Hyperemesis Gravidarum

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A moderate amount of morning nausea and vomiting during the first trimester of pregnancy is common enough to be generally accepted as a normal or physiologically determined accompaniment of the pregnant state. When, however, it interferes seriously with nutrition it is regarded as pathological and termed pernicious vomiting or hyperemesis gravidarum. Nausea and vomiting occur in 50% of all pregnant women and are considered normal. The vomiting of pregnancy varies in degree of severity from the so-called morning sickness, or nausea, to the pernicious, or severe type that may have a fatal ending.

In 1929 Peckham reported that hyperemesis gravidarum occurred once in every 150 routine obstetrical admissions and was severe once in 400. Titus notes that this affliction has become more and more uncommon in the last 15 - 20 years. Hyperemesis is commonly encountered from approximately the 6th to 16th weeks of pregnancy in both primigravid and parous women, and begins as an exaggeration of morning sickness.

ETIOLOGY:

The great differences of opinion concerning the etiology shows clearly that the cause or causes remain essentially unknown. The most common causes include:

1. reflex stimulation of the vomiting centre by some pelvic condition. For example, retroversion of the uterus,
2. starvation or carbohydrate deficiency,
3. neurosis,
4. poisoning by histamine,
5. toxemia initiated by degeneration of the decidua,
6. excess of gonadotrophic hormones,
7. adrenal cortical insufficiency,
8. allergy.

So many explanations, while of academic interest, are of little practical help to the clinician, who (until recently at least) has tended to classify his cases clinically into toxic and neurotic types, and etiologically into:

1. Relative adrenal cortical insufficiency,
2. Neurogenic.

1. RELATIVE ADRENAL CORTICAL INSUFFICIENCY

Hyperemesis gravidarum usually occurs in the first four months of pregnancy, during a period in which the pregnancy is hormonally dependent on the anterior pituitary gland. In some patients there occurs a relative deficiency (temporary) in the adreno-corticotropic fraction of the anterior pituitary gland. The resultant adrenal insufficiency produces the hyperemesis, the mechanism being similar to that of Addison's disease, which, indeed, a full blown case of hyperemesis frequently resembles. When the placenta assumes the principal hormonal obligation, of the pregnancy, the vomiting usually ceases; with or without, and sometimes in spite of treatment.

From a study of 29 normal pregnant women by measuring the urinary corticosteroid output, it was found that the daily urinary corticosteroid values decreased from 1000 milligrams to 500 milligrams during the first five months of pregnancy, remained constant during the sixth month, increased to 1200 milligrams in the seventh month and averaged 925 milligrams in the last three months of pregnancy. It was noted that there was a 60 per cent decrease, ten days after delivery in corticosteroid output.

It has been noted that corticosteroid excretion is subnormal in cases of hyperemesis gravidarium and increased with clinical improvement on treatment with ACTH. Since corticosteroid excretion, as a rule, increases after ACTH administration in cases of hyperemesis gravidarum, it was concluded that there was no adrenal cortical insufficiency, but partial hypophyseal insufficiency.

2. NEUROGENIC

Neurosis has been considered as playing a large factor in the etiology, and most authors have stressed the approach to the patient from this aspect. DeLee and Greenhill state "Hyperemesis gravidarum is amenable to suggestion and most of the cures we accomplish are due to it."

A study of 20 consecutive admissions, at the New York Lying-in Hospital, (1) of pregnant women with persistant vomiting, weight loss, marked acetonuria was carried out. These cases were submitted to psy-

chiatric investigation. Rorshach protocols were done before the history was taken. The findings were compared to 14 controls - pregnant women with no vomiting. The results of the psychiatric investigation revealed:

1. With one exception of these 20 patients, they gave a history of earlier serious disorders of gastrointestinal functioning. In each instance this included vomiting which had been provoked by emotional disturbances in stressful life situations.

2. All the subjects during the period of vomiting, and for some time afterward, exhibited significant psychopathology of emotion. In general there was an approximate correlation between the kind and degree of emotional disturbance and the severity and duration of vomiting. Cessation of vomiting was invariably associated with relative improvement in the emotional state of the patients.

3. Perhaps the most striking finding from this study was the consistent association of anxious emotion and gastrointestinal dysfunction with sexual disorders. All subjects complained of complete sexual frigidity with a strong conscious aversion to coitus in every case.

4. All but two complained of severe dysmenorrhea.

5. A striking impressive and consistent finding, despite its somewhat variable expression and degree, was the general psychological immaturity which all these women presented. Vomiting usually was utilized to avoid daily domestic responsibilities and to refuse coitus.

6. All exhibited an unusual degree of over-concern for the body.

SIGNS and SYMPTOMS.

Due to the inability to differentiate vomiting of pregnancy as to etiology, there is now a tendency to group all cases together, subdividing them only according to severity. Vomiting of pregnancy is classified as mild, moderate and severe.

Hyperemesis begins characteristically as an exaggeration of morning sickness. The patient loses weight, anorexia may become an actual loathing of food, and nausea may occur at the sight, or mention of food. Heartburn and hiccup may be troublesome symptoms and sometimes thirst is harassing. As the condition increases in severity, vomiting becomes persistent and unrelated to meals. In this moderately severe state the patient is in danger of progressing to the more severe or pernicious vomiting of pregnancy. Starvation, dehydration, chloride loss, may lead to a state of "metabolic toxemia". The patient looks acutely ill. The eyes are sunken, and one may observe retinal hemorrhages on fundus examination. The tongue is dry and furred, acetone may be smelled on the breath, and ketone bodies are found in the urine. The skin is dry and may become muddy in color. Various neurological complications may appear. If treatment is neglected, delayed or inadequate, the patient has convulsions and rapidly sinks into coma, death ensuing.

DIFFERENTIAL DIAGNOSIS

The diagnosis of hypermesis is usually simple, but certain diseases may simulate this condition. Diabetic coma and acute hyperthyroidism complicating pregnancy may

cause confusion. Cholecystitis, acute appendicitis, pyelitis, and intestinal obstruction complicating pregnancy must also be suspected.

PROGNOSIS.

No case of hyperemesis gravidarum should ever be regarded as trivial. Occasionally the patient suddenly ceases to vomit, retains food and recovers rapidly. More often the disease subsides slowly. Death results from acute starvation with "metabolic toxemia" and exhaustion, myocardial degeneration, delerium, coma, any or all of which may appear suddenly during pregnancy. Hyperemesis may recur in subsequent pregnancies. It is true that the prognosis for hyperemesis gravidarum is now good, but the occasional case of pernicious vomiting can still be a very worrying business.

TREATMENT.

Treatment, as we know it today, began to evolve in the early 1920's. Foremost was the use of insulin, ovarian extracts, and $NaHCO_3$ to combat acidosis. Intravenous feeding, sedation with dietary methods came into prominence next.

The most recent literature continues to expand the number of drugs used, (2) (3). Most prominent are: ACTH, Antihistamines, (4), Dramamine, Banthine, Pronatal Methylsulfate, vitamin B_6, Cortisone and Largactil. Wells and Birmingham (5) report on a series of twenty-nine consecutive cases of nausea and vomiting of pregnancy, severe enough to require hospitalization. Seven of these were classified as hyperemesis. They were treated with daily doses of 25-75 milligrams of cortisone for an average of three weeks. The results were rather startling—23 of the patients had a complete remission of symptoms within 36 hours, with occasional recurrences; one responded poorly.

To remove the psychogenic element, the next 22 consecutive patients were placed on cortisone with placebo substituted at regular intervals. When placebo was substituted all but two had recurrence of symptoms and all twenty were relieved with cortisone again. To avoid prejudice, the authors dispensing the drugs and observing the patients did not know if cortisone or placebo was being administered.

The Department of Obstetrics and Gynecology (6), at St. Francis Hospital reports on the use of Banthine in 149 cases; 74 per cent were relieved completely, while 24 percent were failures.

Eichner (7) using Pronatal Methylsulphate, a parasympathetic blocking agent, reports on 76 cases of vomiting in pregnancy who did not respond to conventional treatment; 58 patients obtained complete relief, while treatment failed in 5.

Hartlieb (8) states that hyperemesis is associated with Vitamin B_6 deficiency and successfully treated 18 patients with this drug.

The conventional treatment of hyperemesis gravidarum consists of: nothing by mouth for 24-48 hours, then small frequent feeding of a dry diet, high in carbohydrate. Intravenous 5% glucose and sedation are added supportive treatment.

To this basic treatment others added such modifications as: glucose in saline 1000 c.c. daily; 20 c.c. of insulin for every 1000 c.c. of I.V. glu-

cose; Vitamin B_6 and B_1, 100 milligrams daily; calcium gluconate, 10 c.c. daily of a 10 per cent solution, and large doses of Vitamin C.

Nora (9) and his associates (7) warn of decreasing serum potassium in persistant vomiting of pregnancy. They suggest the addition of 3 grams of KCL for each litre of fluid. This must be administered slowly to avoid high potassium blood levels which could result in heart block and cardiac arrest.

Undoubtedly neurosis must be of major concern and these patients should be handled with insight. The treatment has varied from hypnosis at one extreme to the advice of Atlee —"the vomit bowl is kept away from the patient and she is told that if she must vomit, she can do so in bed."

In hyperemesis gravidarum, hospitalization, rest and quiet, diet, and supportive treatment are the backbone of present treatment.

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Hygiene is the only useful part of medicine, and hygiene is rather a virtue than science. Temperance and industry are man's true remedies; work sharpens his appetite and temperance teaches him to control it.

Jean Jacques Rosseau.