

Treating severe obesity: morbid weights and morbid waits

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Lifestyle modification, including diet, exercise and behavioural modification, are still widely considered the cornerstone of obesity treatment; however, these modifications result in modest weight loss.³ Even patients who are preselected to maximize the success of weight loss have difficulty maintaining long-term weight reduction of more than a few percent of their body weight.⁵ Antiobesity drug therapy leads to 3–5 kg of additional weight loss, but drugs are expensive and poorly tolerated, and persistence with therapy is less than 2% at 2 years.⁶

In contrast with lifestyle modification and drug therapy, bariatric surgery results in 33% weight reduction in the first several years⁷ and 14%–25% after 10 years.⁸ Surgery is currently indicated for patients with severe obesity or medically complicated moderate obesity who have had unsuccessful attempts at lifestyle modification.³ Both moderate and severe obesity are debilitating, costly and ultimately lethal.³ Extreme obesity confers an increased risk for a number of medical conditions, including an 18-fold higher risk of type 2 diabetes mellitus, a 7-fold higher risk of hypertension and a 2-fold increased risk of all-cause mortality.⁴

A meta-analysis of primarily observational data (136 studies involving 22 094 patients) found that surgery is associated with remission of type 2 diabetes in 77% of patients, hypertension in 66% and sleep apnea in 88%.⁷ One observational study that included 4047 Swedish patients found that surgery reduced 15-year mortality by 27% (hazard ratio 0.73; 95% confidence interval 0.56–0.95).⁸ Observational data also shows improvements in quality of life after surgery, including better physical function, sexual function, happiness, self-image and employability.⁹

Bariatric surgery is not without risks. When all types of bariatric operations are considered, there is a 10% chance of perioperative morbidity, which includes cardiorespiratory failure, venous thromboembolism, wound infections and anastomotic leaks.¹⁰ These complications contribute to a 0.1%–2% perioperative mortality rate.¹⁰ Over the long term, nearly 20% of patients who undergo all types of bariatric surgery develop chronic gastrointestinal symptoms such as vomiting and reflux.¹⁰ Gastric bypass can lead to nutritional and electrolyte abnormalities in 17% of patients, while gastric bands may slip or erode, requiring reoperation in 10% of patients.^{7,10} As a direct consequence of successful surgery, 30%–40% of patients require plastic surgery to remove excess skin after weight is lost.

The economic impact of severe obesity is substantial. In the United States, individuals with severe obesity represent

Key points

- Bariatric surgery is indicated for medically refractory patients with severe obesity or with moderate obesity plus a major medical comorbidity.
- Bariatric surgery substantially improves obesity-related comorbidities, survival and quality of life, but carries a significant risk of perioperative death and a 20% chance of chronic gastrointestinal symptoms.
- Access to bariatric surgery is often limited.
- In Canada, the demand exceeds capacity by nearly 600-fold.
- Governments and administrators need to recognize the immense need that exists.

only 3% of the employed population, yet they account for 21% of all health care costs associated with obesity.⁴ Both the direct and indirect economic impact of severe obesity would be expected to improve postoperatively as comorbidities decline, quality of life improves and gainful employment is attained. However, at least in the short term after surgery, direct health care costs increase as complications develop or elective procedures made possible by the reduced weight are performed. Therefore, the net effect of bariatric surgery on long-term costs is unknown.

Although further characterization of the benefits, risks and costs of bariatric surgery is required, surgery is the best treatment currently available for suitable candidates. Despite a 14-fold increase in the annual number of bariatric surgeries performed in Canada (excluding Quebec) between 2000 and 2003 to over 1100 operations per year,¹¹ the wait times are unacceptably high and access is severely restricted. Long wait-lists and limited accessibility are not unique to Canada. A similar situation exists in other countries, both with privately and publicly funded health care systems.^{12,13} In the United States, coverage for bariatric surgery within the publicly funded Medicare and Medicaid systems varied by state until 2006, when the types of procedures covered and the indications for surgery were expanded to reflect current practice. However, there is no national standard for private insurance coverage in the US, therefore coverage varies widely among states and individual insurance plans.

The low number of bariatric procedures performed in Canada contrasts sharply with the number of individuals

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potentially eligible for surgery (i.e., patients with severe obesity or medically complicated moderate obesity). Medical complications are present in about 60% of patients with moderate obesity.¹⁴ In 2004, 5.1% of Canadians were moderately obese and 2.7% were severely obese.¹ Therefore, 5.8% (60% of 5.1%, plus 2.7%) of Canadians would have potentially been eligible for bariatric surgery. Assuming that 2000 surgeries were performed in 2004 (conservatively adjusted for the lack of data from Quebec and time increment from 2003) and an adult population of 20 million, demand for bariatric surgery would have outstripped the theoretical capacity by nearly 600-fold.

A recent report concluded that the annual number of surgeries in Ontario will need to increase from 500 to 3500 merely to begin to meet current demand.¹⁵ In 2004/05, Ontario spent over \$8.2 million to have 225 surgeries performed in the US, at more than double the cost of performing the same procedures in Canada.¹⁵ Advocacy groups have petitioned the Ontario government for improved access to surgery. In March 2008, Ontario announced \$75 million in funding to meet the increased demand. As of January 2008, in our regional population-based medical and surgical obesity program, 2470 patients were waiting for a clinic appointment for an initial assessment. This represents a wait time of 4.3 years and a 70% increase in the waiting period over 1 year. We estimate that over half of these patients are initially interested in surgery. Because of extended wait times, patients may choose to pursue privately funded procedures, at an approximate cost of \$17 000 per procedure.¹⁵

Whether surgery is equally accessible to all is another important question. In the US, 85%–90% of surgeries are performed in white women with higher income levels, despite the fact that severe obesity is as or more likely to afflict ethnic minorities and those of lower socio-economic status.^{16,17} Data examining access for patients with psychosocial dysfunction are lacking. Compared with the general population, surgical candidates are more likely to exhibit depression, anxiety and impaired self-esteem.⁴ Up to one-third have been victims of sexual abuse as children.⁴ In our program, 60% of patients approved for surgery have a history of mental illness and 11% are unemployed or receiving social assistance. It is our experience that the baseline quality of life and socio-economic status of these patients may substantially deteriorate while waiting for treatment.

Not every patient who meets the current criteria for bariatric surgery is an ideal candidate. However, governments and administrators of health care systems need to critically examine gaps in care delivery and increase funding accordingly. A marked increase in the private delivery of bariatric surgery in Canada, as it currently exists, is unlikely to be a viable care model. Private centres often select patients without comorbidities for surgery, specialize in a single procedure or device, are ill-equipped to deal with complications and revisions, and are

poorly positioned to provide life-long follow-up (e.g., for repeat gastric band adjustments). Therefore, funding is best allocated toward creating new programs and enhancing the capacity of existing programs for bariatric surgery that provide comprehensive, continuing care. To optimally care for patients struggling with the immense burden associated with severe obesity, we must ensure that they are able to access state-of-the-art standards of care in a timely and equitable fashion.

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