A Thesis
on Hypodermic Injection
as regards the Treatment of Certain
Viral and Diseases Functional and Organic.
Although in the active engagements of an extensive country practice there is not much time to elaborate a long thesis, yet during the last eighteen months several points of great interest and practical importance have presented themselves to my notice, more especially in the treatment of viscerai disease, and parts supplied by the sympathetic nervous system, by the hypodermic injection of morphia alone and also in combination with strychnia.

My observations in this paper will chiefly be confined to some cases of excessive sympathetic irritation of the stomach during pregnancy, and a case of ulceration of the stomach which has been under my daily notice during the last eighteen months. In the former cases the benefits received by this mode of treatment have been most marked.

In the first case, a primipara, labour occurred at the natural time, and while the impulsive powers were in full force and labour completed naturally
no sensation of pain was felt by the patient during the whole period of labour. She made a safe and rapid recovery. But the reason why pain was wanting I can not explain, as I knew nothing of a similar case in the last case, (obstructed labour) on two occasions there were great hopes that a cure was being effected, yet by an act of great carelessness on the part of the patient, in making use of undue exertion and strain, the apparently healing process was checked, the palpitations were renewed and sudden and severe attacks of nausea were the consequence.

Case I.

Mrs. W., aged 23 years, first-time pregnant, a Canadian lady, who came to this country soon after her marriage. a tall and muscular woman and one who during the previous period of her life had been accustomed to take plenty of exercise in the way of swimming, rowing on the lakes, and had up to the eighth month of her pregnancy enjoyed tolerable
Health, came under my care. Up to this period, the evening sickness had been nothing unusual, until a few days prior to my being here, when the vomiting had become so constant and excessive as to demand relief, if possible. The anxious face, pain, and distress, the smell and appearance of the expelled matter which was distinctly rancid and made me apprehensive that there was obstruction below rather than sympathetic irritation. There had been a general rule since pregnancy, great difficulty with the bowels. Opium, belladonna were administered, followed after a while by a natural stool, so hardened faces for other appearance. By obstruction. This, in the Charity, Hydrocyanic Acid were prescribed, and in a short time, the patient was relieved and able to take a little walking exercise. This however was only for a few days when perhaps from over fatigue the symptoms returned if anything in greater severity than before.
Had fears that Premature Enfeebled must be induced to give the patient a chance of recovery. At this time the exhaustion was much apprised by the want of sleep. It was then that Morphia sulphate gr. 1/4 was injected under the skin of the left arm. This produced some hours of quiet refreshing sleep, and gave such rest to the stomach as it required, and cut that morbid reflex actions which had apparently endangered life.

From this time up to the period after Confinement the treatment consisted entirely of occasional Premata, and these Hypodermic injections whenever there was any appearance of severe nervous irritability. The labour was a natural one and very easy. Although the imperative force was great and powerful the patient, on repeatedly insinuating the reply, "I have not the slightest pain, only there is some forcing which I cannot help."
Recovery was perfect—I may remark that in this case the pain she suffered from previous to her confinement, was principally referred to the region of the spleen. In making inquiries I found that during her ninth year, she had a slight attack of jaundice, no doubt leaving some enlargement, and the increasing pressure of the uterus upon this enlarged spleen will probably account for the excessive vomiting but not altogether.

The next case to which I will advert I call your attention happened subsequent to the above mentioned one. In the absence of her own medical attendant I was called in to see Mrs. B. at 34 the mother of four children, and in the last month of her pregnancy. She told me that on this occasion she had suffered more than usual from sickness and more especially during the last month. She was much emaciated, and during the last forty-eight hours had taken no food except a little gruel and soda water. She had not had a sight of tea—
for months and the burning had been incessant for several days and had now become slightly stiercutious. Fortunately, the last-jected matter had been secured for my inspection — the lesson I learnt in the first case was deeply impressed on my mind and I immediately in-jected Morphia Sulphatic Ch. 5 at 11.30 p.m. (May here remark that I prefer the Sulphate as being more soluble than either the Acetate or Hydrochlorate — I also find that the addition of 5% HCl to the injecting liquid, produced no irritation in the part injected, but greatly tends to check those profuse night perspirations, not preceded by heat.) — This I had hoped to combat by adding 1 tenth ounce of Atropa Ch. 80 and it had the desired effect but not so marked as when the acid was added. — She passed a com-fortable night and was refreshed, and took some breakfast which she enjoyed, as she had not done for weeks. I then prescribed AquitREEC's ensalage 71/2 to be taken in a little water three times a day and
up to the time of her confinement (ten days after) she was not once sick. She had a
most satisfactory labour and made an
excellent recovery.
I now purpose bringing before you the
case of Alice of the Stomach—would be
true to this case to remark that after all
the usual modes of treatment had been
adopted there was no persistent relief
until the Morbid Chained of Action was bro-
ken by giving rest to the stomach and quiet-
to the Sympathetic Nervous System.
A hypodermic injection does this great
essential very well—
This is shown not only in such cases as the
above but during the unexampled weather
changes of the last twelve months.
When in nearly all cases of illness the
functions of the organic nervous system
have been more than usually depressed
and when ordinary remedies such as the
*Strongyloides* have not afforded temporary
relief, I have noticed and in several cases
just assure that what may be considered
depressing remedies (mainly) Colchicum.
with the Alkalies. Those combined with the Hyposodic Injection of Morphine Sulphate and in some cases with the addition of Atropia 1/2 to 1/8 p. have relieved for a considerable time the distressing feeling of weakness and tinnitus at the Bicordium, and thus affording time and opportunity for administering Kef. Tea, Milk &c. are far more likely to restore the tone of the nervous system than the use of Stimulants. —

I am convinced that the Hyposodic Injection of Morphina does not act as a tonic to this nervous system either directly or indirectly, by giving rest to the organs supplied by them, and thus affording natural time and opportunity to restore any loss. Inappreciable organic lesion; thus Patients almost imperceptibly have recovered health and strength —

Case of Blew of the Stormade

This certainly is an obvious case and was under treatment for eight months previous to coming to me. Although the result of Hyposodic Injection has been to this period
In a certain mental satisfactory, yet there is a necessity for self denial on the part of the patient themselves, which, unless carried out in its entirety, will in a moment break up and destroy those healthy principles. The result of weeks of sedulous care and attention and treatment on the part of the medical attendant and nurse.

The following is the history of the patient as given me by her then medical attendant who gave her into my charge; it is receiving a considerable distance away could not conveniently give that attention the necessity of the case required.

Mrs. H. ät 43 years in the enjoyment of good health up to June 1871, to the birth of four children three of whom died in infancy. In June 1871, the only surviving aged 11 years was seized with an attack of smallpox, and died on the 12th day unexpectedly, as the type of the disease had been held from the commencement and a favourable prognosis had been given. — The effect of this shock was to bring on a violent attack of meningitis.
accompanied by the most severe and
painful paroxysms of vomiting. This
attack lasted from three to four days,
when there occurred an interval of ease or
slight pain, varying from a week to ten days succeeded
by another attack of the same nature. This continued until December, when
she began to have pain after eating and
to vomit undigested food. From this
time up to June last (when blood was
first noticed in the ejected matter) the men
strual periods were very irregular, and
when they did come were almost amount
to flooding. From June to August when
I first saw her, she vomited blood every
day, with few exceptions, and was ex
ceedingly weak and pallid. Nightly she
lost less with pain and discomfort. She
had been treated with vegetable and mi
neral astringents, tonics and sedatives
and her diet most rigidly attended to.
I saw her for the first time on August
2nd, 1872, and was much struck with
her anemic not cachectic look, she
was evidently a Hemorrhagic Diasthene.
In questioning her I found that a prick or cut would cause the blood to flow most profusely that there were Flamonte or Purpuriè spots on the legs and that slight pressure caused ecchymosis the skin was spongy. Bowels were regular, urine plentiful and of low specific gravity. No Albumen present.

On examining the syrinx of the Stomach there was no perceptible enlargement, but a diffused tenderness over its whole extent more especially in the centre. There was also tenderness in the corresponding part of the spine, extending down to the Sacrum. There was no decline of the feet or ankles.

On examining the Gastric matter, it was composed of liquid blood homogeneously mixed with fœtid mucus. There was no admixture of food nor any coffee grounds appearance.

She is of a nervous irritable disposition. In the first place I prescribed clear lemon juice, light, nutritious diet but restricted & liquids as I soon perceived.
that the more solid matters were ejected and passed from the stomach without causing any more uneasiness than the former, in fact that the pain did not arise from the presence of food but of blood in the stomach, and so soon as this was ejected the pain was relieved. This colored juices generally amounted to about two or three ounces in the twenty-four hours. For the first week there was no improvement, but if anything the pain increased in severity, and became so much more severe at night that sleep was out of the question. Therefore decided to try the hypodermic injection of morphia. I injected 0.13 under the vein of the left arm at 11 o'clock. I have not had any occasion to increase the dose since, though I have frequently used it twice a day. The effects were very satisfactory, as sleep was produced and the pain relieved, but still the blood came. Then immediately after the hypodermic injection (the patient being in bed) gave her a draught containing 1/2 pt. of treacle.
in Mucilage, and continued this treat-
ment for several consecutive nights with
the result of staying the vomiting, relieving
the tenderness in the Stomach, and back,
and I had every reason to believe that a
cure might be effected. The food was
eaten with a greater relish and she
was able to take a very fair amount of
exercise (Walking)—the morning however,
the patient sat on a chair to do something
at the windows blinds, and from thence
leaped to the floor, when all the symptoms
recurred in an aggravated form. This
accompanied and returned of symptoms occurred
again under somewhat similar circumstances.
She has now (April) one or two attacks of
vomiting in the twenty-four hours, with
its accompanying pain.—Yet with all
this drain upon the system it is remarkable,
she is not wasted, but is heavier than
she was seven months ago, and looking
tetter, fresher and plumper.—The effects of the
morphia injections has
not only been & of a sedative nature but
has acted as a tone indirectly to the Met
and general circulation — whatever may be the result ultimately in this case.

I feel assured that without this mode of treatment, she could not for so long a period have struggled against her malady. — This is, as I said at the beginning, a confessedly obscure case. It presents symptoms of ulcer and of cancer of the stomach. — Had it been either of those diseases, I should have expected that it would before now have progressed "paxi passus" to its fatal termination — A conviction however has often crossed my mind, that this may be one of those anomalous, peculiar, functional disorders (the result of a great mental shock) I have heard of but never witnessed before. The case does and will thus prove of great interest to me.

The first and second cases are mere especially brought forward, as being marked by the severity of their symptoms. As a proof of their gravity, I may mention that within the last week, a medical friend told me of a case in which he had
been called in consultation, similar to that I, in whole, in his opinion, the only chance to save the patient's life, was to have immediate recourse to the induction of premature labour. This was done; sickness immediately ceased and the patient made a rapid recovery. The child however was sacrificed— I am not prepared to say that both might have been saved, but I do think the probabilities would have been in their favour, if had they means, I need, been adopted. — I generally resort to it in all cases where inducing sickness becomes more than usually distressing, and, with but few exceptions, it has not failed to give relief —

It is evident from the above cases that we possess in hypodermic injection a most valuable remedy, not only in sympathetic functional derangements but likewise in lesions of the viscera. In the first and third cases opium could not be tolerated in any form, where administered internally. It increased
The Disease, checked the action of the bowels, and caused severe headache. Symptoms about under the Hypodermic Treatment: I have seen it relieve almost instantaneously. The lingering pain of Erysipelas was settled, when Opium and Caffeine, combined with Capsicum, the late Sir J. F. Simpson's favorite remedy, had failed to produce the slightest relief. I have also seen it at most beneficially in curing threatened abortion. This is however one for which must present itself to our notice. That is, inducing a morphia habit to even Morphia in no exception to the rule that every man has its abuse. This is strongly enforced in a case which has lately come under my notice though I was not attending professionally. The Rev. H. G. has for many years suffered from acute Rheumatism and become almost crippled with the pain. Some months ago his Medical Adviser tried to give relief by the Hypodermic injection of Morphia Sulphate fr. \( \frac{1}{3} \).
This produced such rest and freedom from pain, as he had not experienced for years, and he recovered so far that he was enabled to resume his usual duties. But, being unable to inject the morphia himself, he had his dread of the old agonizing pain returning. That whenever he felt the slightest approach of it, he at once injected the morphia, until the craving for it became such that he was never in a natural state, and his medical advice was at length obliged to forbid its use.

This case does not detract from what I have said previously of the great benefit the discovery of Hydromorphone Injection has been in allaying suffering, and saving the best-regulated in many cases, but it shows that medical men should not leave the injection mentioned in this paper to the discretion of their patients lest the dread of pain should cause them to abuse it. I have myself frequently been asked by patients to teach them how to use the Hydromorphone injection, but I have made a point of always advising, considering it unwise to take the responsibility of this misuse.
I am so firmly impressed with the advantages derived from this mode of treatment, that I am instituting a series of experiments on the action of several of the alkaloids, such as Theobromine, Caffeine, Atropa, Psophium, &c., treated hypodermically on the lower animals, as their value as Remedial Agents, and likewise as Antidotes & Poison, which on some future occasion I hope to make public. But much time and patience is required in watching the effects of these experiments in order that the arguments deduced from them may be accurate.

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