Management of bariatric patients beyond the scalpel

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Background

Obesity management in general practice sometimes involves referral of patients for bariatric surgery. Integral to the success of long-term weight loss maintenance is supporting the patient's psychological, nutritional and exercise needs.

Objectives

This article is written to equip general practitioners (GPs) to manage the comprehensive needs, before and after bariatric surgery, of patients who are obese.

Discussion

The number of patients undergoing bariatric surgery in Australia has increased significantly in the past few years. Pre-operative and postoperative management of this intervention presents a challenge for GPs. In this article we provide guidance around psychological, nutritional and exercise interventions, to equip GPs in managing patients who are obese. Access to allied health providers is not always available for patients, so this article is co-written with allied health colleagues who share their expertise as a resource for GPs.

Obesity, as with all chronic diseases, is best managed with a comprehensive team approach.[1] For some patients, management of obesity may involve referral for bariatric surgery.[2] In Australia, the number of bariatric procedures has increased from 9300 in 2005–06 to 22,700 in 2014–15.[3] This presents a challenge for general practitioners (GPs) who manage patients before and after surgery. In a recent article in *Australian Family Physician*, Lee and Dixon outlined the role of GPs in supporting and managing bariatric surgery patients.[4] The aim of our article is to equip GPs in that role by providing specific advice around psychological, nutritional and exercise interventions.

Bariatric and metabolic surgery is performed for various reasons, including the following:

- to achieve improvement or remission in patients with type 2 diabetes
- for sustained long-term weight loss
- to reduce the risk of premature cardiovascular mortality and some cancers
- to reduce chronic inflammation associated with visceral/central obesity
- to improve health related quality of life and psychosocial aspects important to patients and their families.[5,6]

Dramatic lifestyle changes may be needed after bariatric surgery and without these the procedure may not succeed;[7] patients should view surgery as a tool not a cure. GPs are ideally placed to help patients understand this and to access experts (in the form of allied health professionals) who can help them to wield this tool effectively.

After surgery, the role of the surgeon diminishes and the multidisciplinary team, often coordinated by the GP, takes over patient management. However, in many places around Australia there is limited access to allied healthcare; hence, this article – written in collaboration with a psychologist, an exercise physiologist and a dietitian – summarises some key points and insights that they have found to be of benefit to their bariatric patients. 'The Change Program', developed and piloted by a team of GPs through the Australian National University, successfully showed that GPs are willing and able to holistically assist patients who are obese.[8] We hope this article provides a helpful, practical resource for GPs who want to address their patients' psychological, exercise and nutritional needs.

Psychology

Successful weight loss is more complicated than managing caloric intake and energy expenditure. While these two factors are important, we now realise that patients' psychological state plays a pivotal part in behaviour change and long-term maintenance.[9]

There is a general perception that behaviour and lifestyle change is the patient's responsibility, yet even patients who are motivated and educated struggle with this. When patients continue to fail, their sense of shame and helplessness is reinforced. If available, a psychologist or psychiatrist is a critical team member,

who is trained to assist with uncovering obstacles and addressing them in evidence-based ways, and equipping patients with lifelong psychological skills.[10] GPs can also be highly effective by helping patients to have realistic expectations and goals, identifying and addressing 'road blocks', and equipping them with skills to move forward.

Box 1. Potential disordered eating behaviours

- Emotional eating, stress eating, non-hungry eating, reward eating, habitual eating, 'food and I' eating
- Eating associated with environment, social situations, cultural pressures, quick and easy food choice, impulsive eating
- The 'diet mentality' reinforced by repetitive unhelpful self-talk
- Chronic hypercaloric eating behaviour or food cravings
- Choosing food as a means of meeting personal needs

Realistic expectations and goals

The expectations of medical providers may be different from those of the patient. Healthcare providers often focus on achieving measurable physiological outcomes, such as reduction in blood pressure or improved diabetes control. The patient, however, may have additional, and sometimes unrealistic, expectations:

- of the outcome (in terms of weight loss and what the weight loss will achieve for them beyond the physiological improvements in health)
- of themselves in implementing the process (eg fear of failure [again] or judgement by others]
- in the belief that 'all I need to do is eat less'.

GPs should have this conversation with their patients before they commit to surgery, and ensure patients have an evidence-based, realistic understanding of what bariatric surgery can achieve for them.

Addressing road blocks to weight loss and to sustainable weight management

Some behaviours have an impact on the initial weight-loss phase, whereas others affect maintenance. Remembering that maintenance is always a work in progress, psychological input should explore whether any of the following apply:

- destructive cognitive, emotional and behavioural cycles of dieting
- history of disordered eating behaviours (Box 1)
- sense of shame preventing them from seeking assistance ('I SHOULD be able to do this myself')
- poor coping strategies (including alcohol dependence)
- psychological impact of the past (eg abuse – sexual, emotional or verbal; or dieting since childhood)
- relationship issues.

Equipping the patient with suitable skills

Even the most highly motivated patients need to understand possible psychological obstacles and be reassured of the skills they already possess. Successful weight management, therefore, includes elements such as:

- implementing personal change management tactics
- strategic planning
- creating self-awareness
- stress management
- dealing with negative (unhelpful) thought patterns
- building on personal attributes
- developing appropriate coping strategies
- developing normal eating behaviour
- dealing with underlying psychological issues integrated with disordered eating behaviour
- adjusting to being slimmer (especially for the patient who has not been slim for very long).

Exercise

Exercise for bariatric surgery patients is often neglected by the patient before and after surgery. Maintaining a healthy, long-term exercise regime is vital to their general health, and has benefits beyond weight loss alone.[11] Australian physical activity guidelines for adults aged 18–64 years are clearly documented:[12]

- Be active on most, preferably all, days every week.
- Accumulate 150–300 minutes of moderate intensity or 75–150 minutes of vigorous intensity, or an equivalent combination of both, each week.
- Do muscle-strengthening activities on at least two days each week.

However, there are many factors beyond these guidelines to consider before moving a bariatric surgery patient onto an exercise plan. For patients who are obese, there are restrictions on certain exercises that can be done safely, so initial screening and then modification of a program by an exercise physiologist or qualified personal trainer is preferable, where available. Patients need a program they can physically adhere to; therefore, previous injuries and physical limitations must be considered and recorded.

Base measurements and assessment

It is important to test and measure a number of parameters, including:

- weight
- girth (chest, waist, hips)
- body fat percentage
- lean muscle mass.

On the basis of these measurements, the exercise physiologist will ensure that the program is suitable for an individual patient. Poorly tailored programs risk non-compliance or injury to the patient, thereby nullifying any benefits of exercise. As fitness increases and health improves, these indicators should be monitored to facilitate progression in the training plan.

Timing of program

Setting up a patient with an exercise plan before surgery may help to reduce some weight, and increase general

fitness and the likelihood of enhanced speed of recovery after surgery. It also sets up good habits to continue once the patient recovers.

Type of program

A program incorporating the following is ideal in assisting with long-term maintenance of weight loss, cardiovascular fitness and general wellbeing:

- Cardiovascular/aerobic exercise: 75% low–moderate intensity (40–60 minutes duration; perceived exhaustion = 5/10), 25% high-intensity (20–40 minutes duration; perceived exhaustion = 7/10)[13]
- Resistance training sessions (twice a week) – weight loaded to gain muscle strength.

It is vital to prescribe a program according to what the patient can actually achieve. When prescribing cardiovascular exercise, use exercises or machines that measure output (certain time at certain pace, heart rate, calories burnt: eg timed walks, runs, cycling, swimming) to ensure the patient is working at the required intensity (steady-state low–moderate or high intensity: eg sprinting, interval training).

When prescribing resistance training, aim for a program that is performed at least twice a week, with simple compound exercises involving as much of the body as possible. Exercises such as squats, pulldown/pull-up, chest pressing or overhead pressing, and core stability should make up the basis of the program to target the whole body. Initially, repetition ranges of 10–15 at a controlled pace for two to three sets will be sufficient to cause muscular adaptation and progression.

Each patient will present with different challenges and issues,[14] but it is essential to find an exercise program that the patient can maintain over the long term.

Diet

Pre-operative dietary requirements

Once a surgery date is known, advise patients to start limiting or avoiding sugar, processed foods and fatty foods. This enables a smoother transition onto the pre-operative diet and helps develop a focus on nutrition rather than calories.

In the two to four weeks prior to surgery, patients will commence a very low energy diet (VLED), aiming to decrease visceral fat and the size of the fatty liver. VLEDs commonly use approved meal replacement shakes. Patients should have three to four VLED products along with low-carbohydrate–low-kilojoule foods[15] and at least 2 L of water per day. The VLED may vary depending on patients' dietary requirements, body mass index and surgical team preferences.

Most patients find the first three days the most difficult as the body moves into a state of ketosis. Support, encouragement and reassurance are required during this stage. Remind patients that following a pre-operative diet helps facilitate the surgical procedure.

Postoperative dietary requirements

For one to eight weeks postoperatively, patients should aim to maintain adequate hydration, nutrients and protein to support healing, minimise loss of lean muscle mass, and progressively return to 'normal' food[15] (Table 1). Patients' intakes can vary greatly from one-quarter to half a cup of food during the transition stages. Some foods are more difficult to tolerate than others, especially breads and meats. Meal preparation, structured meals and education on nutritionally adequate meals are vital during the transition stages. Most dietary problems that patients experience postoperatively have a readily identifiable cause and simple interventions will help (Table 2).

Macronutrient and micronutrient deficiencies

Adequate protein intake (60–120 g/day) is difficult to achieve in the first few months, so a protein supplement can be beneficial (eg whey protein isolate powder or tasteless beef collagen – a neutral flavour is most convenient as it can be added to both sweet and savoury dishes).

Nutrient deficiencies after bariatric surgery are usually due to decreased quantity or quality of food. Bariatric surgery may decrease the production of intrinsic factor and hydrochloric acid, thereby adversely affecting absorption of vitamin B12 and iron. Depending on the type of bariatric surgery, patients may also have deficiencies in thiamine, folate, calcium, zinc, copper and the fat soluble vitamins (A, D, E, K). Initial screening and subsequent ongoing monitoring for these micronutrient deficiencies is recommended. In the first year, baseline tests can be repeated every three to six months, then annually thereafter.[16]

For the first few weeks postoperatively it is preferable for patients to have a specialised bariatric chewable or liquid multivitamin in place of tablet or capsule forms. Chewable calcium citrate is also recommended. In addition, patients may need a prescriptive regimen based on their blood test results. A lifelong multivitamin is recommended after surgery.[17] Probiotics and/or kefir yogurt may be beneficial for bariatric surgery patients as they may improve B12 availability and may result in more successful weight loss.[18]

Pregnancy after bariatric surgery poses an additional risk of deficiencies, particularly deficiencies in vitamins A, D and B12, and calcium, iron, selenium, zinc and copper. Frequent monitoring and adjustment of diet and supplements is recommended to avoid malnutrition.[19]

Longer term recommendations

The focus for bariatric surgery patients needs to be 'quality over quantity' when it comes to food choices. A Mediterranean-style diet is beneficial in the long term. The diet replaces salt with herbs and spices for flavoring, limits red meat consumption while emphasising white meats, fish, plant-derived fats and oils, and fruit and vegetables.

Conclusion

Comprehensively addressing the psychological, exercise and nutritional

Table 1. Expected progression in the diet

Period	Diet	Comments
Immediately postoperative	Clear fluids then free fluids	Progressed in hospital
After one week	Puree diet	Commenced after review by surgeon or dietician
Weeks three to four	Soft-moist diet	May change to soft diet earlier if tolerated
Weeks four to five	Soft diet	May need longer in this stage
Weeks six and longer	Normal textured food	Normal for a few foods to not be agreeable

Table 2. Troubleshooting dietary problems patients may encounter post-operatively

Problem/symptoms	Possible cause	Intervention
Reflux, food regurgitation, vomiting, abdominal pain*, feeling faint or nauseous	Failing to eat slowly, chew food thoroughly, reduce portion sizes and limit foods with high fat or sugar content	Address eating behavior (need to adjust to smaller stomach pouch – eg leave 20–30 minute window before or after a meal, before sipping on fluids)
Persistently feeling hungry	Silent reflux or inadequate protein intake	Treat reflux (lifestyle modification, medication if needed). Increase protein intake
Constipation	Inadequate fibre and/or fluid intake	Fibre supplement (eg wheat dextrin, and/or laxatives)
Diarrhoea	Lactose intolerance, dumping or inadequate fibre intake	Try limiting lactose or adding soluble fibre Ensure adequate protein and vegetables. Separate fluids and solids, avoid refined/processed sugars

**Abdominal pain should be assessed and investigated in the context of the type of bariatric surgery the patient has undergone*

needs of patients before and after bariatric surgery is recommended to help them lose weight and achieve their goals. Involvement of allied health professionals is ideal where available, but if not it is important for GPs to have some proficiency in counselling, and providing exercise and dietary recommendations as the needs arise.

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Competing interests: None.

Provenance and peer review: Not commissioned, externally peer reviewed.

Acknowledgements

We thank Associate Professor Jane Smith, Bond University, for proofreading and editorial advice.

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