USEFUL THERAPY TO REMEMBER

Therapy after Partial Gastrectomy

J.E. Lennard-Jones, MD, MRCP, University College and St. Mark's Hospitals, London

After partial gastrectomy, some patients develop troublesome symptoms related to meals, or to the digestive tract, and many patients develop nutritive sequelae over a period of years. Drugs are of limited value in relieving the symptoms, but minerals and vitamins are of great value in preventing and treating deficiency states. Regular supervision of all patients who have had a partial gastrectomy is now a rewarding and essential aspect of preventive medicine. There may be fewer sequelae from other types of operation for peptic ulcer, but long-term results are not yet available and at present these patients should also be supervised.

SYMPTOMS RELATED TO MEALS:

The following paragraphs describe some of the common syndromes encountered, but mixed forms are common.

The Small Stomach Syndrome—When a large part of the stomach has been removed, patients may experience a sense of epigastric discomfort, distension or even pain towards the end of meals. The best remedy is to eat little and often; drug therapy is not indicated.

The Dumping Syndrome—The mechanism of this syndrome is not fully understood but rapid emptying of food from the stomach remnant into the jejunum is an important factor, possibly with the liberation of humoral substances from the gut wall into the circulation. Characteristically symptoms occur soon after a meal, particularly a large meal or one containing much sugar. There may be a sense of faintness, flushing, sweating, palpitations, a compelling urge to lie down; often with an irresistible sleepiness
excessive borborygmi and diarrhoea. There is no specific remedy for these symptoms. They tend to decrease if the patient’s health can be improved. The best help comes from a regime of small frequent solid meals containing much protein and little sugar, and unaccompanied by fluid, the aim being to delay gastric emptying and to reduce the volume and osmolarity of chyme entering the jejunum. If possible, the patient should eat slowly and remain sitting or lie down for 15-30 minutes after eating. Small doses of soluble insulin, 10-20 units, given 30-50 minutes before main meals often reduce intolerable symptoms. The same effect may be more conveniently obtained by giving tolbutamide 250-500 mg, half an hour before meals. Sometimes the circulatory symptoms are helped by the serotonin antagonist, cyproheptadine (‘Periactin’), 4 mg taken by mouth 1-2 hours before meal, or by propranolol (‘Inderal’) 20-40 mg three times daily before meals.

Delayed Hypoglycaemia—Following gastrectomy sugar is rapidly absorbed and high levels of blood glucose and insulin are found. The glucose level then falls rapidly and hypoglycaemia may occur, sometimes with symptoms similar to those of dumping. These symptoms, which usually develop 2-3 hours after meals, may be avoided by eating less carbohydrate at meals and by taking a snack or sweet two hours later.

Food Intolerance—Besides sweet foods, some patients find postoperatively that they can not tolerate eggs, some fats or milk. Abdominal discomfort or diarrhoeas after milk may be due to intestinal lactase deficiency and such patients can take yoghurt or cheese. High residue foods such as orange pith may cause bolus colic and even, occasionally, intestinal obstruction.

OTHER SYMPTOMS:

Recurrent dyspeptic pain—This pain may occur with or without a radiologically demonstrable recurrent ulcer. Any possible precipitating factor, particularly anti-inflammatory drugs, should be avoided and frequent meals advised. Antacids leave the stomach remnant rapidly and tablets sucked hourly or continuously between meals overcome this difficulty. Aluminium
('Prodecin') tablets are useful. 'Nulacin' tablets are more palatable and lead to bowel looseness. If these measures fail to control the symp-
edore艇-line tablets ('Probabthine'), beginning with 15 mg three
daily and increasing the dose, particularly at bed-time, until mild side
effects do not occur, may be added. Medical treatment of an established stomal
stenosis is not often successful.

**Bilious vomiting**—Bitter fluid issues into the patient's mouth and nose
when vomits clear yellow fluid without food. Drug therapy is generally
ineffective and surgical reconstruction is the best remedy if symptoms are
enduring.

**Diarrhoea and Steatorrhoeas**—The most common complaint is of recur-
en episodes of watery diarrhoea lasting a day or two. Provided sensitivity
to other food is excluded, the most useful remedy is ecdine phosphate,
at 30 mg up to three times daily as necessary. Frank steatorrhoeas,
caused by bulky pale stools which float, is uncommon; treatment depends
largely on the mechanism suggested by full investigation.

**RATIONAL DEFICIENCIES:**

Patients treated by partial gastrectomy tend to show evidence of
stomachic deficiencies years later. They tend to be underweight, to become
anaemic and to develop bone disorders. Pulmonary tuberculosis may develop
quickly after this operation for assessment of their well-being, weight, haemog-
normin and serum alkaline phosphate levels, supplemented by other tests if
not normal or is known to have had tuberculosis. A regular iron supplement
is indicated for most patients, especially younger women. Some clini-
cians also advise other regular supplements.

**Weight loss**—Many patients are below their optimum weight after partial
gastrectomy. Usually the weight loss is due to lack of appetite or an inability
to take full meals. Patients should be encouraged to take as normal a diet as
possible; maintaining their daily calorie intake by eating frequently if the size
of meals has to be limited. Treatment of specific symptoms may enable the size
of meals to be increased. Though a mild degree of malabsorption sometimes contributes to the weight loss, pancreatic supplements or other measures designed to improve absorption are less successful than encouraging the patients to eat more.

Iron Deficiency—Progressive iron deficiency develops in most patients after gastrectomy, especially in women during the reproductive years. With the aim of preventing anaemia, a daily iron tablet at bed-time should be given to women before the menopause and a daily tablet to other patients for 3 months of each year. A tablet of Ferrous Sulphate (B.P.) 200 mg, is the first choice, but if this cannot be tolerated Ferrous Gluconate, 300 mg, or one of the chelated iron prepartations, such as Ferrous-glycine sulphate (‘plesmet’) may be acceptable. Iron chelates have the particular advantage after partial gastrectomy of being stable in alkaline solution, unlike ferrous sulphate which is stable only in acid solution. Suitable liquid preparations of iron are ferric ammonium citrate mixture or 'Plesmet' syrup. In exceptional cases it may be necessary to give iron parenterally as iron Dextran Injection B.P. (imferon) or iron sorbital injection (Jectofer).

Vitamin B12 Deficiency—Though serum levels of B12 often fall below normal (150ug/ml) after partial gastrectomy they rarely fall to the levels seen in established pernicious anaemia less than 100ug/ml). Impaired absorption of the vitamin is usually associated with gastric atrophy and decreased secretion of intrinsic factor. Absorption may improve with iron therapy. Occasionally, Vitamin B12 deficiency is due to bacterial colonisation of the small intestine.

A patient who develops Vitamin B12 deficiency requires monthly injections of cyanocobalamin, 100 mcg, or two monthly injection of hydroxycobalamin, 1000mcg for the rest of his life. There is evidence that treatment of patients with low serum Vitamin B12 levels, but no anaemia, improves their appetite and sense of well-being.

Folic Acid—A deficiency of folic acid after partial gastrectomy does occur but rarely causes anaemia. Folic acid deficiency is often associated with Vitamin B12 deficiency and folic acid should not be given alone unless the serum B12 leve is normal.
Metabolic Bone Disease—Frank osteomalacia with bone pain and pseudo-fractures occurs in small proportion of patients after partial gastrectomy. Evidence of a symptomless disorder of bone metabolism shown radiologically or biochemically is common. The serum alkaline phosphatase can be used as a regular screening test for osteomalacia and patients with a raised value should be investigated further. Some published reports suggest that osteomalacia after partial gastrectomy responds well to small doses of Vitamin D within the physiological range, but larger doses are usually needed with close biochemical control as described previously in Prescriber's Journal. (1966,6,7.) An increased calcium intake as milk 1 pint daily or cheese should also be advised.

DOCTOR

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