypertrophy etc of the cervix, as I have frequently found the so called ulceration especially in the early stages without hypertrophy and induration, and it is a matter of common experience that the hypertrophy and indurations may

in Dict de Med en 30 Vol, art Uterus
Metrite Granuli Paris 1846. — Quoted in
Courty's Practical Treatise on Diseases of
the Uterus, Ovaries and Ovarian Liga-
Translated from 3d ed by A McLaren M.D. - p 623.

Treatise on Gynecology - New Sydenham
Soc. Vol 1, p 181.

remaining after the granular is has disappeared.

Chomel says that Granulations constitute a malady proper of the cervix uteri. He adds, however, that a tendency to similar Granulations is sometimes observed in the mucous membrane of the pharynx and more frequently in men than in women.

I have frequently be struck with the frequency in which a granular condition of the mucous membrane of the throat co-existed with Granular os, but I presume it must have been merely coincidence.

Pozzi states that the cervix uteri, in cases of Metritis, can present special and very different lesions; lacerations, erosions, varicosities, Granulations, infiltrated follicles, erosions, ulcerations, cysts of Ovula Nabothii etc. He evidently looks upon this condition as one which may occur as one of the accompaniments or sequelae of Chronic Metritis.

Acton. Treatise on Diseases of the Urinary Genital Organs - 3d ed p 208.

Manual of Gynecology 3d ed
Page 250.

Acton has also described the condition. He says that the lesion consists of simple ulcers and depends upon Chronic inflammation of surfaces which readily take on the ulcerative process and in which there is but little tendency to heal. Hart & Barbour described it under the heading of Chronic Cervical Catarrh, and call the granular condition outside the os externum Catarrhal patches.

Nomenclature.

In adopting the title Granular Os Uteri I have been influenced by the desire to apply a term which without entering any theory, as to its cause or pathological condition, would yet be fairly descriptive of the appearance of a condition which though it may only be looked upon as a secondary affection, is yet distinct inasmuch as it invariably requires special treatment and may give rise

Thomas' Practical Treatise on
Diseases of Women 5th ed 1880.

is a special and distinct set of symptoms, and in my opinion is attended with special risks of its own.

The term ulceration as formerly used in England, and erosion as used in Germany are undoubtedly wrong as applied to the condition now under discussion. Although a true ulceration may sometimes occur (although this is denied by some), the experiments of Heyl and Veit and others have conclusively proved that Granular Os is not a true ulceration.

Granular & Cystic Degeneration of the Os Uteri as applied by Thomas is also an attempt to describe more particularly the naked eye appearance.

Granular degeneration conveys a false impression as to the exact process by which this condition is brought about. Epithelial Abrasion also conveys a more than doubtful theory.

Ectropion is only applicable to a certain

Rosen, - Das Ectropion am Muttermund (Arch f Heilkunde 1881, Vol 2, p. 97).

Tyler Smith - Trans Roy Med Chir Soc 1852 Vol 35 - p 388.

Pozzi; Treatise on Gynaecology New Syd Soc Vol 1 p 185.

class of cases in which laceration of the Os and eversion of the lips occurred. This term was used by Rosen who followed Tyler Smith's views in looking upon the lesion as a luxation of the internal cervical mucous membrane, a condition similar to that of the eyelids when the conjunctiva is everted or inflamed. Hart and Barbour describe it under the heading of Chronic Cervical Catarrh, Synonyms Cervical Endometritis, Endocervicitis; and they call the special external granular condition Catarrhal Patches.

Pozzi, although using the terms erosion, ulceration etc, describes it as a special condition found during in the Chapter on Metritis.

Pathology.

This granular condition of the Os Uteri was until recent years not only described as Ulceration of the Os, but was believed to be a true ulceration and treated accordingly.

Barnes Clinical History of Medical and Surgical Diseases of Women 1873

pp. 483, 484.

Barnes after quoting Erwin in Holmes's System of Surgery and Macleod (Cooper Surgical Dictionary) as to the definition of ulceration sums up as follows.

"After all it may be said, this is a dispute about words. A condition which so closely corresponds to the classical definition of ulceration, may fairly be called ulceration. This might be conceded were it not that the common, vulgar as well as professional conception of ulceration embraced the idea of a spreading ~~ulcer~~ eroding action and that thus the word bears a more formidable significance to the patient than the reality justifies. Now we all know that the morbid surface is not so affected. There is a bared secreting easily bleeding surface trying to heal. It is often slow to heal. It may take weeks and months to recover its normal investment of epithelium, but during all this time

Article Inflammation - Cooper Bostock

Dictionary ed 1872.

Tyrrell's Treatise on Gynaecology Vol 1, p 184

(New Syd Soc)

Grosselin. On the Symptomatic Value

of Ulceration of the Cervix uteri.

Coach Gaz de med 1843, series 4, Vol 2. p 129.

La Charite Hospital Reports 1879, Vol 3, p 42.

ulceration cannot be said to go on otherwise than in the most languid imperceptible form. But another process is certainly going on. There is exudation. The gorged vessels through which their contents are only imperfectly propelled cause something retained in the tissues. Exudation says Druitt, cannot remain dormant. They rapidly undergo change either in the way of development or degeneration. In this case the tendency is towards development. This means hyperplasia, hypertrophy etc.
Many Gynaecologist, in the opinion of Pozzi, considerably exaggerated the importance of this lesion.
Lisfranc made it the chief symptom of the engorgement of the uterus and in his eyes it was the principle disease
Recamier was the first to emphasize the great importance of this affection and advance the opinion that it was

Melier - Practical Consideration on the Treatment of Diseases of the Womb (Mem de la Acad de med 1833, Vol 2, p 330,)

Quain's Anatomy, Vol II, p 465.

merely a symptom of Uterine Catarrh as already described by Melier.

Bosselin further considered that the so called ulcerations were principally lesions through the enfeeblement caused by the Great secretions, also from experiments made upon the absorption of Iodide of Potass by these lesions, he concluded that mischief was caused by opening the door to deleterious absorption.

In order to explain properly the pathological condition of Granular or a Corneal Catarrh or so called ulceration of the Os uteri, it will be necessary to briefly run over the structure of the mucous membrane lining the normal cervix Uteri.

This cervical mucous membrane contains numerous follicular Glands, which are lined with cylindrical epithelium and which have minute orifices opening on the surface, from which exude a clear alkaline fluid. At the lower part

Fischel. Ein Beitrag zur Histologie der Erosionen der Portio vaginalis uteri (Arch f Gyn 1878, Vol 15, p 76; 1880 Vol 16, p 192; and 1881, Vol 18, p 433) and Die Erosion und das Ectropion.

H. Hlotz. Zymotol (Centr f Gyn 1880, pp. 425, 585. Studien Wien 1879.

of the cervix are vascular papillae. The epithelium of the inside of the cervix as a whole is sphenoidal and ciliated in some parts, but outside of the Os externum, it is squamous.

Fischel describes a congenital ectropion in which a pseudo erosion of the Os uteri is sometimes formed in the child at birth, the cause being that the cylindrical epithelium extends outside of the Os externum to the Vaginal mucous membrane of the cervix, cylindrical epithelium being thus substituted for the normal squamous epithelium.

Klotz corroborates this, and according to him some women have as a result of this early condition, a hereditary tendency to so called erosion and will be affected on the slightest inflammation whilst others will not become so affected even when exposed to much more severe attacks.

It seems to me that this would

Hart & Barbour, 3rd ed, p 281.

Ruge and Veit. Zur Path der Vaginal Portion (Zeitsch f Geb und Gyn 1878, Vol 2, p 415. 1882 Vol 8, p. 405.

account for much of the discrepancies between Bennets and Wests observations.

The old theory of ulceration arose from the naked eye appearance of the os backed up by the microscopical examination of specimens taken from the dead subject, which showed actual loss of tissue. To the naked eye the surface looked red, raw and granular, the first two features supposed to be due to the loss of the epithelium, whilst the granular appearance was supposed to be due to hypertrophied papillae.

Nuge and Veit examined fresh specimens from the living subject and found –

1. That the apparently raw surface is covered with epithelium.
2. That the granular points are new formations and have no connection with the papillae of the mucous membrane.

Their work shows that far from there being a loss of tissue as was

Roser. Das Ectropion am Muttermund (Arch f Heilkunde
1861 Vol 2, p. 97.

Thomas - Diseases of Women 5th ed pp. 336, 337. 342

originally supposed, there is actually a new growth. This new growth resembles in structure, the mucous membrane of the cervical canal and is by some regarded as a mere extension or protrusion of the cervical mucous membrane. Rosen for instance, describes a traumatic ectropion in which laceration of the os by permitting of eversion of the edges, exposes more of the cervical mucous membrane to view; and inflammatory ectropion, which causes a protrusion of the mucous membrane of the cervix. But there can be no doubt that an actual new growth or extension of the glandular mucous membrane of the cervix to the vaginal portion outside of the os external takes place, as in many cases the os would not permit of such an extensive protrusion as is found sometimes outside.

Thomas describing it under the name of Cystic Degeneration of the Os uteri defines it

live cat

as an exuberant growth of the tissues of the cervix; a development of a surface of a granular character in the smooth face of the cervix and just within the Os; also as an inflammation of mucous follicles which resembles those of the cervical canal and which are scattered over the Vaginal face of the cervix and exist even in the Cavity of the womb.

Reye and Veits investigations show that the squamous epithelium which normally covers the external or Vaginal surface of the cervix is replaced by a layer of cylindrical epithelium similar to that formed lining the cervix inside of the Os externum, but the cells are not quite so large. They are narrow and long and are described as being arranged as to give them a palisade like appearance. The layer being very thin, permits of the Capillaries shining through it and thus the pow

* Rupe & Veit _ loc cit

red appearance which was formerly mistaken for a true ulceration, is accounted for. *They further describe the surface as being thrown into folds, causing glandular recesses and processes which give it its Granular appearance. If the processes be long and narrow, the surface is split into papillae, constituting the papillary form. If again these glands become blocked up, they form cysts which may form small prominences and may even make their appearance on the surface and burst, giving rise to the ~~follicular~~ form

As to the origin of the epithelial layer referred to above, Ruge and Veit say it is merely a proliferation of the rete Malpighii whilst the superficial layers of squamous epithelium are shelled off.

Fischell believes it to be an extension of the normal Cervical epithelium and glandular tissue as well as an extension

Fritsch. Erosionen, Ectropium und
Cervical Catarrh.

of the connective tissue, and that if the former be in excess the follicular form exists, if there be excess of the connective tissue, the papillary form is produced. He is also of opinion that the condition which he found in the child at birth is continued in adult life, and that the desquammation of the squamous layer which had formed over it, causes the original condition to reappear.

Fritsch points out that during pregnancy the glands in the cervix are greatly hypertrophied and that this state often persists for sometime afterwards. This increase in the glandular structure is in all probability the principal cause of the extra quantity of discharge which frequently accompanies pregnancy, and it can readily be imagined that a continuation of this condition may in many cases terminate in granular os, the most prominent symptom of which is, as a rule, greatly increased discharge.

To briefly summarize then, the pathological changes which are found in Granular Os affect not only the epithelium of the external or vaginal portion of the cervix, but also there is new formation of the connective or Glandular tissue.

In the normal state of the vaginal or external cervix the mucous membrane is smooth, being covered with several layers of squamous epithelium, supported in small quantities of connective tissue, but no mucous follicles or racemose glands exist. In the condition known as Granular Os, the squamous epithelium gives way to cylindrical epithelium, there is a great increase in the connective tissue and Glandular tissue is formed. The new condition is structurally simply an extension of the cervical mucous membrane found inside of the Os externum. It is a Glandular secreting surface

Döderlin. Ueber die Histogenese der Erosionen der Portio vaginalis - Obst and Gyn Soc of Leipzig, 16 Ap 1888
(Centr f Gyn 1889, No 6 p 95.)

Atthill - Diseases of Women, 7th ed page 174.

and consequently the secretions are greatly increased, debilitating discharges forming in my experience, one of the principal evils of this affection.

Whilst Bennet's theory as to a true inflammatory ulceration may now be looked upon as exploded, Fischel states that occasionally a true ulceration with loss of tissue and inflammatory granulations occurs on the external cervical surface, whilst Döderlein corroborates both this lesion and that described by Rigs and Veit.

Atthill states that he has never seen a single instance of true ulceration of the cervix as defined by him (Dr Farre), unconnected with specific disease and adds that he does not believe that such at any events.

On the whole I am inclined to credit Fischel's theory as to the origin of this new glandular tissue being merely an extension from the

internal cervix. In every case which has come under my observation, the Granular appearance is in direct continuation with the lining of the internal cervix, and its spreading takes a direction outwards from the Os.

I have never come across a case in which there was any interval between the granulations and the external Os, as might be expected occasionally if it were purely a new growth originating in the deepest layers of the rete Malpighii as described by Rüge and Veit. The observations of Fischel already quoted backed up by those of Klotz as to the extension of the cylindrical epithelium into the vaginal portion of the cervix in the newly born child, are also strong points in favour of this theory, as showing that at some part of life the cervical mucous membrane has a tendency to spread outside what at least exist naturally outside of the Os externum.

We have still further evidence in the fact that by far the majority of ~~these~~ cases can be traced to a distinct cause originating either inside of the cervix or body of the uterus. The fact that there is also an undoubted tendency in some women to be affected more readily than others would also seem to me to strengthen the argument, this predisposition, as it might be called, existing in all probability in those cases in which the abnormal extension is formed in infancy. This predisposition in certain women has been sufficiently verified in my own practice to thoroughly convince me as to its reality. In many cases, the slightest interference with the cervix such as passing a sound, introducing a stem in any other form of pessary has been followed by granulations, whilst in others the constant use of an intra uterine stem for months and even years with intervals, and

loc cit

the constant use of pessaries, & attack of
and even severe miscarriages and ^ confinements
with recent marked lacerations have been
unaccompanied by any appearance
whatever of the Granular Os.

That a mere hernial protrusion
of the cervical mucous membrane as
suggested by Tyler Smith and Rose
could be the sole origin of such an
extensive granular surface as is sometimes
seen, seems to me quite out of the
question. In cases of laceration and
eversion, no doubt a great amount
of protrusion does take place, but
in cases where the Os is small and
tight this could only take place to
an extremely limited extent.

Causes.

I have always attempted
and have rarely failed, to trace
Granular Os to some distinct origin.
That it is not a disease per se
must be admitted, but that it is

Courty's Diseases of the Uterus etc 3d ed p 638.

Bennett's Pract Treatise on Inflammat of the Uterus
p 37

D. S. Stewart's Appendix of Uterine Pathology in Indi
p 587.

a most common condition, giving rise to special symptoms, and by its mere presence in many cases causing so much trouble and inconvenience, besides having special risks attendant on it if neglected, - I am fully convinced. Following on or dependant upon some irritation either from inside the uterus, the inner cervix or the vagina, it requires, in most cases, a special treatment apart from the treatment required for the starting point or principal disease.

The frequency of this affection also makes it one of considerable importance. Courty found that in 1563 cases of Uterine disease 425 were cases of so called ulceration of the Os or Granular Os Uteri. Bennet found 222 ulcerations in 300 cases of uterine diseases.

Kent found 17 ulceration in 29 cases of Uterine disease.

D. S. Stewart 15 in 50.

during five years experience in General practice in Nattalia, (Australia), and afterwards in Williamstown (Australia) for eight years during which period I had from 600 to 800 lodge families to attend to I found Granular Os not only very prevalent, but a constant source of complaint amongst female patients

It was by far the most common affection which I was called upon to treat amongst women. During my first eight years I recorded over 200 cases in my case book, and these did not include many of the slighter cases nor cases in which although the presence of the condition was known, for various reasons treatment was declined.

In Williamstown many more cases were met with than in Nattalia on account of the practice being a much larger one, and I found it impossible to keep up the recording of these cases through want of time.

However I believe that I am near the truth when I state that about 50% of Uterine cases which came under my observation for treatment were cases of Granular Os Uteri. The history of many cases of epithelioma of the Os uteri has often raised my suspicions as to Granular Os being sometimes the exciting cause of this disease. Two cases in particular which came under my notice, seem to strongly bear out this theory.

One Mrs I—, Williamstown, aet 26yrs, first came under my observation in 1888. She was then suffering from a well marked ~~[illegible]~~ Granular Os. The symptoms were severe leucorrhœa, pain in the back, frequent headaches, nervousness, and had an anæmic appearance with loss of flesh. Facies uterina well marked. The Os was ~~[illegible]~~ touched, although not hard. Under the local applications of Carbolic Acid

and Iodini Liniment (equal parts) once a
twice a week, with regular douching
with Warm water, Borax and Alum,
and a Quinine, Iron and Arsenic tonic,
the patient improved, and in a few
weeks she left for Sydney, the
Granular condition having disappeared
and as she firmly believed, perfectly
cured. She had gained weight and the
anaemia on faces uterinae had also
disappeared. About 1880 the same
patient came under my observation
again, but this time for a much
more serious state of affairs.
Her history then was, briefly, that
for over 14 months after her previous
course of treatment, she had retained
splendid health and that she then
had a miscarriage, at about the 3d
month, from which time all the
old symptoms had returned.
She was not treated locally, and
as she kept getting worse, she came to

stay with her sister in Williamstown, and again consulted me here. On examination a foul smelling epithelioma was found evidently very fast growing, as the uterus was then fixed, and indeed the patient succumbed in little over a month without any thing having been attempted, except palliation of the offensive condition.

The second case, that of Mrs McD, act 38 yrs, had a similar history, but was not so rapidly fatal. In 1888 she also came under my treatment for Granular Os. In about two months, under a nearly similar treatment to the above, the granular appearance disappeared, and for two years afterwards when I was seeing her at frequent intervals, she kept in excellent health. She then went to a neighbouring town, Footscray, where she shortly afterwards had a miscarriage. Her old symptoms returned and never

kept her for over two years, when she again consulted me. I then diagnosed malignant disease of the Cervix, my diagnosis being afterwards confirmed by Drs Norman and Fotheringham. As the uterus felt free and there had been for sometime previously severe and dangerous, indeed almost constant bleeding, I recommended Kolpo-Hysterectomy, an operation which I afterwards performed on her. However she succumbed on the second day from exhaustion, caused in my opinion by the constant haemorrhage to which she had been subject previously to coming under my care. Microscopic examination confirmed the diagnosis.

I mention these cases, as I believe that they show at least a probable connection between Granular & and malignant disease of the Cervix. Whilst admitting that such cases are far from conclusive, still taken with the fact

Emmet. Principles and Practice of Gynecology, p. 444.

that the history of Malignant disease of the cervix so very frequently resembles the history of these two cases, and more especially when laceration is present, I think that at least in some cases a neglected granular os may be a very probable exciting cause of epithelioma of the cervix uteri.

Although by far the most frequently met with in Women who have born Children, it is not infrequent in ~~some subjects~~ nulliparæ and even in Virgins. Undoubtedly the most common cause is laceration of the cervix during labour. Emmet puts the frequency of laceration of the os down at 50 per cent of all uterine diseases and states that laceration will be found in 32.8 per cent of parous women.

Probably the next most frequent cause is miscarriage. This I believe acts in the first place by retained Products setting up metritis which spreads to the

Thomas. Practical Treatise on Diseases of Women
5th ed, 1880. p 338.

Cervix. This in turn sets up the inflammatory process which leads to the proliferation of the cervical cells and extension of the glandular tissue outside of the Os externum.

The following general causes are laid down by Thomas.

1st Any disorder which keeps the mucous membrane of the cervix constantly bathed with ichorous fluid

2. Anything which keeps up friction against the cervix.

3. Any influence producing and perpetuating congestion of the uterus.

The following are amongst the most common causes which I have met with in the course of my thirteen years practice in Australia.

Predisposing Causes.

1. I am strongly of opinion that some women have a natural predisposition In some cases, as already remarked,

I have found this affection follow the slightest interference with the Cervix whilst in other cases hardly any amount of irritation would produce the same results.

2. Want of Cleanliness I believe, to be a predisposing cause, as I have found that patients who have suffered from more than one attack seem to be remarkably free from subsequent attacks after using the syringe regularly. Writers researches may throw some light on this subject We found that in the female generative tract there is a dangerous Zone, rich in Micro organisms. these organisms he found had become domesticated in the Genital Canal and had lost their virulence. But it is quite feasible that they may again become virulent if subjected to proper conditions such as filth or decomposing organic matter.

3. Climate. I found this condition much more frequent in Nathalia (in proportion to the population), this being one of the hottest parts of Victoria, than in Williamstown, which was a sea port and consequently a much cooler climate. It also seemed to be more common or at least more aggravated in the Summer than in the Winter.

4. Enfeebled General Health.

Exciting Causes

1. Laceration

2. Severe confinements in which the Os and cervix had received prolonged pressure, or in which any of the after birth had been retained. It is also highly probable that want of cleanliness on the part of either the doctor or the nurse may be the starting point of this affection.

3. Miscarriages, in my experience

a very common cause, probably from retention of some of the products of the pregnancy.

4. Marital intercourse, more especially if in excess in a newly married woman. In one case which came under my care (Mrs McL— Nathalia) there were repeated attacks which were readily cured on treatment, but the cause of which remained a mystery until the husband informed me that he had an abnormally large penis and always gave great pain to his wife during connection. In this case abstinence, ~~followed~~ with mild treatment was always followed by a speedy cure, but only to break out again on the renewal of the marital relations. A regular application of strong astringents directly applied to the cervix with abstinence was followed ultimately by a complete cure.

5. Dysmenorrhoea.

6. Displacements, more especially retroflexion of the uterus, producing gaping of a lacerated and passive congestion of the cervix.
7. Masturbation in Virgins I have found a frequent cause. In many cases the habit was admitted and in others I had a strong suspicion amounting almost to certainty.
8. Horse riding – I have come across many cases which seemed to originate from severe exercise on horseback, and which recovered rapidly on mild treatment when the habit was dropped.
9. Gonorrhoea is a most common cause and seems to give rise to a most intractable form of Granular Os.
10. Pessaries, ~~habitual~~ especially the india rubber variety and more so when not changed sufficiently often, and when proper cleanliness is not observed in their use.
11. Endo-metritis or endo cervicitis from

any cause whatever.

Symptoms & Course.

The symptoms are very characteristic.

Pain in the back, loins and sometimes down the legs. There may be also pain on coitus, but sometimes this act is accomplished without any feeling whatever either of pleasure & pain. Many cases of this latter state have come under my notice. The pain is always aggravated with any violent exercise which would influence the Uterus, such as horse riding.

Menstruation is irregular, and there may be frequent attacks of menorhagia.

Abundant Leucorrhoea is one of the most constant and aggravating of the symptoms, and may exhaust the patient very much, leading to tiredness & lassitude.

Nervous symptoms are also common-

e.g. headaches, hysteria, and in one case where a laceration existed, and which I ~~[illegible]~~ afterwards cured by performing ~~[illegible]~~ Emmet's operation; an epileptic fit follow pressure on the lesion.

The discharge is frequently very irritating and may give rise to pruritis. I have seen many cases in Virgins and even in Married women, where masturbation with all its attendant evils, seemed to have been set up purely from the irritating effects of this discharge.

Sterility is also said to be a common result of Granulations, although I have not found this at all a constant result.

Anaemia may be present as a result of the drain on the system from the excessive discharge, and frequently I have observed "facies uterina".

Cardiac symptoms may also be met with, also cough and wasting, which

may be misleading unless the lungs and heart are carefully examined and the mouth suspected if they are found normal. Distressing palpitation and shortness of difficulty of breathing are the most common cardiac indications.

Stomach symptoms are also common, especially indigestion and flatulence with frequent vomiting.

Physical Signs.

In touch in a multipara, the Os feels soft and velvety and little nodules may be felt (Ovula Nabothii, caused by the secretion in the obstructed glands becoming thickened, and retention cysts being formed).

The cervix feels elongated as a rule, but in the early stages this may be absent. In a multipara besides the velvety feel there may be lacerated os, when the Os will be found open, and the finger may be able to feel the folds or ridges in the internal

cervix.

Through the speculum (Sims is the one I invariably use), red patches are seen extending from inside the speech of the womb to outside of the os externum to a variable extent, usually circular but with irregular edges, yet showing a distinct line of demarcation between it and the normal vaginal mucous membrane. A creamy discharge bathes the red patch, and a tenacious plug as a rule will be found blocking up the os and cervix uteri. In multiparae lacerations or scars of old laceration may be seen. The ovula Nabothii appear as bluish red projections

To diagnose from vaginal leucorrhoea observe if the discharge come from the os. Or if this cannot be properly done, plug with a tampon after having carefully mopped up all the discharge and observe the nature of the discharge next morning on the part of the

tampon which was next to the Os.
From endometritis it is hard to
diagnose definately, but information
may be obtained from passing the
sound when the mucous membrane
of the uterus may be felt to be
rough if the cavity enlarged.
The prognosis will depend upon the
cause and complications. Few cases
tend to get well of themselves whilst
local treatment is often followed by highly
satisfactory results. If laceration is
exist, but little hope of a cure can
be entertained until this condition is
rectified by means either of Emmets or
Skroeders operations. I have already
expressed my opinion that a neglected
granular Os may probably be the
exciting cause of malignant disease
just as a continually irritated lesion
on any other part of the body e.g. the
lip may also lead to epithelioma
of that part.

Treatment.

It is not my intention to travel all over the various methods of treatment which have been recommended by different Gynecologist but to describe the methods of treatment which I have found most successful during Thirteen years experience, and methods to which I now almost exclusively confine myself.

For the purpose of describing the different modes of treatment, I have been in the habit of dividing Granular Os into Three distinct Classes.

1st. A Simple Granular Os without hypertrophy and enlargment of the Cervix

2. Granular Os, with hypertrophy and enlargment of the Cervix

3. Granular Os with Laceration. This form is almost invariably accompanied with hypertrophy of the Cervix.

Of course all these forms will be found generally to be dependent upon or at least accompanying some inflammatory condition of the Vagina, Cervix or Uterus, and besides treating the local granular condition of cervical patches as Hart & Barbour call them, the Vaginitis, Metritis & Cervicitis as the case may be, must also be attended to.

Constitutional and general treatment must in the majority of cases accompany local treatment. In the weakly and anaemic, I have found the greatest benefits derived from Iron, Quinine, Nux Vomica & Strychnine and Arsenic. The bowels must be carefully attended to, and for this purpose I have found that the most generally useful aperient is the smallest possible dose which will be effectual of Sulphate of Magnesia or Sulphate of Soda about half an

hour a an hour before breakfast, well diluted w' water, every morning or so. It is seldom that more than ℥j will be required whilst I have frequently found that ℥ss well diluted on an empty stomach, to be perfectly effectual.

In a few cases it may be necessary to give Bromides or other sooothing agents, especially if there be any tendency to disease of the ovaries or tubes. Gentle outdoor exercise, so as to get plenty of fresh air is advisable, but exercise such as horse riding or bicycle riding or anything likely to irritate the uterus must be avoided. Complete absence from sexual intercourse must be insisted on, and I have found this best accomplished by recommending a Change of air. If any displacement exist, a suitable pessary may be worn, but great care must be taken in its selection.

If the abdomen be inclined to the pendant condition, an abdominal bandage may be worn with good results.

In the first class, that of simple prolapsus without hypertrophy, chiefly met with in Virgins and Nulliparæ, the first thing is to remove the cause, which may simply be some bad habit. I invariably commence local treatment by irrigation of the vagina every night and morning for 5 or 10 minutes finishing off with a pint of warm water containing from 3ss to 3ss of equal quantities of Alum and Borax.

If this should prove ineffectual I resort to a stronger application, through a Fergusons Speculum directly to the cervix. Tannic Acid and Glycerine Acid Carbol in equal parts applied by means of Simpsons probe and a little piece of absorbent wool, after having carefully mopped up all discharge

Or a small quantity of a stronger solution of Alum & Borax (3ss to 3ij to the pint) may be poured down the speculum in such a way as to cover the cervix and should be retained there for sometime, the hip meanwhile being elevated by means of a pillow.
I have seldom required to use stronger means for this class of cases, but if the Os be very narrow, as it frequently is, and the above treatment fail, I make a slight bilateral incision of the Os and apply a little tr Ferri Perchlor Fort, continuing the treatment as before, and applying the local astringents further into the cervix.

In the second class, granular Os with hypertrophy, stronger application will usually be required. By far the most successful in my experience has been the frequent application (every two days) of equal quantities of Carbolic Acid and either Iodine liniment or

Tincture as the severity of the case may demand, care being taken to pack the Vagina round the Speculum with wool to prevent the application from trickling on to the Vagina. This I follow up with nightly applications of tampons (wool saturated in Glycerine) which are kept in all night causing a profuse watery discharge and relieving the congestion wonderfully, an injection of Alum and Borax lotion being given night and morning before the application and after the removal of the tampon.

If this treatment be unsuccessful, I have then no hesitation in resorting to Paquelins Cautery, applying it to all the affected surface and even well into the neck. As a rule the Os is very patent in such cases, and there is but little danger in my experience of serious contraction after the Cauterization. I have employed this method of treatment many

times and have had the patients under observation for years afterwards and I have never yet seen any inconvenience result from the scars.

I have also found that this local treatment in many cases seemed to effect a cure of the principal affection probably from the counter irritant action of the local application.

If however, a chronic metritis or cervicitis should prove stubborn then local treatment of the granular Os will be but partly or not at all successful.

It will then be advisable and in many cases ~~partly~~ absolutely necessary to treat the Uterine affection.

For this purpose, it will be frequently found that it is not necessary to dilate the Os, as it is often quite sufficiently patent to admit of the introduction of either a Swab or a curette If dilatation should be necessary I invariably use Hegars Dilaters, with

of course, thoroughly antiseptic precautions.
My experience of tents has been of such an unsatisfactory nature, that I have abandoned the use of them years ago.
For sometime I tried intra uterine injections (medicated) for which I gradually substituted swabbing of the inner surface of the uterus with some such application as Carbolic acid and Iodine in varying strengths, starting with a weak application, and increasing the strength if necessary.
This was usually followed by intra uterine irrigation through a double Channel Canula.
For the last few or six years however I have almost completely superseded this method of treatment by curetting.
If dilatation be necessary, which is not always, I use Hegars Dilators, ~~Ether~~ Anaesthetics being seldom necessary, unless in extremely nervous cases.
I use a sharp curette. I believe this to be preferable to the blunt

one, as it is more effectual and more certain, whilst the force required is not so great, and can be regulated to a nicety. A blunt curette, on the other hand, always requires a considerable amount of force and then it can not be relied upon to remove a growth which may and in many cases is very adherent. After curetting all the soft velvety parts inside the uterus until firm tissue can be felt (easily recognised by the grating sensation), the cervix and vaginal os are also scraped, then a thorough irrigation through the double channel Cannula of a warm solution of Carbolic Acid (1 in 40) until the water comes away clear - being at first colored with the blood and debris. The internal surface is then dried carefully with a piece of absorbent wool on a Simpsons probe, and swabbed out with a carbolic and Iodine mixture.

I then ~~insufflate~~ insufflate the vagina thoroughly with Iodoform (with occasionally a little powdered Bism) Thus I follow up every day at first and every ~~two~~ or three days afterwards with intra uterine irrigations with a mild Bism and Alum lotion, and regular Vaginal injections two or three times daily. It may also be necessary to make an occasional application to the cervix afterwards

Local bleeding with the Lancet I have found of very little use, and I now never resort to it.

The third Class, Granular &c with Laceration is one which almost invariably calls for surgical treatment. Having put the patient on Constitutional treatment, as in post injections, Glycerin Tampons and local applications of Acid Carbol and Iodine, as a rule with merely palliative ~~treatment~~ results, I then invariably recommend

Emmet's Operation. I have performed Schröeders Operation several times, but I have a decided preference for Emmets, as I consider the latter brings about a more natural condition of the Cervix. I have performed Emmets Operation in a large number of Cases with a great amount of success. In only one case have I seen severe contraction of the Os, and in this case Mrs W— of Williamstown was operated upon by Dr Doyle of Hawthorn and the latter died a few days after the operation so that the case was neglected and proper precautions were not taken to keep the Canal open. In this case I had to repeatedly dilate the Os and twice performed Metrotomy before any real relief was experienced, and even then I fear the relief was only temporary. But I think there is little danger of this if care is taken to keep the Os well

patient after the operation.

In one case, that of Mrs M—, Williamstown, who was suffering from a very severe granular os with laceration which practically invalided her for her ordinary duties, I performed Emmet's operation with complete success both as regards the granular os and the laceration. I attended her in confinement within twelve months afterwards, when there was not the slightest reappearance of the old or any new laceration. For years afterwards she was more or less under my observation, and no relapse ever took place. However I must confess that such endutions are healed, are very prone to return especially on the occurrence of a miscarriage or bad confinement.

I have always had the impression that Schröeders operation incurs

an additional risk in the event of subsequent confinements, although I have never had such an experience after this operation and am therefore unable to speak authoritatively on the matter.

In conclusion I may state that having tried nearly all the various modes of treatment recommended by modern authorities, I have found the above methods most generally useful, and on the whole fairly successful. Still there are many cases which no treatment seems to materially benefit.

I find as at least I believe that, since I ~~employed~~ adopted a system of antiseptic midwifery, including antiseptic syringing after confinements, thorough antisepsis of the hands and instruments, and above all catheterism and intra uterine irrigation with antiseptic fluids

after every miscarriage, when the Os is still dilated, and when the Can be easily done without much risk. The occurrence of Granules has become most noticeably less frequent amongst my own patients.

In cases dependent upon disease of the ovaries or Fallopian tubes, which frequently keep up an irritating discharge, nothing short of treatment or removal of these organs will as a rule, effect a cure.

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