Vomiting of Pregnancy
its etiology and treatment
Thesis for M.B.

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The first symptoms of pregnancy, and only. Second in importance to the cessation of the menses in the earlier months, is the nausea, retching, or vomiting which sooner or later follows on conception in the human subject. There is no record so far as I have been able to find of any allied symptoms in animals, veterinary surgeons and farmers relying upon the increase in size, manipulative, and auscultatory, as signs of pregnancy.

It is known as the name of morning sickness an unfortunate and meaningless term as retching and sickness are common enough in drunkenness (vomiting drunkenness), jaundice, catarrh, fevers, malaria, infections of the uterus, and appendicitis, amenorrhea, dysmenorrhea, and the regular period of menstruation about the climacteric, and according to some authors, is prevalent in carcinoma also, and a further cause of frustration, returning the habit once the vomiting of pregnancy takes place in the early hours of the day, as a rule, commencing when the stomach is empty, is an undoubted fact, and patients have complained that when they awoke at the normal or first feeling out of bed, the retching and nausea immediately set in. But sickness in the morning taken as a single symptom is apt to be misleading as a legal or careless observer. Although much common in the morning, the sickness accompanies...
Pregnancy may come on at any time, in part of the day and either before or after meals. From the two inquiries, in the majority of cases, the first indication of nausea and sickness occurs at periods varying from a week to ten days after the first detected menstrual flow has been missed after conception has taken place, and generally lasting with different degrees of intensity during the first twelve to sixteen weeks of gestation. In some cases it may come on shortly after conception and last the whole time of pregnancy, or may be confined to the last three months, but the first and last months are usually free from either nausea or sickness.

The assertion of some authors that vomiting is more frequent and persistent in primiparae than in those who have borne children does not accord with my experience. I can only think that in first pregnancies more notice is taken of that fact, whilst in later ones it is looked upon more as a matter of course.

I have found, however, that three women who suffer from wave sickness are rarely or never troubled.

Various influences have been attributed to the coming of pregnancy with regard to the after progress of gestation with reference to both mother and child. By friends it is often considered a favorable sign and Scrope even says a woman ought to have patience and not try to do to a malediction which will have a natural termination.
The absence of nausea and vomiting is the
presumption that there is something
wrong and intervention is necessary. If
nausea and vomiting are present during
early pregnancy and suddenly
cease, the death of the embryo may be safely
predicted followed sooner or later by
death. Having considered that nausea and vomiting
are not only common but usual symptoms of
pregnancy should it into one or two classes
under the following definition. In 188
If nausea accompanied or not by sickness
or vomiting occurring during the period of
gestation and not due to other cause then
we will subdivide this definition into five classes.
Firstly, where the nausea or sickness is
merely an unpleasant feeling with
the sense of nausea, occurring usually
in the forenoon, rarely ending in vomiting and
generally passing away before or when
sickness takes place without having any ill effects.
Secondly, where vomiting as well as nausea
is of frequent occurrence, not confined to
any period of the day or duration of pregnancy
and resulting in considerable failure of
the general health.
Thirdly, where vomiting is so constant and
persistent that all foode as well as drink
are rejected; inability to keep any but the
remittent portion; rapid emaciation and
debility; incipient wth fetal disturbance,
fatigue, delirium, and threatened death.
Fourthly, where vomiting is present but from
The incidence of organic disease it is difficult or impossible to say what some practitioners in producing a dangerous or fatal result. In considering the pathology of this formidable complication of pregnancy, it must not be forgotten that a profound change takes place in the pregnant woman. Her central nervous system is so modified that the intellectual functions may be quickened or the reverse in each a complete change in character and disposition is not infrequent. Mental craving and unnatural desires are the outcome of this temporary functional disorder. The sympathetic nerves are especially prone to disturbance and extremely irritable.

Amongst gynecologists and obstetricians there has always been a strong inclination to attribute this symptom to a renal origin apart from any pathological process. Here is said to exist a pseudo-metabolic tendency accompanied by a disorder of the appetite, which leads to nausea and vomiting and which once established is difficult to alter. Hypertrophy of the left ventricle of the heart is an accompaniment of pregnancy and a natural sequence of the changes and alteration in the blood. Numerous analyses of menstruated observers have placed beyond doubt the fact that there is a considerable deficiency of albumen and that the red corpuscles of the blood are appreciable diminished from ten to thirty per cent, while the white corpuscles are increased as well as
The pelvis thus accounting for the bipedal terminate. In children where a similar diminution of blood corpuscles also takes place there is only occasional ranaea with no reference to any horizontal or erect position.

A review of the well-reasoned anatomy of the female pelvis and pelvic organs may not be out of place and may give some insight into the changes and alterations which they undergo after conception.

The pelvis is the massive bone joint interposed between the lower end of the spinal column, which it supports, and the three extremities on which it supports. It is spoken of as true and false and is composed of four bones, the ischium innominate or boundaries on each side and the sacrum and coccyx behind.

The linea albuginea is the bounding line between the false and true pelvis.

The true pelvis then is all that part of the pelvic cavity situated beneath the linea albuginea. It is smaller than the false pelvis but its walls are more perfect. The bones of the pelvis are united by ligaments, of which the greater and lesser sacro-iliac are the most important. As connecting in closing the outlet. The muscles in the pelvis are posteriorly the pyriformis and coccygeus laterally the levator ani. The last two form the pelvic diaphragm.

The bladder is situated anteriorly and when empty is entirely a false pouch the rectum posteriorly and the uterus in the middle with no manner shooting out laterally.
The vessels are connected and more or less fused by the pelvic fascia and peritoneum between the peritoneum and pelvic fascia and between the portions of peritoneum doubled on itself. There is a varying quantity of areolar tissue. It is in this tissue and beneath the peritoneum (areolar ligaments) that the vessels and nerves, medullated and non-medullated course before being distributed to their respective destinations.

The arterial supply of the pelvic organs and the muscles vessels contained in the cavity are derived from the abdominal aorta through the ovarian arteries and the sacral arteries. The internal iliac arteries anterior and posterior divisions give off numerous vessels most important of which is internal pudic and the greater length of the internal artery is pelvic

The being accompanying the arteries but are much larger in Calibre (more like sinuses in pregnancy) and form numerous pleurises, and the extensive bengs of the vagina empty themselves into the internal iliac vein.

A rich system of lymphatics escapes into veins with the pelvic areolar tissue.

The large cords of the sacral pleurae occupy the front of the sacrum in the pelvic cavity and give of at least three branches to the pelvic pleurae of the sympathetic, which are derived from the medially placed inferior hypogastric pleura before being distributed to the pelvic organs more especially to the
posterior surface and sides of the uterus, and the anterior surface of the rectum, and it is not improbable as suggested by Stone that special nerve fibres supply the body and cervix of the uterus. Almquist has given a very full and correct account of the nerves and their connections which arise from the hypogastric plexus and their association with other plexuses of the sympathetic.

From the preceding it is abundantly evident that the pelvic cavity in a normal condition is incapable of receiving any further addition to its contents or any palpable increase in contact if its contained organs without severely interfering with the normal circulation and without a normal condition there is always a need increase in the activity of the ovary. To put a mere factual conclusion that the increase of the ovary is a necessity. Then inception takes place where added to this the preparation of the endometrium for the reception of the ovum, the increase of weight and size of the uterus which can be ascertained by examination and palpation, the sensitiveness and tenderness of back, and the intense hyperaemia observable even in the walls of the mucous membrane of vagina. According to Weir, an active process of from 0 to 9½ or in its arteries, veins, and capillaries with hormones and rapid increase is the muscular end supporting framework of connective tissue arising from the uterus distributed to the uterus through the fibres of the general developmental activity.
As long as the impacted uterus remains a pelvic organ its increase in size associated materially by a half filled bladder and a rectum distended with hardened feces interferes with the circulation in the vessels which becomes more and more impaired and greater pressure is exercised on the uterus until the stimulation ends in the reflex act of vomiting.

It is easy to understand in these conditions to assumeidity, at first, the rectal rectum then uterus a partial accumulation of the rapid enlargement, and when the upper half portion is again assumed a more acute hepatic condition results in the reflex stimulation and reflex vomiting. The weight of the intestines must also be reckoned as a factor.

Stauder nearly gives some interesting cases to prove that reflex action more specifically produces this symptom and concludes that in all cases reflex is the cause of the beginning of the vomiting. From any point of view the cases he cites simply prove that all reflexes are reflexes of the uterus, whether the normal or acute hypertrophy due to pregnancy, and so to irritations of the hypertrophied uterus; the adenoma; the direction of the fibroid; the pressure or impaction of the uterus; in unsuccessful cases for to prove the reflex theory of the vomiting and its etiological and pathologica! theory. He never asked why the nausea and vomiting but occur during the development of the tenderness of the uterus. There is no clear amount of blood relating to the size of uterus.
and to increase in the size of the uterus, the frequent hemorrhages besides relieving the tension, and permitting accommodation to increasing growth. There is a great analogy in the acute affection of the pelvic cavity, such as pelvic peritonitis and pelvic cellulitis, vomiting in the latter being practically a measure of the severity of the attack. Pain in pelvic haematocoele is not a disease, but the result of a pathological condition, the vomiting is a marked feature, and in malignant diseases of the uterus and appendages it is not a constant, although symptomatic, it is more frequent than not. In appendicitis due to fibrosis of the Cervical Canal, a similar pelvi-cellulitis is equal to, or equal in inflammatory conditions, it is a question whether the accompanying vomiting is any more distressing to the woman than the disease.

The above statement of Dr. J. E. Bowditch, and which has been repeatedly remarked upon by the Comparative Absence of the Symptoms in the Lower Classes of Society, and its more frequent appearance in the Educated and refined, is explained that smaller uterine deformations, and a more sensitive nervous organization are more often found in those growing in the so-called upper stratum of society. The following is an illustration. A. B. was born a lady of education and culture age thirty-six years and in the enjoyment of excellent health, since the birth of her last child eighteen months ago, with the same Mason...
Some temporary menstrual irregularities caused by family troubles. When fourteen years old she first menstruated each month being accompanied by a feeling of dizziness, and frequent appearing at intervals. When seventeen these troubles disappeared and she kept well until the age of twenty-one. Then she had severe lumbago, muscular pains, and became weakly. This condition continued more or less for three years. At the age of twenty-five she commenced to feel come on in the morning accompanied by a sensation of being warm, when getting out of bed. She had suffered from an irritation ever since she can remember. From the time after a long walk, working, or going up stairs she felt a severe starting pain in her abdomen and was three months in bed. Venus was then slightly feverish, the pores becoming tender and some pelvic cellulitis was apparent. Recovery was considered complete, so that at the age of twenty-seven marriage was permitted five years after. At her second pregnancy of a severe type accompanied by Enceinte Distention commenced and lasted ten months. Although nausea and occasional vomiting continued she felt pretty well until the last six or seven days before the expected time. Labor began the result and an eight month fetus survived three days. She soon became pregnant again.
And vomiting strongly itself about fourteen days after the first missed period. She then stopped on being warned out of a convenience but abortion occurred one week after at three months.

Some six months after the cured again she came on at exactly same period but the intensity decreased at once. She was in bed five weeks, Salvinia was persistent

According to the precept of the

As soon as she felt very strong and took

Sucrean pain came on and she passed with a well-formed after six months.

A little over twelve months passed when

She again conceived the pains and

Pamela commenced almost at the same time as the former pregnancy. She was not worse in quickening at being

Very frequent was attributed to the two

From this instrumental labour at term

Child alive before while she could not be determined.

A month or two elapsed before she usual

Strength was regained and after twelve

She was again pregnant nausea and vomiting appearing at the usual

Time being accompanied with hypochondriac

Gastroenteritis. Salvinia failed and she passed with

Salvinia. She was entirely dispelled when the uterine fire out of the pelvis

And excellent health was restored until

The eighth month when premature labour

Supervened.
After another twelve months of total
health once more took place and
practically all the same as before.

The sickness and vomiting came on
Salvation, then the breast and swaddled
but 90 delirium merly a cry of interest in
all the surrounding and frequently
for answers only a vacant stare.

Vomiting ceased suddenly again on
the uterus tissue out of the pelvis and
health was restored. And the fifth
month had a second attack of feverish
accompanied by a considerable diminution
of the volume of the uterus so that she thought
child was dead. The uterus had descended
higher towards the pelvic cavity. The horizontal
features became pronounced. The cramps, symptoms
and panting proceeded to full term
This lady with the exception of what has
been stated above is in perfect health.

The only discoverable abnormal feature
being a larger uterus than normal with
one or two

The melancholy classes also suffer.
C. B. a forty-year-old wife of an
workman in a large factory of rather
masculine type and physique. She had
enjoyed for health till the appearance
of an acute attack of phthisis. For
some years ago, she had ten children
and all died in a drouth two years ago all
epidemic. When three months advanced
she lost pregnancy. The sight of nine
sickness became so frequent that she was compelled to seek medical advice. I found her suffering from something of an irregular type but more frequent and persistent in the rectum. She had been subject to slight profuse and the uterus was low down and wedged in the pelvis but could be elevated without difficulty. Slight jaundice appeared but under treatment sickness diminished. In consequence with place a little over five months when all sickness ceased. Ten days after she felt sufficiently well to get up but in trying to do so respiration became difficult and set in and she died in thirty-six hours. The diagnosis was aplasia of the artery could not procure a post mortem. Another case C. 4th wife of a clerk was admitted into the Blackford and East Lancashire Infirmary on January 14th, in apparently a dying condition. No definite history could be procured beyond the fact that she had suffered from sickness and that she was four and a half months advanced in pregnancy. The vomiting was slightly subcordeous and she had a small femoral hernia the duration of which was unknown. Under an anaesthetic - ether - she slightly revived and while marming the tumour without any attempt at tamis the hernia returned with relief of the vomiting. However, after a few hours,
At the post-mortem a gangrenous patch of intestine an inch long was found to have penetrated and there was local extravasation. This is a case demonstrating how carefully the cause of vomiting in pregnancy should be investigated.

Treatment. In those cases where there is no appearance of the general health being affected and where the sickness passes quickly on the day goes on beyond a saline purgative no treatment is required. When however signs of malnutrition begin to show themselves, the patient should be immediately ordered to bed. The room should be large and well ventilated and a cheerful and pleasant atmosphere maintained. Professional nursing should be insisted upon, and friends under the circumstances are not to be relied upon; they are too officious, sympathetic or foolishly ignorant. A thorough vaginal examination should be made and if any malposition of the uterus exist it should be at once rectified. All changes should be effected in the horizontal position and a bed pan used invariably. The bowels should be kept free by the regular and careful administration of enemata and as soon as practicable the rectum should be prepared by enemas of aperient enemata for rectal alimentation and perhaps medication.
It is also necessary to be quite sure that the bladder is regularly and not simply emptied. Ice water or small lumps of ice are always grateful if swallowed with refreshment. Although ice cubes are refreshing, they irritate the stomach in extreme cases worse than useless, but a mixture of hot water with hot water is sometimes of service, and preferable to Chapman's Ice Bag, to the Fine. Brandy essence of beef in the jelly form and ice cold down easily, and is readily absorbed if retained a short time. One teaspoonful of soda, beef, in two ounces of pure water relieves thirst and acidity of some occasionally. To enumerate the number of drugs employed to combat sickness would take up too much space so shall only mention those I have found of service. When the medicine in my opinion heats the last, the stomach tolerates it when everything else rejected. It is pleasant to take in pure water and does not lead to dephosphation, or more accurately, interference with the action of the bowels than any other sedative. Soda salinelake in fifteen grain doses preferred to salt advocated by McCall. Colonel ni two grained doses occasionally has a good effect, more especially where there is an averse tendency for confirmed jaundice. Have tried Saltpine but would
prefer a father trial. Though it seemed to do good. The case of cedrum, influm, and fischerum promote enjoy a reputation but if the promise is not act quickly. It is no use persevering in its administration (Linnson).

It is clear that whatever drug is given should be in small bulk and as little nauseous as possible. Hypodermically have tried morphine and hyoscine but have been somewhat disappointed in both. They relieve the ordinary sickness but their effect on the principal pains is most unsatisfactory. Morphine suppositories have proved more efficacious. Application to the internal os uteri and cervical canal of nitrate of silver solution and calomel of tea in have been advocated. German's diluted solution of the nitrate of silver solution and internal os should be tried before the more serious operation of inducing abortion. Hardy Hewitt readily accounts for it doing good by the manipulation in performing the operation necessary. Fighting a malposition of the uterus it would seem that manipulation stretches the nerves supply up the cervical canal and lower segments of the uterus in the area of the so-called Bandl's ring and give relief as stretching the sciatic nerve in sciatica or stretching in a surgical manner any irritable nerve (Mackburner who mentions...
to Grazioli Hewett's theory, but remarks that suction causes a greater descent of the uterus into the pelvis cavity. Packs the vagina with Anisopinae gauge, dusted with lidoform and 

With this he gets most satisfactory results. The induction of abortion must be considered in those cases that come under the third and fourth division of my definition. In the first place, I should like to say that the responsibility of such an operation should be borne by more than one 

pair of shoulders: in the second that each case should be considered on its own merits and the patient should not be prevented having the benefit of an operation in the hope that the 

symptoms may suddenly subside as it sometimes does. When least suspected. Case 9. A twenty-six-year-old educated lady, particularly strong and healthy, and who prided herself in being particularly free from the ordinary woman's ailments. She had had one previous pregnancy, attended by vomiting of a troublesome nature, but in no way 

giving cause for alarm and which disappeared at the fourth month; delivery followed at term of a healthy living child. The second pregnancy had advanced ten weeks when persistent vomiting came on with rapid evacuation 

moosumie, slighticteric test and dry tongue. All food was rejected even cold water and ice and apparently in larger.
quantity than that taken. In the commencement of the sickness, rectal alimentation had been quite neglected, and when at length resorted to was not tolerated, so that the perforation was very intense and rapid. Valentine's great juice was given by way of a funnel into the colon; but every remedy local and internal appeared useless and failed to give even temporary relief. After consultation was held and it was decided to induce abortion. This operation was performed by preliminary dilatation of the cervical canal and internal os, and then separating the membranes from the uterus by a sound an eighth of an inch in diameter. There being no appearance of abortion after twelve hours had elapsed a further separation of the membranes was resorted to, and in eight hours complete expulsion of the uterus followed with very little hemostasis. No flexion of the uterus was detected nor anything abnormal before operation except slight anteversion. Recovery though protracted was satisfactory and complete.

From the foregoing cases and others which have come under my direct observation I conclude:

1. That there is an ordinary nausea and vomiting occurring
during pregnancy, that is a physiological act of reflex, vigour and a symptom only, due to the sub-acute hyperaemia attending the rapidly developing uterus, vessels and nerves in a confined cavity. Secondly. That versions, flexions, prolapse of the uterus & are factors of great importance in pregnancy; they are pathological conditions giving rise to reflex and other troubles in health, and how much more so in pregnancy is shown by their converting a merely unpleasant and passing symptom into a dangerous one. That such increase and intensity of ordinary reflex symptoms produce the gravest forms of vomiting in pregnancy, leading to exhaustion and hence are pathological, therefore all forms of more or less continuous vomiting in pregnancy, displacements of the uterus should be looked for and if found corrected. Thirdly. That in the absence of flexions, versions and organic disease, vomiting by prolonging and aggravating a symptom of little moment originally and which has a natural tendency to subside is the great cause of the persistent vomiting in pregnancy which defies all recognised therapeutic remedies. Fourthly. That it is not imputable in pregnancy with its increased arterial tension, and more specially
Where lung and cardiac complications exist, gastric irritation may be set up, in account of the close relationship of the respiratory and vomiting centres in the medulla oblongata.

Lastly it seems quite comprehensible that in tribes of nations which have little or no cultivation the pregnant woman suffers practically little; whilst among the more highly educated, refined and sensitive dwellers of the towns and cities of our own cities and more artificial civilisation will be found the greatest suffers from the nausea troubles which may occur during this condition.

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