

HEARTBURN IN PREGNANCY

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Heartburn is a common complaint in pregnancy, occurring in approximately 60% of women.¹ It is often looked upon as one of the minor discomforts to be endured by the expectant mother without any attempt being made to ascertain a cause for it. This condition should not always be considered lightly; besides being, very often, a source of great discomfort to the patient, it may be a warning of any one of several more serious conditions.

In 85% of cases, the onset of heartburn is between the third and fifth month of pregnancy. The symptoms are most severe between the sixth and eighth months in 45%, and in the ninth month in 20%. During the last three weeks of pregnancy, symptoms cease spontaneously in 75% of patients.¹

AETIOLOGY

Pregnancy exerts a disturbing influence on certain functions of the alimentary tract. This is shown by the effect of pregnancy on peptic ulcer. The causes of heartburn, be they endocrine, biochemical, reflex or mechanical, remain theoretical in many cases, but a definite cause can be found if sufficient thought and care is given to the establishment of a diagnosis.

Alterations in Gastric Acidity

Formerly, heartburn was blamed on hyperchlorhydria, but alkalis give inconstant relief. In many pregnant women there is a notable reduction in the free and total gastric acidity, particularly during the second trimester. Small doses of dilute hydrochloric acid have, therefore, been used, but again with variable success.

Reflux of Gastric Contents into Oesophagus

Williams² reported that, in addition to reduction in acidity, there is a diminution of gastric motility in pregnancy, and it has been suggested that this, together with a neuromuscular disturbance at the cardio-oesophageal junction, allows regurgitation into the oesophagus with resultant oesophagitis. Also, the stomach is elevated and rotated as the uterus ascends in pregnancy, and delayed emptying occurs which is probably the result of atony rather than a mechanical cause. The atony of the stomach is part of the generalized muscular atony that occurs in the hollow organs during pregnancy, from hormonal changes. This condition of the stomach helps in the regurgitation of stomach contents into the oesophagus. This is well illustrated in the following case report:

Mrs. R. M., aged 28 years, para 2. Two full-term normal deliveries. History of marked heartburn with the second pregnancy; no heartburn during the first pregnancy. Attended antenatal clinic from the 14th week of the present pregnancy. Developed severe heartburn from the 18th week, which was not relieved by alkalis or hydrochloric acid, but became progressively worse. A barium meal was carried out at the 30th week of pregnancy to exclude peptic ulcer or hiatus hernia.



Fig. 1: Barium meal showing free reflux of barium from the stomach into the oesophagus, with the patient supine.

X-ray report (Fig. 1). In the supine position the patient had marked free reflux of barium from the stomach into the oesophagus. There was no evidence of hiatus hernia, peptic ulcer or ulceration at the lower end of the oesophagus.

A repeat barium meal, three months after delivery, showed that in the Trendelenburg position there was no oesophageal regurgitation or hiatus hernia. This readily explains how pyrosis occurs, owing to reflux of gastric contents into the oesophagus, especially in the recumbent position. Altering the gastric contents from acid to alkali in these patients helps little in reducing symptoms. Treatment with 'prostigmin' is rational since the drug has been shown, both by experimental observation and clinical trials, to produce increased motility of the stomach.

Peptic Ulcer

The course of chronic gastric and duodenal ulcer is said to be improved during pregnancy. Peptic ulcers are rare in pregnancy, but the reasons for this are uncertain. There is a fall in the gastric-acid content in pregnancy as mentioned above, and this may play a part. Way³ showed that an inverse relationship exists between the concentration of chorionic gonadotrophin in the urine and of free acid in the gastric juice. The presence of free bile in only 2 of the 63 cases he investigated is a point against regurgitation of duodenal contents causing a diminution of gastric acidity. Endocrinal factors may play a part in the prevention of peptic-ulcer formation. Its predominance in men, its milder course in

women, and its rarity during pregnancy, suggest that gonadotrophins or oestrogens and progestogens exert an inhibitory influence on ulcer formation. Sandweiss *et al.*⁴ have shown that chorionic gonadotrophins will prevent the formation of jejunal ulcers in dogs in whom the duodenal contents had previously been shortcircuited directly into the lower ileum. The rôle played by the increased output of adrenocorticotrophic hormone and the corticosteroids in the course of peptic ulcer in pregnancy is ambiguous, since peptic ulcer is a contraindication to their use in clinical practice. Also, in conditions bringing about a marked stress reaction with an increased output of corticosteroids, such as burns, duodenal ulcer may appear.

The misdiagnosis of the presence of a peptic ulcer or a perforated peptic ulcer during pregnancy may easily lead to a fatal outcome. As with a perforated appendix in pregnancy, the symptoms and signs may be masked. The signs of subsequent peritonitis may be obscure, probably owing to the high corticosteroid levels in pregnancy bringing about a lack of physical response to inflammation. Although peptic ulcer is rare in pregnancy, its presence must always be borne in mind where pyrosis is a presenting symptom.

Hiatus Hernia

Hiatus hernia is four times more common in women than in men. It is difficult to assess its frequency during pregnancy and there is not much reference to its statistical occurrence. A large-scale investigation is required over a long period.

Herniation of part of the stomach through the oesophageal hiatus is commonly overlooked. In pregnancy it is precipitated by a rise in intra-abdominal pressure, by recumbency and by laxity of the tissues of the oesophageal ring, caused by hormonal changes in pregnancy. Congenital predisposition plays an important part and is precipitated by pregnancy.

The symptoms are protean and may consist of epigastric discomfort, vomiting, especially late in pregnancy, haematemesis, retrosternal pain, and dysphagia. Resultant oesophagitis due to reflux is common, but ulceration and stricture formation are rare in hiatus hernia occurring in pregnancy. The symptoms are aggravated by recumbency and bending forward, and are worse in the last trimester and tend to clear up shortly after delivery. The presence of hiatus hernia is an important consideration in heartburn and vomiting late in pregnancy. The patient may go through pregnancy and labour uneventfully and many such cases are not diagnosed.

Large hernias can also be the cause of dyspnoea and a tendency to cyanosis in labour. Murless⁵ has pointed out that the patient can be tided over delivery without resorting to radical measures, giving small frequent meals, inducing labour if symptoms become worse, and relieving effort in the second stage of labour by forceps delivery under local analgesia. The adoption of the high sitting position in bed at night affords much relief of symptoms. After delivery symptoms disappear and the hernia cannot be demonstrated in most patients. Sometimes, however, the hernia persists after delivery, especially in the older multipara. In those patients in whom the hiatus hernia cannot be demonstrated after delivery, it is important to realise that recurrence is likely later in life when the patient tends to become fatter.

The following case reports illustrate these points:

1. Mrs. A. J., aged 27 years, para 3. History of heartburn with the last pregnancy. Developed severe heartburn during the present

pregnancy at the 20th week. The symptoms were not relieved by alkalis. Barium-meal examination was carried out at 32 weeks and a hiatus hernia was clearly demonstrated; there was no evidence of ulceration or stricture formation. On re-X-ray 2 months after delivery there was no trace of a hiatus hernia.

2. Mrs. J. R., aged 33 years, para 2. History of heartburn with the first 2 pregnancies. Attended antenatal clinic at 20 weeks during the present pregnancy, complaining of severe heartburn and vomiting. No haematemesis. Barium-meal examination showed no ulceration of the oesophagus or stomach. The duodenum, however, showed some oedema, with a small ulcer crater within this. This appearance was constant throughout the examination. In addition, when the patient was placed in the Trendelenburg position a small amount of gastric mucosa was seen to prolapse through the oesophageal hiatus into the thorax. This disappeared while the patient was swallowing barium, but re-appeared again after the swallowing was completed.

Conclusion: A small hiatus hernia could be seen and an active duodenal ulcer was present.

Repeat X-ray one month postpartum: As in previous X-ray, a hiatus hernia was again demonstrated and could be seen prolapsing past the diaphragm. The small duodenal ulcer was no longer visible (the patient had been given treatment for her peptic ulcer before and after delivery).

DISCUSSION

Heartburn should not be accepted as one of the discomforts of unknown aetiology that occur in pregnancy. If further investigations are carried out, a cause will very often be found, and this may lend itself to treatment or give warning of serious pathology that may become worse later in life. The regurgitation of stomach contents into the oesophagus is far more frequent than was previously thought.

That peptic ulcer is rarely associated with pregnancy is true, but its presence must not be dismissed without thorough examination, since a misdiagnosis may lead to a fatal outcome. It should also be borne in mind that peptic ulcer may occur in association with hiatus hernia.

Hiatus hernia is a common serious condition and is precipitated by pregnancy at an earlier age in those patients who are congenitally prone to it. Where hiatus hernia disappears after pregnancy it will probably manifest itself again at a later age when the patient's weight increases. A sliding hiatus hernia is the commonest—hernia *en glissade*. This is an important point because its presence produces incompetence of the cardia and this allows reflux of stomach contents into the lower part of the oesophagus.

SUMMARY

1. Heartburn in pregnancy is discussed with its various causes. It is a common condition occurring in approximately 60% of women.

2. Heartburn in pregnancy should not be considered lightly, and is not a normal discomfort that the expectant mother must tolerate. Very often a cause will be found if sought. It may be the presenting symptom of more serious conditions.

3. In many pregnant women there is a notable reduction in the free and total gastric acidity.

4. Reflux of gastric contents into the oesophagus is common during pregnancy and probably results from a diminution of gastric motility and delayed emptying, together with a neuromuscular disturbance at the cardio-oesophageal junction. These disturbances are partly mechanical in nature, ascent of the uterus causing elevation and rotation of the stomach. Hormonal changes also play an important rôle.

5. Hiatus hernia is four times more common in women than in men, and is not uncommon in pregnancy. It occurs in

those patients congenitally prone to it and is precipitated at an earlier age as a result of pregnancy. It may no longer be demonstrable after delivery, but is likely to manifest itself again at a later age, when a tendency to excessive weight gain occurs.

REFERENCES

1. Rodway, H. E. and Shelley, V. (1935): *J. Obstet. Gynaec. Brit. Emp.*, **42**, 107.
2. Williams, N. H. (1941): *Amer. J. Obstet. Gynec.*, **42**, 814.
3. Way, S. (1935): *Brit. Med. J.*, **2**, 182.
4. Sandweiss, D. J., Saltstein, H. C. and Fabrman, A. (1938): *Amer. J. Dig. Dis.*, **5**, 24.
5. Murless, B. C. (1947): *Brit. Med. J.*, **2**, 251.