Nausea and vomiting in pregnancy
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Introduction
This is one of the most common of all the tribulations of the first trimester. It is usually most severe in the morning that is why morning sickness became a commonly used but essentially descriptive term. The American nomenclature of nausea and vomiting of pregnancy (NVP) is bland but holds several advantages. It is unbiased towards any putative causes, it allows for a spectrum of severity and it differentiates between the subjective symptom of nausea and the objective sign of vomiting.

Types: Nausea and vomiting of pregnancy may be-
Mild: Nausea only.
Moderate: Nausea and vomiting
Severe: Vomiting leading to dehydration, weight loss and electrolyte disturbance.

Mild to moderate NVP are equivalent to what used to be called physiological vomiting. Severe NVP means hyperemesis gravidarum.

Aetiology
Mild to moderate NVP complicates 70% of all pregnancies- typically starting by four to six weeks of gestation, peaking in incidence and severity by eight to twelve weeks and resolving spontaneously by the 20th week. It is the commonest complaint of the first five months of any pregnancy and is probably due to rapidly rising oestrogen levels characteristic of the first trimester although increased progesterone and reduced motilin have also been incriminated. When occurring later in pregnancy it must likely represents a mechanical action by the enlarging uterine fundus on the diaphragm and cardiac and pyloric sphincters. Mild headache moderate NVP are therefore physiologically and statistically normal.

Severe NVP
Hyperemesis gravidarum. There is more controversy over severe NVP. Important causes are summarized as follows:

1) Human chronic gonadotrophin hormone is often quoted as the causative agent because women with multiple pregnancies or Hydatidiform mole (i.e. conditions associated with abnormally high HCG levels) are more likely than other pregnant women to have severe NVP.

2) Reflex oesophagitis: Recent studies suggest that reflex oesophagitis in association with gastric dysrhythmia is causative the trigger to vomiting being changes in gastric PH

3) Other incidental cause:

1) Gynaecological: Twisted ovarian cyst.
Red degeneration of fibroid
Right sided Positioning of the corpus luteum (suggested to act by exposing the hepatic portal system to high concentration of oestrogen).

2) Medical
Peptic ulcer
Gastro enteritis
Acute appendicitis
Pyelitis
Acute cholecystitis
Uraemia
Diabetes

3) Surgical
Intestinal obstruction
Acute appendicitis

4) Endocrine
Adrenal dysfunction (Jarvinen et al. 1962)
Thyroid disorders (Beeks and Burrow 1991)

5) Psychogenic basis is explained as it more common to unmarried pregnancies and unwanted pregnancies.
Social

It is known that social factors are associated with severe NVP. Surveys have found height proportions of women with severe NVP living in overcrowded or unfamiliar circumstances with women from abroad more likely to suffer NVP than indigenous population (Fair weather 1966).

Impact of severe NVP on Pregnancy

Relatively few studies have attempted to relate NVP to other outcomes. Chain and Lao (1988) found an association between severe NVP and intrauterine growth retardation. Godsey and Newman (1991) found that women repeatedly admitted with recurrent hyperemesis failed to gain weight satisfactorily during their pregnancies and produced low birth weight babies significantly more often than controls. Fair weather (1956) found a 40% risk of previous pregnancy loss (either by miscarriage or prenatal mortality) in women with severe NVP.

On the other hand in a prospective study of more than 16000 women there was no difference in the incidence of congenital defects between those who had vomited in pregnancy and those who had not (klebanoff and Mills 1986).

More over moderate NVP has been found to lower the risk of complete miscarriage if it occurs in the context of a Threatened miscarriage (Wiegel and Wiegel 1989).

This protective effect is absent in mothers not suffering from NVP which may indicate lower levels of oestrogens. Severe NVP has no apparent effect on the outcome of threatened miscarriage but curiously seems to protect against postnatal depression, a condition which is over represented in mothers who were NVP free during their pregnancy. Those with mild or moderate types occupy an intermediate position.

Pathology and Biochemical changes

There are no specific morbid anatomical findings and the changes described by Sheehan (1939) in the liver, heart, kidneys and central nervous system are common to all cases of severe malnutrition what ever the cause. The lesions in the brain stem resembling Wericke's encephalopathy are probably due to vitamin B deficiency. The biochemical changes which occur can also be attributed to chronic starvation and are not specific for hyperemesis. There is a loss of water and salt with consequent haemoconcentration and reduction of urinary chlorides. Extracellular fluid is diminished and plasma, sodium and chloride are reduced. Ketosis occurs and the blood urea is elevated as a result of the disturbance in nitrogen metabolism. Potassium deficiency soon follows, as potassium is not stored by the normal adult and rapid loss occurs in the vomit and in the increased renal excretion.

This hypokalaemia may cause further vomiting which, together with liver damage, sets up a vicious circle difficult or impossible to break.

Treatment

Principal

1. Restoration of normal water electrolyte balance.
2. Provision of adequate nutrition.
3. Stoppage of vomiting.

Mild cases of NVP

The treatment of NVP has traditionally been supportive with dietary advice (dry toast before rising and no fatty foods) being supplemented by antacids. The most widely used prescription medication until ten years ago was debendox, consisting of a combination of dicyclomine (a synthetic antimuscarinic agent), doxylamine (a sympathomimetic present in common cold remedies) and pyridoxine. Debendox was withdrawn in 1983 following unsubstantiated claims of teratogenicity.

By this time the infamous thalidomide disaster had already occurred and preserving for NVP dwindled in the 1980s. Despite this, a number of trials have found various antihistamines to be superior to placebo. They are generally considered to be safe during pregnancy although there have been no major
epidemiological studies to look for teratogenic effects (Enkin et al. 1989). Neither the efficacy nor the safety of phenothiazines or metoclopramide have been established despite continued common usage.

Severe cases of NVP

Assuming infective commonly (urinary tract), metabolic (e.g. diabetes), intra abdominal (ovarian cyst or even appendicitis) and intracranial causes have been ruled out, admission for rehydration and correction of electrolytes is indicated for resistant, severe NVP.

Role of Psychotherapy

The possibility of a psychological component to the aetiology of severe NVP was first raised by Lucile Dookley (1920) in her psychoanalytic of Charlotte Bronte's personality, in which she stated "pernicious vomiting always has psychogenic features" assessing Bronte as having been "fearful, conflicted and reluctant to accept her future marriage and child bearing. While accepting organic factors in the illness Dookley assumed "with certainty that her condition was aggravated by psychogenic reactions derived, probably, from the fear and reluctance she felt at this new facing life". Rhodes (1972) reattributed Bronte's death to severe NVP and stated that "hyperemesis gravidarum only seems to be excessive in excessive in those who display neuroticism".

The case study of an elderly primipara with "severe hyperemesis" (Burst 1943) is the first in which such theory was put into practice. Sir Arthur Hurst's patient was treated with "good common sense medicine and a great deal of psychotherapy and reassurance". Following Hurst's work, hyperemesis generally came to be regarded as psychologically mediated and a psychodynamic folklore developed about it.

As there have been no controlled studies of psychiatric management of severe NVP such interventions are at this stage merely speculative. However, supportive psychotherapy would seem to be the bare minimum that should be offered to expectant mothers with NVP severe enough to cause

Role of termination

With regard to the impact of severe NVP on the pregnancy, termination is a last resort when life threatening dehydration or ketosis supervenes or there is features of renal-liver-brain involvement. There are anecdotal accounts however of severe NVP leading to elective termination of pregnancy in the absence of such complication (Tylden 1968)

Conclusion

In conclusion, while mild and moderate NVP can be viewed as physiologically and epidemiologically normal, both severe NVP and the total absence of NVP are probably abnormal, the former representing a greater challenge on account of its association with pregnancy loss and intrauterine growth retardation. While mental processes are
sometimes postulated to underlay severe NVP, there is in all likelihood a complex interaction between physiological and emotional causative factors and the bodily and mental responses of the expectant mother to the disorder. Treatment should therefore espouse both medical and psychiatric components, the later comprising psychotherapy as the first line.

References
4. Dookley L. (1920) Psychoanalysis of Charlotte Bronte, as a type of the woman of genius; Am J Psychol31, 221-272