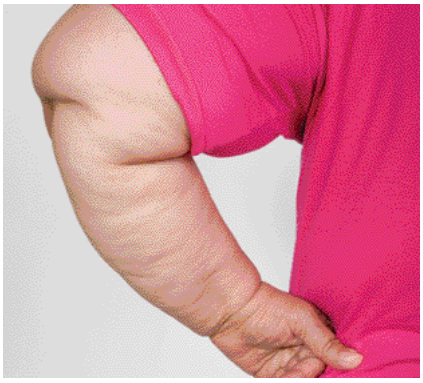
A middle-aged woman with morbid obesity – how to treat?



Commentary by **SHARON MARKS** MB BS, FRACP

An individual approach should be taken when treating morbidly obese patients, with multidisciplinary input.

Case scenario

Shirley is 41 years of age and has presented in despair about her huge weight gain since the birth of her sixth child, who is now 10 years old. She is 165 cm tall and weighs 179 kg. She is dyspnoeic on even minimal exertion, has painful knees and has recently developed a large inguinal hernia. She reports that she is uncomfortable in bed at night and sleeps poorly.

A full blood check finds no major problems, although she reports a very strong family history of diabetes (she is of South Sea Island descent). Shirley enjoys all the cooking she does for her large extended family and reports eating frequently and voraciously.

What strategies or treatments would have the best chance of success for a patient with this level of morbid obesity?

Commentary

This level of obesity (BMI of 65.7 kg/m^2) is referred to as extreme morbid obesity or super obese (BMI of more than 50 kg/m^2) and is difficult to treat. In most cases specialist intervention is required because many GP offices are not adequately equipped. Many patients (and their GPs) are unable to find scales to give an accurate weight, and hospital clinics need industrial type scales. (Some patients use weighbridges to weigh themselves.) Waiting room chairs as well as examination couches need to be able to support extremes of body weight.

The problems for this particular patient are not so much the metabolic disorders that are usually connected with obesity, but more the physical effects of her extreme body weight hindering mobility through breathlessness and joint problems. However, Shirley's family history suggests an increased risk of diabetes. She needs initial rapid and substantial weight loss prior to the initiation of an exercise routine. Starting exercise too early can lead to further joint damage and thus limit ongoing weight maintenance.

It is important to exclude any other factors that may be contributing to immobility, such as obstructive sleep apnoea, which is commonly seen in this group of patients. A sleep study is essential, particularly if excessive tiredness limits weight loss attempts or increases snacking behaviour. Nightly use of a continuous positive airway pressure pump should be considered if the patient has periods of hypoxaemia overnight or if the obstructive sleep apnoea is considered to be moderate to severe.

Another issue to consider is the medications the patient is taking. Diabetic medications such as insulin, sulfonylureas and glitazones can contribute to increasing body weight and may need to be altered or ceased. Other medications, particularly high-dose corticosteroids and some of the antipsychotic and antiepileptic treatments, can markedly increase appetite. Although the patient in this scenario is taking no medications, she is the exception rather than the rule.

Patients should also be assessed for depression and obsessive–compulsive behaviour as these conditions can contribute to increased snacking behaviour.

Treatment

The energy required for initial weight loss in this situation usually needs to be achieved by calorie restriction rather than by increasing physical activity. More substantial weight loss can be achieved and maintained by introducing a very-low-calorie diet. Once weight loss (even a small amount) has occurred, increased incidental activity such as walking can help potentiate further weight loss. Surgical intervention may give the best outcome for patients who have little chance of long-term maintenance.

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Medications

Some of the selective serotonin reuptake inhibitors (SSRIs; e.g. fluoxetine and sertraline) and some of the serotonin and noradrenaline reuptake inhibitors (SNRIs; e.g. duloxetine and reboxetine) used to treat depressive and obsessive–compulsive disorders have effects on satiety. The balance between increased satiety and overstimulation (insomnia and anxiety) needs to be found. These medications are not weight-loss drugs in their own right (and are not TGA approved for the management of obesity) but they can be helpful if a patient is demotivated and struggling with frustration about their weight. It should also be noted that many patients find long-term diets to be very depriving and actually show signs of depression and anger if food is restricted. These patients benefit from being 'primed' prior to altering their food intake.

Until recently it was possible to use sibutramine to induce satiety and help patients eat smaller portions while maintaining a higher metabolic rate. However, sibutramine was withdrawn from sale in mid-October 2010, and is no longer an option. The recently published Scout study showed an increased risk of non-fatal cardiac events in high-risk patients, most of whom were treated 'off-licence'.[1] Most of the patients recruited had type 2 diabetes and had known cardiovascular disease with either a previous myocardial infarction or episodes of angina and so were at high risk of recurrent cardiac events. The weight loss achieved in the study group did not meet the minimum (5% of initial body weight) set by the FDA for a weight loss product. However, sibutramine's efficacy and safety in a low-risk population was not evaluated.

In some individuals sibutramine was an effective medication that enabled greater adherence to a long-term diet, and in patients with morbid obesity it was possible to see significant weight losses in 'responders', although not in all cases. There is very little to use in its place as, apart from orlistat (discussed later), the only other drug approved by the TGA for the management of obesity is phentermine. This medication has been around for many years and has not undergone a similar rigorous study to prove efficacy and safety in this group of patients. It is approved only for short-term weight loss (less than three months) and has a very limited role in the management of extreme morbid obesity, which requires a long-term approach.

Orlistat is a lipase inhibitor that may be of some benefit in producing a weight loss effect as it reduces the absorption of about 30% of ingested dietary fat. In the 'diet-naïve' patient, who may not have a good comprehension of the fat content of food, it can help identify high-fat foods. The medication causes diarrhoea, abdominal pain and oil incontinence if a high-fat diet is consumed, thus encouraging adherence to a low-fat diet.

Orlistat may help commence the weight loss process but is unlikely to cause substantial weight loss (i.e. of more than 12 to 20 kg) in this group of patients. It may also have a place in the ongoing management of obesity because it can be used intermittently and has few side effects other than the effect of the drug to cause fat malabsorption. Supplementation with fat-soluble vitamins is not usually required unless the patient has a nutrient-poor diet overall. The cost of this over-the-counter treatment, about $120 for a packet of 84 capsules (one month's supply) or $70 for 42 capsules, needs to be placed in perspective with the outcome of the intervention. It is not available on the PBS but is available on the RPBS on authority for a once per lifetime treatment of obesity (BMI of 30 kg/m^2 or greater with specified comorbidities, including type 2 diabetes, or BMI of 35 kg/m^2 or greater without associated problems).

Diet

In patients with extreme morbid obesity, an energy restricted diet should be used in the first instance. Some patients do respond to a well-balanced, low-fat, calorie-reduced diet, particularly if satiety is increased. Thus, initial substantial weight loss can be seen with the use of low glycaemic foods and regular meal times plus the altering of other factors such as tiredness (related to obstructive sleep apnoea) or medications causing increased appetite. The assistance of a qualified dietitian can be of great benefit, and weight losses of up to about 20 kg can occur fairly rapidly using a food-based dietary approach.

In patients who are unable to modify their food intake because of excessive appetite or uncontrollable snacking behaviour, a very-low-calorie diet (VLCD) program can achieve an energy deficit even in those with extreme immobility. Once weight loss has occurred, the patient can become more mobile as joint pain and obstructive sleep apnoea benefit greatly from relatively small weight losses. A VLCD program (a diet of 800 calories [about 3350 kJ] per day or less) can be expected to achieve a weight loss of 15 to 30 kg in the first three months, with ongoing weight loss if the intensive program is continued.

Patients need blood tests including liver and renal function testing as well as a lipid profile and diabetes screening before starting a ketogenic program. Other investigations should include thyroid function test and a full blood count as well as iron studies. Medications such as insulin, sulfonylureas and glitazones may need to be adjusted or ceased during the weight loss phase to avoid episodes of hypoglycaemia, which may prevent the patient adhering to the strict ketone-inducing regimen. Blood pressure medications may also need to be reduced to avoid hypotension. If a diuretic is being used, electrolytes should be monitored on a regular basis as weight loss occurs.

I encourage all patients to follow the intensive regimen using the VLCD as a complete three-meal per day replacement for at least the first two weeks. During this initial phase, only a large bowl of steamed

low-starch vegetables is allowed in addition to the three meal replacements. Once ketone bodies are produced, appetite usually reduces dramatically, which enables the continuation of the intensive program (i.e. three meals per day) for at least three months. Some people are able to continue further, particularly if motivated by initial weight loss.

A gradual reintroduction of a low-fat and carbohydrate-reduced diet together with increasing exercise tolerance helps with ongoing weight maintenance. It is not unusual to see some weight regain when normal meals are introduced as the low carbohydrate content of the intensive phase contributes to an early diuresis. It is almost inevitable that some fluid regain will occur and so it helps if the patient is prewarned. Weight maintenance needs to be encouraged although there should be a low threshold to returning to the intensive phase (replacing three meals a day) if needed. Patients need to be encouraged to be proactive with regard to weight regain and not see it as a failure of a particular program.

Regular follow up is essential during the VLCD program. Other health professionals, such as clinical psychologists, dietitians and exercise physiologists, can help lighten the load as it is fairly time-intensive to monitor these patients. A multidisciplinary team approach is of great value with regard to goal setting and provides useful feedback as many patients with extreme morbid obesity cannot weigh themselves at home or be weighed at the local doctor's surgery.

Surgery

For some patients, the task of initiating and then continuing weight loss is overwhelming. Those with severe sleep apnoea (and associated tiredness) as well as those with debilitating joint disease may achieve initial weight loss but have little chance of maintaining the loss in the long term. A surgical intervention may give the best outcome in these patients.

Laparoscopic gastric banding has become the most common bariatric surgery procedure in Australia as it is relatively noninvasive and adjustable and provides a long-term weight maintenance strategy. Other options include the gastric sleeve procedure and the Roux-en-Y gastric bypass. These procedures have their own complications, including risk of nutritional inadequacy and wound breakdown, but their suitability must be assessed in the light of the severity of the obesity and its complications. For instance, a patient with an insatiable appetite or a 'sweet tooth' may be a poor candidate for a lap band, which requires food restriction. These patients may take in excess energy in the form of frequent small portions or by drinking high-calorie drinks that may pass around the band. Gastric bypass, which causes malabsorption by reducing the absorptive area of the small bowel, may be the best option to achieve significant weight loss even though life-long monitoring of nutritional indices is required.

Generally, any intervention will be most successful if it reduces appetite and increases satiety. The gastric sleeve procedure is thought to achieve this by removing the portion of the stomach that produces ghrelin, the hormone that stimulates appetite. Long-term data is not yet available for this procedure. With the lap band, however, weight losses of more than 50% of excess body weight have been maintained over a five-year period. Again, patients who have had lap bands need lifelong monitoring to ensure ongoing compliance and weight maintenance.

Summary

Successful treatment of patients with extreme morbid obesity is very complex. Patients vary greatly in their expectations and in their physical ability. It is imperative that an individual approach is taken with as much input from a multidisciplinary team as possible. Often the simple problem of weighing a patient who is more than 150 kg means the treatment cannot be undertaken by the local doctor alone. Access to public hospital bariatric clinics is severely limited, with waiting lists of up to 12 months for initial assessment. The opportunity to obtain a lap band or gastric bypass procedure is similarly problematic, with even longer waiting lists. Those patients with private health insurance fare better although the out-of pocket expenses are sometimes prohibitive. Although there is much discussion about the obesity epidemic and the need for better bariatric assessment clinics with greater access to surgery, very little has changed in this regard over the past 10 years.

For the individual patient presenting at this level of obesity, the first interaction with a doctor will often dictate the long-term outcome. First attempts at long-term weight loss and maintenance are often unsuccessful, and the doctor needs to avoid expressing disappointment because it will only confirm the patient's belief that the problem is insurmountable. A positive approach, balanced by a clear understanding of the physical and emotional barriers inherent in patients with extreme morbid obesity, will at least facilitate compliance. Obviously the prevention of weight gain in at-risk patients is a vital component as it is easier to treat obesity in a mobile patient than in one unable to be active due to osteoarthritis, breathlessness or obstructive sleep apnoea. MT

Reference

1. James WPT, Caterson ID, Coutinho W, et al.; for the SCOUT Investigators. Effect of sibutramine on cardiovascular outcomes in overweight and obese subjects. N Engl J Med 2010; 363: 905-917.

COMPETING INTERESTS: Dr Marks has been a member of medical advisory boards for Optifast, sibutramine and orlistat and has been involved in clinical trials of these products. She has also received honoraria from Nestle, Abbott and Roche for talks on obesity management.