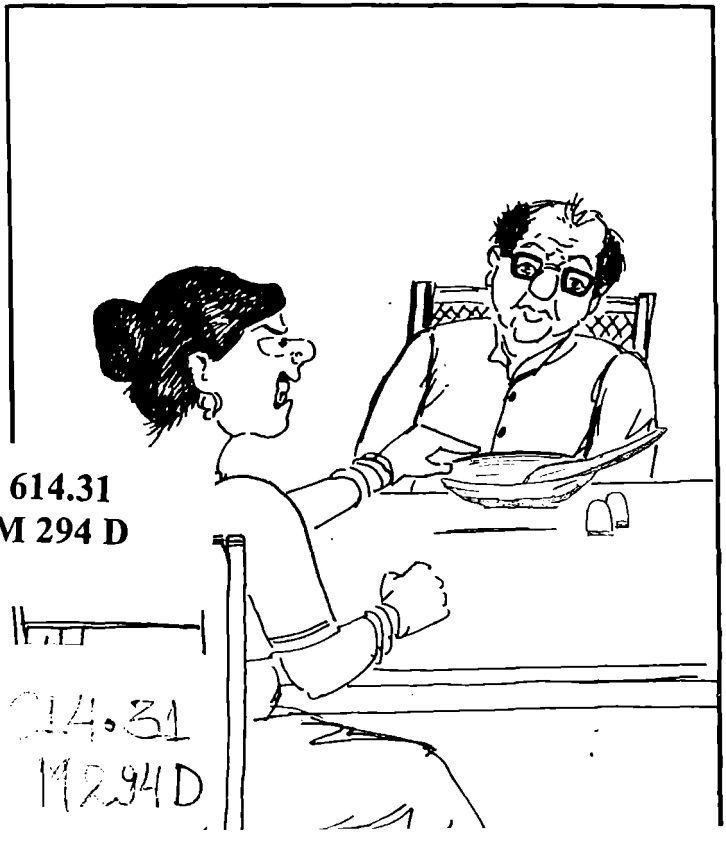
Rs. 20 Each

- Diabetes Mellitus
- Obesity
- Peptic Ulcer
- Heart Diseases
- Kidney Diseases
- Respiratory Diseases (Asthma)
- Anemia (Bloodlessness)
- Food allergy

DIET TO CURE Peptic Ulcer



Health Series : Diet Cure

DIET
TO CURE
PEPTIC ULCER

DT. NISHA MALHOTRA
(DDPHN)

BOOKS FOR ALL
Delhi-110052

Published by
BOOKS FOR ALL,
C-2/9, 3rd floor, Ashok Vihar,
Phase-II, Community Centre,
Delhi-110052.

Typeset by
ABC *for* **DTP**
6, Rajdhani Enclave, Delhi-34.

Printed at
D.K.Fine Art Press,
Delhi-110052

PRINTED IN INDIA

Contents

1
Definition

Peptic ulcer is an eroded lesion which is an acute or chronic benign ulceration occurring in areas or sites exposed to the action of gastric juice, the cause of which is unknown. It is characterised by scarring, spontaneous remission, periodic occurrence.

Gastric ulcer is the name given if the ulcer is in the stomach and if it is located in the duodenum, it is called a "duodenal ulcer". Often both types are grouped together under the general term "Peptic ulcer". Duodenal ulcers are much more common than gastric ulcers and both kinds occur in the male more frequently than in the female usually in people who naturally tense hard working.

2

Introduction

Peptic ulcer is one of the most common diseases in the civilized countries. It is painful, incapacitating and not free from danger. While not one of the main killing diseases, it ranks high on the list of chronic disabling affections and its frequent occurrence in young adults adds to its social and economic importance. Despite much research the knowledge of its causes is still incomplete while the statistics of recent years gives no assurance that finality is in sight. Yet essentially it is a curable diseases and if its causes were understood, it might well be preventable. Undoubtedly, therefore, it is a subject well deserving of further study.

Since peptic ulcer forms only in the presence of acid juice, it is clear, whether we seek the cause of ulcer or its cure, the process, by which the acid is secreted must be a subject deserving close attention.

SECRETION OF GASTRIC JUICE

There are two mechanisms of acid production.

1. Nervous

The vagues nerves are the motor nerves of the stomach. Vagal stimulation is an important factor in the amount of acid-pepsin response.

2. Harmonal

The harmone 'gastrin' is released from the modified nerve cells of antral mucosa and is responsible for sustained response following food. It is released by mechanical distention of the antrum by the presence of food and by a high pH in the stomach. Release the inhibited when pH falls to 1.5. Gastrin causes an increase in gastric acid and in pepsin production. The inter-relating nervous and harmonal activity is of fundamental importance to the amount and duration of response.

COMPOSITION OF GASTRIC JUICE

The gastric juice is a mixture containing hydrochloric acid, the enzyme-pepsin, renin and lipase, mucin, the haemopoietic factor and various salts.

Acid : Hydrochloric acid is produced by panetal cells which line the fundic gland tubules lying in the fundus and body of the stomach. At its source the acid is maintained at a remarkably constant

concentration, with a strength of approx. 0.5% or 160 milliequivalent/litre.

Pepsin : It is formed by the principal or chief cells lining the depth of the fundus tubules. Like the acid its secretion is stimulated by vagal nerve impulses.

Mucin : Mucin is found in two forms in the stomach. The visible, relatively insoluble mucus which contains hexosamine is secreted by surface of mucus membrane. The other soluble mucus which contains uronic acid is mainly of the fundic gland tubules.

Acid and Alkali Components: Thus three types of products are formed in the gland. Lubules of the body and the fundus of the stomach i.e. hydrochloric acid, pepsin and soluble mucin. This 'Fundic Secretion' is typically acid in reaction and is known as the acid component of the gastric juice.

In contrast the recemose glands found in the pylonic antrum and canal and also in a small area lining the watery sightly alkaline fluid which is known as the alkaline component.

The acidity of the gastric contents depends principally on the ratio between the volume of acid secreted by the fundi glands and the volume of the 'alkaline component of the pyloric region.

3
Types of Ulcers

There are two main types of ulcers.

(a) Gastric ulcer: The ulcer is present in the stomach.

Pathological Anatomy

Dyspepsia (It means indigestion or upset stomach) between the age of 20 and 50 is mainly due to ulcers. Ulcers causes severe physical pain. Ulcers occurring in the stomach and duodenum may be acute and chronic, the acute being frequently multiple and occurring less regularly in those well defined sites which chronic ulcer tends to occupy.

In the stomach, chronic ulcers are restricted to the lesser curvature and the adjacent parts of the outerior and posterior surfaces. Ulcers are extremely rare in the greater curvature. Commonly

the ulcer is situated in the small or lesser curvature or upon the posterior wall of the stomach, which is close the lesser curvature. Sometimes it invades the pylorous. Then it takes the form of a circular zone, its advance is slow and progressive; it spreads out on the surface but especially deeply, sooner or later the stomach is perforated and the contents are scattered throughout the peritorical cavity.

Gastric ulcer vary in size from half a centimetre to two centimetres upto the size of the palm of a hand.

Causes of Gastric Ulcer

Causes of gastric ulcer are not very clear. Many theories have been put forward but none is proved to be incontrovertible.

Before knowing the causes of gastric ulcer the functions of stomach should be cleared to us.

Functions of Stomach

Stomach received the food material and acts as a reservoir of food. The movements of stomach help in the proper mixing of food with the digestive juices and also help to move the food into the duodenum. Stomach secretes gastric juice which acts as a digestive fluid. The Hydrochloric acid of gastric juice acts as an antiseptic against swallowed bacteria.

With the help of gastric juice, stomach digests protein. It also digests fats to some extent with gastric lipase. Gastric rennin coagulates milk. Hydrochloric acid causes hydrolysis of food stuff.

Small quantity of water, saline, alcohol, glucose and certain drugs are absorbed from the stomach. Stomach excretes certain toxins. Stomach manufactures two chemical substances which acts as stimulants.

It is suggested that ulcer is formed only if the gastric wall is attacked by the gastric juice. Whenever full hydrochloric acid and pepsin (which help in digestion of protein) comes in contact with the gastric juices on intestinal wall, ulcer will be formed.

In gastric ulcer excess acid is seldom found but there is decreased tissue resistance to the acid.

Heridity plays a significant part in the occurrence of gastric ulcers. Ulcers have often been found to develop in father and son, in all male members of a family, the mother and father of which suffered from gastric or duodenal ulcers.

(b) Duodenal Ulcer

It occurs in duodenum. It is more common in men than in women. It occurs between the age of 30 and 50 years. A great increase during the past 30 years has been clearly established in many countries. This increase has occurred during a

period when the standard of living of the working class has greatly improved in every respect. Nutritional deficiency is unlikely to be of importance in the cause of duodenal ulcer. Constitutional and other factors such as smoking, feeding habits and the stress and competition of modern living require careful consideration.

On the other hand, in some parts of the world where the diet is poor, duodenal ulcer is very prevalent. South India is the most important example. It rarely occurs among the well-to-do. It is almost entirely a disease of labourers. In South India a poor diet is a contributory cause of duodenal ulcer. The South Indian by tradition eats his food very hot and heavily flavoured with spices and curries.

Pathology

The ulcer is generally situated within an inch of the pyloms. Various stages may be found as with a gastric ulcer. The pain is considered to be due to pylorospasm. A sense of discomfort followed by pain appears three or four hours after food, when the stomach is nearly empty and a feeling of hunger is appearing such as in the after-noon and near about midnight.

4

Causes of Peptic Ulcer

Many theories have been advanced as to the cause of these lesions.

1. Gastric Hypersecretion

It is accepted that on an average, ulcer is characterised by hypersecretion of acid. Therefore, there is excessive response to a meal, and there is prolonged secretion during the interdigestive period. Both these factors may operate in causing a chronic ulcer.

2. Mucus and Cellular Turnover

The superficial layer of the gastric mucosa renews itself every two or three days so that minor breaks in the mucosa are rapidly healed under normal circumstances. Alteration in the rate of cell

renewal in the upper elementary mucosa may account for the progression of ulcers from acute to chronic.

3. Inflammatory Change

There is no certain evidence, it seems likely that inflammatory change may predispose to the development of a ulceration by altering the resistance of the mucosa to digestion.

4. Blood Supply

Resistance of the mucosa to digestion is reduced as a result of impaired blood supply, such impairment could occur as a result of venous or arterial thrmobosis or because of "Shunting" of blood within the mucosa. Although it is unlikely that this is the cause of all peptic ulceration, it may account for the ulcer that occur in the elderly.

5. Bile Reflux

Whatever the mechanism, the increased concentration of bile salts in the stomach interferes with the integrity of the gastric mucosa thus predisposing to the development of ulceration.

6. Heridity

There is definite evidence that chronic ulcers occur in families. A strong family history is frequently found in patients who develop ulcers in childhood or adolescence.

7. ABO Blood Groups

Persons with blood group 'O' are three times more likely to develop duodenal ulcer than persons of other blood groups. It seems possible that ABO genes may either increase the number of acid secreting cells or be associated with failure of the ulcer protective mechanism.

8. Sex Incidence

Duodenal ulcer occurs 5-10 times more often in men than in women and perforation occurs 20 times more often in men. Although these effects may be due to differences in the life pattern of men and women, there are grounds for supposing that the female sex hormones in some way protect against peptic ulcer. Women appears to be particularly protected against ulceration during pregnancy. At about the menopause, the incidence of ulcer symptoms and ulcer complications increases.

9. Environmental Factors

There are difference in the incidence of ulcer as between social classes so that duodenal ulcer tend to be evenly distributed throughout the entire population, while gastric ulcer occurs more commonly amongst poor people.

10. Stress

There is association between the development of acute ulcers in the stomach or duodenal and

physical or mental trauma or surgical operations. Similarly acute anxiety helps in precipitating ulcer recurrences and ulcer complications such as haemorrhage or porforation.

11. Seasonal Factor

In Britain ulcer mortality is at its lowest in August and September and begins to rise in October and again increases in the Spring.

12. Occupational Factor

Certain occupation appears to predispose to peptic ulcer. It has been suggested that stress, strain and hurried and irregular meals and inadequate mastication might be important contributory factors.

13. Neurogenic Factor

Some believe that disturbance in the nervous system cause impairment of the blood supply leading to mucosal erosions.

14. Coffee, Tea, Alcohol and Tobacco

Coffine produces an increase in gastric secretion. Hence the possible harmful effect of strong tea or coffee. Alcohol has a similar effect but it also stimulates the secretion of mucus and taken rapidly in excess in a concentrated form it may lead to acute damage to the superficial layers of the mucosa. Tobacco especially cigarettes, contain

various toxic substances besides nicotine. Its effect on gastric secretion appears to be variable.

15. Other Factors

The incidence of peptic ulceration appears to be increased in patients with chronic lung diseases, chronic liver diseases and hyper-parathyridism, similarly anti-inflammatory drugs have all been associated with an increased incidence of peptic ulcer, especially of gastric ulcer. Corticosteroids are also believed to cause peptic ulcer.

5
Diagnosis

The diagnosis of peptic ulcer can usually be made from the characteristic history, but it requires confirmation by barium meal examination or endoscopy. In some patients, the acute peptic ulcer may present with bleeding, perforation or even pyloric stenosis with few or no previous symptoms. The outstanding symptom is pain which appears at an interval after meals varying with the position of the ulcer and character of food. The pain is situated in the epigastrics and usually a little to one side of the midline and may often be sharply defined as by one fingertip. Pain is described as growing pain. Pain generally has a clock like regularity. A very significant feature is its occurrence during the early hours of the night, waking the patient from sleep about 2 A.M.

Occasionally severe interactable pain in the back suggest the situation of an ulcer. Apart from this

and other complications a characteristic feature is spontaneous remission of symptoms and spontaneous recurrence of attacks for which no cause presents.

Diagnosis involve careful study of the symptoms and signs followed by routine and coloured X-Ray and gastroscopic investigation.

Examination of Blood

If the patient with peptic ulcer is suffering from severe dehydration or if there are haemorrhage tendencies, the prothrombin time should be estimated. The concentration of hemoglobin and number of erthrocyte should be estimated at frequent interval if the patient has signs of active peptic ulcer. The number of Leucocytes and Erythrocyte Sedimentation Rate (ESR) may be determined if symptoms of penetrating ulcer are present.

Examination of Urine and Stool

Examination of urine and fecal discharge has little diagnostic value in the detection of ulcer. But estimation of sodium chloride in the urine may be valuable in measuring the adequacy of chloride-therapy for the patient with haemorrhagic peptic ulcer.

In treatment of gastric ulcers the stool should be examined for evidence of blood at frequent intervals. The presence of even small amount of blood in stool may indicate the lesion under

treatment is malignent. The most important laboratory aid is the diagnosis of peptic ulcer is gastroscopy examination.

X-Ray Examination

The diagnosis of peptic ulcer is confirmed by Barium meal investigation. It is the most important diagnostic aid--- characteristically seen on the X-Ray is a *'niche'* or a regular conical or semicircular projection of barium beyond the normal outline of the stomach.

In the case of a duodenal ulcer, in addition to the ulcer niche there is usually deformed duodenal cap due to spasm and mucosal swelling in the neighbourhood of the ulcer.

Gastroscopy

Gastroscopy examination now forms a routine part of diagnostic service offered by major hospitals. The patient lies on his left side supported against a rigid back piece, his head held in the neutral position by an assistant. The tip of instrument is guided carefully into the phyrnux and the cervical spine is gradually extended to allow it to enter the oesophagus and examine the patient. Gastroscopy is great useful to confirm the X-Ray diagnosis as a check in cases where clinical evidence suggests an ulcer but none can be seen in the X-Ray.

6
Symptoms of Peptic Ulcer

Clinically, gastric ulcers and duodenal ulcers are essentially one. Although the symptoms may be slightly different. Sometimes indeed, being clearly typical of one on the others, it is often only by X-Ray examination that their localization can be discovered and their simultaneous occurrence is not usual.

1. Pain

This is the characteristic symptom of peptic and it has three notable features—sharp localization of the epigastrium relationship to food and periodicity whenever ulcer pain occurs it is usually sharply localised so that the patient can point to the site. Pain is often described as gnawing on burning. Pain varies in severity.

Most patients recognise a relationship of the pain to food although the relationship varies between patients, and in the same patient from time to time. Duodenal ulcer pain tends to occur between meal times, so that the patient may describe it as 'hunger' pain which is characteristically relieved by food. A notable feature of duodenal ulcer is pain awakening the patient from sleep between 2-4 A.M. The pain of gastric ulcer occurs less regularly it frequently occurs within an hour of eating is less often relieved by food and it rarely occurs at night. Besides the characteristic relief obtained after eating, ulcer pain is almost relieved by antacids, by vomiting and by bed rest in hospital.

2. Periodicity

Ulcer pain occurs regularly each day for days or weeks at a time, then disappearing to reoccur weeks or months later. Between attacks the patient feels perfectly well and may eat and drink without pain. Bouts of pain may at first last only a day or so at a time and occurs only once or twice a year. As the natural history was, however, episodes begin to last longer and occur more frequently, so that in severe cases remissions of pain may be shortlived and pain become more or less persistent.

3. Vomiting

Vomiting is another symptom of gastric ulcer, often vomiting takes place at a height of pain,

spontaneously or is induced by the patient. The time of vomiting may indicate the site of the ulcer. If it occurs immediately after eating, it is probably that an ulcer will be found close to the entrance of the oesophagus. If the food takes some considerable time previously and are contained in the vomit, the ulcer is found to be situated close to the pylorus.

4. Haemorrhage of Perforation

Sometimes haemorrhage is the first indication of the presence of an ulcer or this may occur if the ulcer goes untreated. Sudden weakness and tarry stools, the patient is usually hospitalised at once. If the perforation accompanies, the situation is even more serious and the patient is subjected to surgery as soon as possible.

5. Heat Burn

Heat burn is the most common symptom of either gastric ulcer or duodenal ulcer occurring in about 25% of cases. It is often due to hyperchlorohydia and the burning feeling deep in at the midrip is very like the irritation of strong acid applied to the skin. It is the result of any kind of irritation of the gastric juice or caused by action of an irritant upon the gastric mucosa either in food eaten or stimulant such as condiment, alcohol, coffine or nicotine.

6. Nausea

Some define it nearly as distaste for food not for different from anonexia or loss of appetite. Distaste

for food is an occasional complain particularly in gastric ulcer during acute stage and probably due to secondary gastritis.

The frequency with which sufferers complain of irregular bowel movement is striking. Though diarrhoea does occur, constipation is common.

7

Treatment of Peptic Ulcer

It can be either medical or surgical.

Before discussing the medical or surgical treatment of peptic ulcer it is necessary to indicate the types of care for which a surgeon should always be called into consultation.

There types are:

1. Old ulcers of the duodenum which are producing pyloric or duodenal stenosis and marked gastric retention and gastric ulcers producing such a degree of "hour glass" contraction of the stomach as to lead to obstruction.
2. Any gastric ulcer in the middle aged patients which does not show satisfactory signs of

healing within four weeks while on strict medical treatment.

3. Any ulcer suspected to be malignant at gastroscopy.
4. Ulcer which show a persistent tendency to blood in spite of repeated courses of medical treatment, particularly if the patient is over 40 years of age and suffers from arteriosclerosis.
5. Ulcer which, despite medical treatment cause recurrent attacks of dyspepsia sufficiently severe to lead to economic disability.
6. Perforation of a peptic ulcer.

Both gastric and duodenal ulcers are treated on the same lines. Adequate medical and dietary treatment is needed for cares of uncomplicated peptic ulcers especially in the earlier stages.

MEDICAL TREATMENT

There are three aims of medical treatment :

(1) To relieve the symptoms, especially pain.

(2) To cure the ulcer.

(3) To prevent recurrence.

While there are effective methods of relieving the pain and other symptoms, and it is possible to hasten the healing of an ulcer it is doubtful if we can prevent its recurrence. It should not be

forgotten that relief of symptoms does not mean the healing of the ulcer. Relief of symptoms can occur in a few days but healing of an ulcer may take six weeks or more. Once the patient is in this painless phase, the ulcer may persist for many months without any further recurrence of pain and without any change in its size. The more chronic an ulcer, the less chance of its healing and such ulcers require surgical treatment. Therefore, the aim should be to heal an ulcer in the early stages. But this demands a prolonged and intensive course of treatment with several weeks. Bed rest besides a rigid diet and strict medication and few patients can afford the time and cost of such a medical regime.

The prevention of recurrence is very difficult, for not only do the original causative factors still operate, but in addition there is an area of lowered resistance provided by the healing scar. So the main value of medical treatment is to relieve discomfort and tide over the patient till, in most cases, a spontaneous recovery takes place. However attempt can be made to prevent recurrence by changing the patient's way of living, continuing his dietetic restrictions, prohibiting alcohol, and tobacco, hopefully urging him to avoid worries and frustrations and come to terms with his stomach but there can be no guarantee that even such strict measures will be effective and in case, in most patients such attempts rarely outlets a year at the most.

The *principles* of treatment include :

(1) Mental and physical rest
(2) Diet
(3) Drugs—Antacids, Anti-cholinergics, sedatives
(4) Avoidance of smoking, coffee and alcohol
(5) Psychotherapy

(1) Rest

The single most effective measure for the relief of ulcer pain and the promotion of healing is bed-rest. This may be undertaken at home under the care of the family doctor or more effectively in hospital, undoubtedly rest in hospital has additional benefit, possibly because of the release from domestic and business worries. But the tendency these days is for ambulatory treatment while the patient remains at work, except in the more severe cases. Rest means bed-rest, though visits to the toilet and bathing are allowed, so both physical and mental rest appears to promote the healing of an ulcer.

(2) Dietary Treatment

It has been dealt with later.

(3) Drugs

(A) Antacids

Ulcer pain can be relieved by antacids. If pain is severe, antacids are given frequently. For ambulant

patients, antacid preparation in tablet form is prescribed (e.g. Gelusil): these can be conveniently carried in the pocket and the patient told to chew or suck one or two whenever pain occurs. Although antacids give a prompt relief from pain, there is no convincing evidence to show that they improve the chances of healing of a peptic ulcer.

(B) Anti-cholinergic or Antispasmodics or Antipain

These are widely used to inhibit vagal stimulation, thus reducing gastric mobility and secretion. They are most valuable in relieving ulcer pain during the night. They are contraindicated in patients with glaucoma or gastric retention. Large doses of anticholinergic cannot be tolerated by elderly and ambulant patients because of the blurring of vision.

(C) Sedatives or Tranquilizer

They are useful in the treatment of ulcer patients, especially those who are anxious because they relieve anxiety.

Biogastrone

It has been shown that a derivative of liquorice called Biogastrone, hastens the healing of gastric ulcer, but without any effect on the healing of duodenal ulcer.

Irradiation

X-Ray irradiation has not been tried on a large scale, but it is said to give favourable results in the

aged patient with whom the medical treatment has failed and surgery can not be done.

SURGICAL TREATMENT

In the ordinary uncomplicated case, surgery is generally not indicated and conservative treatment gives good results. However surgery is indicated for the following conditions.

(1) A Ulcer which has produced pyloric or duodenal stenosis or hour-glass stomach.

(2) An ulcer which has failed to heal and when symptoms persist or recur so as to interfere with the enjoyment of life.

(3) An ulcer which is thought to be malignant.

(4) A jejunal ulcer—following gastro-jejunostomy.

(5) Perforated peptic ulcer.

(6) Haemorrhage, severe or recurrent.

There is as yet no single, ideal surgical operation.

For Gastric Ulcer

The operation of choice is that of partial gastectomy in which the ulcer itself and ulcer bearing area of stomach is removed. The gastric stump is anastomosed with duodenum. For duodenal ulcer.

Various operations are available, best being partial gastrectomy with vagotomy. The object is to

remove sufficient of acid secreting area to allow the ulcer to heal. Vagotomy which means cutting off both the vagus nerves, reduces the nervous stimulation of gastric secretion. The gastric stump is then anastomosed with a loop of small intestines, the procedure being named as gastro-enterotomy.

Prognosis of Peptic Ulcer

The outlook for the patient with peptic ulcer is generally good and in the majority of cases medical treatment gives good results. Modern surgery, especially to deal with the emerging situations of acute perforations and haemorrhage has vastly reduced the hazards of this disease.

DIETARY TREATMENT

Every ulcer case is an individual matter and a suitable plan of treatment should be outlined to meet specific needs. The possible development of food deficiency diseases following too rigid an ulcer diet for a protracted period must be borne in mind. It has been found recurrence in the majority of cases is due to carelessness in diet, though other factors also play a role e.g. use of tobacco, alcohol, business worries, lack of proper rest or an onset of acute intercurrent infection.

The object of the dietary treatment is to irritate and stimulate the stomach as little as possible and at the same time to supply sufficient proteins to 'buffer' the acid that may be secreted. The

important thing in modifying the diet is to provide an adequate diet which will permit the ulcer to heal and give proper nourishment to the patient. Iron and thiamine intake is severely interfered with since whole-grains cereals are omitted and also due to continued alkalinization of gastrointestinal tract, therefore, measures should be taken to supplement the diet in order to compensate for such possible inadequacies.

Despite the uncertainty which still surrounds the aetiology of ulcer certain *features of therapy* must be given prime importance.

(1) Adequate Nourishment with Frequent Small Feedings

Adequate nourishment should never be lost sight of although the feedings should be small in bulk and intervals must be increased in frequency. The stomach should never be completely empty and at the same time the bulk should be so adjusted as to avoid distention stimulus. Frequent feedings alternating with antacids are desirable to neutralize the free hydrochloricacid.

(2) Avoidance of Chemically and Mechanically Irritating Foods

In order to avoid mechanical irritation, foods should be soft and as smooth as possible. Fibrous foods and tough connective tissues of meals should be avoided for this reason and also since they tend to stimulate flow of hydrochloric acid. Enriched breads and cereals of the refined variety may be

used. If the cereals of the whole-grain type are served they must be strained to eliminate fibre. As the diet progress: vegetables may be chopped instead of pureed provided that they are well cooked and tender.

(3) Avoidance of Foods that Stimulate Gastric Secretion

Foods which have a stimulating effect on the flow of gastric juice should be omitted from the diet. These are e.g. concentrated fruit juices, coffee, tea, tough meats, highly seasoned foods, strongly flavoured vegetables and extremely hot and cold foods also cause distress. The use of alcohol and cigarettes is usually restricted since these not only stimulate the secretion of gastric acid but also tend to delay the healing ulcers.

(4) Protein Food Desirable

Protein foods such as milk, eggs, are desirable since they bind the free hydrochloric acid present in the stomach helps in neutralizing acids and at the same time enhance wound healing.

(5) Fat Food Desirable

Fats especially cream butter and olive oil are important because of their inhibiting effect on gastric secretion and also because of their high caloric value. A diet relatively high in fats which are slowly evacuated seem to be well borne by the majority of patients with ulcers.

(6) Diet Sufficient in Vitamins

The vitamin content is important especially since the diet must be continued for a considerable period of time. The addition of necessary vitamins, particularly vitamin C is believed to aid in the healing of the ulcer.

TYPES OF DIET

There are three types of diets of peptic ulcer in common use—

(1) Sippy's Diet

This is a liquid diet which gives a larger amount of fat with a view to depress the secretion of hydrochloric acid. This diet is named after the doctor who outlined this plan of feeding in 1915.

It includes a good supply of digestible protein. It consists essentially in the hourly administration of equal (i.e. 150 ml) parts of milk and cream alternating with antacids.

(2) Lanhartz' Diet

It is also given mainly in the form of liquids but contains more protein supplied by eggs along with milk and more carbohydrates supplied by glucose. These feedings are given at two-hourly intervals during daytime and four-hourly by night. In this diet some amount of cereals are also included.

(3) Meulengracht Diet

This includes much wider variety of food stuffs e.g. chicken etc, fruits and certain vegetables. All the foods are carefully acceptable to the patient because it contains from the beginning of treatment a much wider variety of foods, which can be given in semi-solid form and thus they tend to remain longer in stomach than fluids and therefore are more effective in neutralizing hydrochloride acid.

Considerations of these Diets

(1) The feeds must not be very warm nor very cold.

(2) Alkaline medication is used with each type of diet unless hypochlorhydria is present and olive oil is sometimes administered last thing at night.

(3) As the above mentioned diets contain very little vitamin C, it will be necessary to give strained orange juice or tomato juice between feeds as soon as possible, if treatment is likely to continue for any length of time.

(4) Water between feeds allowed in small quantities.

Directions for Application of Diet

Each patient presents a different problem depending upon the type and location of the ulcer.

The first thing to do in insisting medical treatment is to give the patient complete physical and mental rest. Physical rest tends to hasten mental relaxation and it undoubtedly helps to put the stomach at rest. Enough sedatives should be given to keep the patient quite and contented with his stay in bed. The initial diet usually suggested is modification of 'sippy diet'. In general the plan is to give the patient 3-4 oz of each milk and cream hourly between 7 A.M to 9 P.M. approximately three times during the night, usually about 11 P.M., 12.30 A.M. and 3 A.M.

After First Four Days

This diet may be modified by substituting certain combinations containing milk and cream for the plain milk and cream during the day. The chief reason for substitution is the need for maintaining sufficient interest in food. The diet alone may not be adequate to keep the free hydrochloric acid neutralized, consequently additional medication may be necessary. Vitamin and mineral supplements should be given to ensure the patient's daily requirements. Chances are remote of the patient's incurring such deficiency during the short time of restriction but there are reasons for making certain that this does not occur—

(1) An adequate vitamin intake probably assists in the healing process.

(2) Previous dietary restrictions or inadequate intake of food may have induced a subclinical vitamin and mineral deficiency.

(3) Most diets for treatment of ulcer contain more fat soluble vitamins than they do water soluble vitamins.

(4) If surgical procedures becomes advisable, the patient should be in an adequate state of nutrition.

After Ten Days

The diet may be modified by the addition of cereal but the same care to administer milk and cream or substitutes to them and antacids every half hour should be continued. The diet may be maintained until 20-21st days.

Convalescence from Peptic Ulcer

(1) In this stage food should be taken at regular and frequent intervals, two-hourly at first and later every three hours.

(2) Between the three main meals there should be snacks consisting, for example of biscuits and a milky drink. At first the meals and snacks should be of equal size approximately.

(3) All irritating foods should be avoided such as seeds and skins of fruits, apple core, brown bread, husk of oatmeal etc.

(4) Patient should sit still during their meals and should not rush about immediately

afterwards. A housewife may have to take some biscuits and milk before getting up early in the morning and postpone her breakfast until the rest of the family have had theirs. Those who work away from home can take snacks, one or two biscuits between the meals, those who travel a great deal and those who have social engagements to keep, must plan schemes for themselves so that feeds are always observed and some suitable food is taken at similar hours everyday. For these a packet of biscuits in the pocket or handbag, to be eaten in the car or train, are the best insurance against a recurrence of the discomforts of hyperchlorhydria.

(5) At first not more than five oz of fluid should be taken at one time. A little water may be drunk with feeds and upto 5 oz between feeds.

(6) Sugar and cream may be taken in beverages and puddings as desired. Glucose and lactose should be used in addition if the patient is underweight.

FOODS WHICH ARE ALLOWED ON THE BLAND DIET FOR THE ULCER PATIENT ARE AS FOLLOWS

Beverages—Milk and milk drinks, butter, milk, weak tea.

Bread—Enriched white, fine whole wheat bread etc.

Cereals—Cooked, enriched, refined cereals such as cream of wheat, cornmeal etc. strained coarse cereals such as oatmeal, prepared cereals such as cornflakes, puffed rice.

Cereal Products—Macroni, spaghetti, noodles, rice etc.

Cheese—Milk cheese such as cream or cottage cheese.

Desserts—Plain simple puddings, gelatin desserts (no nuts or raw fruit added), plain cake, sugar, cookies, vanilla ice-cream.

Egg—Anyway except fried.

Fats—Butter or fortified margarine, vegetable oils, cream.

Fruits—Ripe bananas, strained fruit juice, apple sauce, cooked pears, peaches apricot (without skin) pureed plums, prunes, white cherries.

Meats—Beef, lamb, liver, chicken, fish--all should be tender and free from excess fat--all meats should be ground unless very tender.

Milk—Whole, fresh, pasteurised, dried evaporated.

Soups—Cream soup made with vegetable puree, no soups made from meat stock.

Vegetables—Green leafy vegetables, tender, cooked and also other vegetables tender, cooked except peas corn and beanes (pureed) white potatoes, mashed, boiled, baked (without skin).

TYPICAL FOODS TO BE AVOIDED

Beverages—Strong coffee or tea, except in very small amounts and in diluted form, carbonated beverages.

Breads & Cereals—Coarse dark cereals unless strained, coarse dark bread, hot bread of all types.

Cheese—Strongly flavoured types.

Desserts—Rice pastries, doughnuts, any desserts containing nuts or whole fruits.

Fruits—Raw fruits -- except juices and ripe banana, any fruits with seeds or skins, pineapple or figs.

Meats—Salted, smoked, or highly seasoned meat and fish, fatty, meat or fish, tough meat

Soups—Any soups prepared with meat stock e.g. chicken broth.

Vegetables—All raw, fibrous, tough vegetables, strongly flavoured --- veg. such as cabbage, cauliflower, green peppers, onions, radish, turnips etc.

PLANNED MENUS

Ist Stage Management (Very Acute Stage)

Total Food Allowances For One Day —

Food	*Weight in grams*	*Household measures*
Milk	900	4-1/2 glasses
Cream	900	4-1/2 glasses

This provides approximately - 2520 calories, 55 grams proteins.

IInd Stage Management

Total Food Allowances For One Day

Food	*Weight in grams*	*Household measures*
Cereals	105	1/2 cup.
Breadslices	60	2 slices
Butter	40	4 squares
Milk	600	3 glasses
Cream	660	3-1/4 glasses
Egg	100	2
Vegetables	225	3 small servings
Fruit-orange juice	90 -100 gms	1/4 glass
Potatoes	75	1 small serving
Sugar	10	2 tsp.
Gelatin desserts & custards	200	2 serving.

This provides approx.—2950 calories, 70 gms. proteins.

Menu

Early morning — Milk

Breakfast — Oatmeal Porridge
soft cooked egg.
Toast with butter

Mid Morning — Orange juice (diluted)

Lunch — Dal soup
(without husk)

	Vegetable puree, Buttered slice, cream
Tea Time	—Life Coffee with cream biscuits
Dinner	--Veg. soup. soft khichri custrad

III Stage Diet

Total Food Allowance For One Day

Food	*Weight (in grams)*	*Household measures*
Cereals	105	1/2 cup
Bread	75	3 slices
Butter	40	4 squares.
Milk	900	4-1/2 glasses
Cream	300	1-1/2 glass
Meat	45	1 small serving
Egg	100	2
Vegetables	225	3 small servings
Fruit (diluted orange juice)	120	1/2 glass
Fruit	150	2 small servings
Potato	150	2 small
Sugar	10	2 tsp.
Desserts & custard	100	2 servings.

This provides approx - 2660 calories, 80 grams proteins.

Menu

Breakfast	— Oatmeal porridge Boiled egg, Bread with butter, Banana -1
Mid Morning	— Milk
Lunch	— Mixed vegetable soup. Khichari, Apple sponge pudding with cream.
Tea time	— Weak tea, Cheese sandwich
Dinner	— Veg. soup. Steam Fish with white sauce/Dal custard
Bed time	— Malted milk.

8

Treatment of Complications of Peptic Ulcer

Pre-operative Complications

(1) Haematemesis and Malcrena

The immediate medical treatment of bleeding from peptic ulcer consists of absolute physical rest in bed, the injection of morphia, the treatment of shock and the restoration of the blood volume. If bleeding continues repeated transfusions may be necessary. In such patients immediate and typical treatment is the treatment of choice.

The aim of diet therapy in such ulcers are—

(a) to supply the daily fluid requirements.

(b) to maintain an adequate caloric intake.

(c) to supply vitamins especially B and C which are often deficient in patients who have been dieting.

(d) to neutralize the gastric juice and at the same time it is necessary

(e) to avoid gastric destention and

(f) to avoid trauma to the ulcer bearing area.

It is generally agreed that until the bleeding has ceased, and a few days after, the diet should be entirely fluid. Milk is the natural vehicle, to which eggs, fruit juices, mineral salts and vitamins may be added. Initially fluids are introduced by means of a continuous drop through a nasal tube.

(2) Perforation

This is an acute surgical emergency. Post-operative treatment consists of allowing the patient to suck ice or sip water for 24 hours. On the second day small drinks of water or milk are allowed, e.g. strained oatmeal diluted with equal amounts of hot milk. The diet should be given with a small amount of food. Gradual increase is made each day until about the seventh day when the patient should be taking Ist stage ulcer diet.

(3) Pyloric Obstruction

The obstruction may be due to stenosis, to spasm or oedema or to a combination of three features. Medical treatment consists in replacing losses of water and electrolytes which result from

vomiting, by appropriate intravenous infusions, by aspirating the stomach contents regularly during night and morning and by giving small feeds of milk every two hours or if pain and spasm are persistent, by the infusion during 24 hrs. of upto 3 litres of milk and fruit through a tube introduced into the stomach. If medical treatment fails to relieve the clinical features of obstruction, relief must be sought by operation e.g. partial gastrectomy or gastroentrostomy.

POST OPERATIVE COMPLICATIONS

(1) Jejunal Ulceration

This may result when the jejunum is anastomosed to the stomach and thus becomes exposed to the effects of acid gastric juice. The results of medical treatment are often unsatisfactory and therefore surgical operations are necessary.

(2) The Dumping Syndrome

The symptoms of early syndrome starts within the half an hour of meal whereas the late syndrome starts after 1 $^{1}/_{2}$ hours. It is caused by the food passing very rapidly out of the stomach and being dumped into the small intestines and thus occur after gastrectomy or gastroenterostomy.

The prevention and treatment of the early syndrome consists in taking time to meals --- chewing the food thoroughly and lying down

afterwards. Bulky foods must not be taken. Food and drinks must be neither very hot nor very cold. By ensuring that meals contain ample fat and protein it is often possible to reduce the emptying rate of the stomach and thus prevent not only the symptoms of the early dumping syndrome but also the hypoglycemic features which characterise the late syndrome. These may be relieved by taking sugar. In severe cases it may also be necessary to employ drugs which delay the emptying of the stomach.

9
Precautions

After Treatment Precautions Against Future Attacks

To prevent the occurrence of future attacks, the patient should practice a fair degree of discipline e.g. the avoidance of too many spices, raw vegetables, very hot and cold food stuffs, raw alcohol, strongly flavoured vegetables, meat soups, seeds, skins etc.

Meals should be taken frequently, regularly and unhurriedly. If a meal must be postponed it is better to take something for example a glass of milk, thin gruel or biscuits etc. It is better not to take meals when physically or mentally tired.

Some physicians rigidly oppose smoking but some doctors see no harm if it is taken after meals. Aspirin is said to irritate gastric mucosa. But considering the enormous consumption of this drug the danger must be very slight but precaution must be taken. Regular dental attention is

desirable to ensure efficient mastication and to avoid sepsis which in some opinions is an important provocative factor.

A warning is sometimes considered necessary against particularly strenuous forms of physical exertion on the principle that the first position of the duodenum --- the more frequent site of ulcer- serves as a sort of hook from which the stomach swings like a hammock and may be unduly stretched.

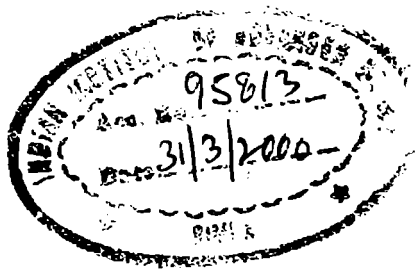
10
Summary

New views and facts are coming to light like many other medical problems about the peptic ulcer. Peptic ulcer may be defined as an eroded lesion in the gastric or intestinal mucosa. The exact cause of peptic ulcer is unknown. It is believed that due to some reasons the mucose of stomach and duodenum becomes unable to resist the action of digestive juices. Due to auto-digestion of part of the mucose an ulcer develops.

The diagnosis of the peptic ulcer is mainly based upon the patient's symptoms. The patient suffers from a typical deep growing pain which is sharply localized. The pain is due to the presence of unneutralised acid. Treatment of the patient rather that of the ulcer is the keystone to success. Improvement in patient condition is rapid if the patient can be relieved of worry and anxiety. Diet for peptic ulcer patient is free from mechanical,

thermal and chemical irritants small feedings at frequent intervals are given. Certain drugs to neutralise acid, to decrease mobility of the stomach and to put the patient at mental rest can also employed. Depending upon stage of peptic ulcer various types of diets are provided.

Because of the variable character and circumstances of ulcer, it is rather difficult to recommend some simple really curative treatment. The patient himself must take care of best manners to get relief and this will help him in leading a satisfactory life.



Handbook of Epidemiology : For Personnel of Primary Health Centres/*L. Ramachandran* **Rs. 75**

The book is specifically meant for the primary health staff. It seeks to equip them with necessary knowledge to understand diseases and take preventive action.

DISEASES: CURED BY YOGA
100% safe way to perfect health

- Asthma (*Damaa*) • Obesity (*Motaapa*) • Diabetes (*Madhumeh*) • Tuberculosis (*T.B.*) (*Tapedik*)
- Piles, Fissure, Fistula (*Bawaseer, Bhagandar, Nasur*)
- Improving Height • Blood Pressure Heart Diseases
- Rheumatic Arthritis (*Jodon ka Dard*) • Indigestion (*Badhasmi*) • Backache (*Peeth ka Dard*) and Spondylitis
- Urinary & Seminal Diseases (*Mootra Aur Virya Vikaar*) and Hernia • Constipation (*Kabz*) • Sweat Control (*Paseena Niyantran*) • Flatulence (*Pet Ki Gais*) • Skin Diseases (*Charam Rog*) • Worms (*Pet Ke Keede*) • Navel and Jaundice (*Naabhi Aur Peeliya*) • Women Diseases
- Hair • Throat Diseases • Eyes • Concentration (*Ekaagrata*) • Common Cold, Cough and Catarrh (*Zukaam, Khaansi Aur Nazla*) **Rs. 8/- Each**

Health Series : Diet to Cure

- Diabetes • Obesity (Motappa) • Peptic Ulcer
- Heart diseases • Kidney Stone (Gurde Ki Pathari)
- Respiratory Diseases (Saans Ki Beemariyan)
- Anaemia (Bloodlessness) (Khoon Ki Kami)
- Food Allergy **Rs. 20 Each**