

## Surgical treatment of obesity

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### Summary

Bariatric surgery is an effective treatment for obesity. Bariatric surgery is less invasive and shows remarkable weight loss in most of the patients. This surgery is also effective for those patients suffered with certain diseases such as diabetes and hypertension. In bariatric surgery, we use two procedures to minimize the weight of the body which are vertical banded gastroplasty and adjustable gastric banding. Bariatric surgery can causes long term weight loss but it requires greater attention of the surgeon.

**Keywords:** Bariatric surgery, adjustable gastric banding, vertical banded gastroplasty, implantable gastric stimulation.

### Introduction:

Obesity is a chronic disease without any cure.<sup>1-3</sup> Patients having obesity and related complications such as diabetes etc. can be recovered easily by using bariatric surgery.<sup>4</sup> Usually the range of weight for performance of surgery is to be at least 45 kg, over your ideal weight. The use of bariatric surgery has started from few previous years.<sup>5,6</sup> There are about 386 English language publications on bariatric surgery in humans.

### Bariatric Surgery

Mostly obese patients are mainly treated by less invasive procedure which is bariatric surgery.<sup>7</sup> By using bariatric surgery we can prevent the patients from some complications like tissue trauma, which is the main problem in case of open surgeries. Bariatric surgery includes purely gastric restrictive operations.<sup>8,9</sup>

### Purely Gastric Restrictive Operations

Purely gastric restrictive operations involve adjustable gastric banding and vertical banded gastroplasty. These operations can cause weight loss by reducing the capacity of the stomach to store food and also by slowing the flow of ingested nutrients through the stomach.<sup>10,11,12</sup> These two procedures are:

### Vertical Banded Gastroplasty

Vertical banded gastroplasty is more widely used procedure for the treatment of obesity. In vertical banded gastroplasty, the stomach of the patient is stapled in order to reduce its capacity to accumulate food. And also a specific ring is inserted into the stomach in order to prevent the stomach from over stretching. When one eats only a small amount of food, the stomach becomes expanded, this produces a feeling of fullness. If someone continues to eat, it may cause nausea, vomiting or pain.<sup>13</sup> Finally it causes the termination of eating. Patient has to adapt his new restricted stomach and must reduce his food intake to prevent the complications. It may slowly cause vitamin and mineral deficiencies resulting in anemia or softening of bones. But after surgery the patient must consult with physician who is familiar with these complications. By using this surgery weight can be reduced about 25% of the initial weight.<sup>14,15</sup> After this surgery, a special diet is required to the patient in order to prevent nausea, vomiting and some other adverse effects. In order to make the surgery successful, long term changes in eating habits of the patients must take place.<sup>16</sup>

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### Adjustable Gastric Banding

Another useful method to reduce the weight of the body is adjustable gastric banding. In this procedure we place an adjustable band around the upper part of the stomach which reduces the size of the stomach and ultimately it reduces the capacity of the stomach to store or accumulate food.<sup>17,18</sup> In this way we can prevent the amount of food that can be eaten similar to the vertical banded gastroplasty.

The weight loss in adjustable gastric banding is similar to the weight loss in vertical banded gastroplasty, but this new technique is less invasive than the other banding procedures. The major advantage of this procedure is that the band is adjustable.<sup>19,20</sup>

### Implantable Gastric Stimulation

In this technique a device similar to heart pacemaker is implanted into the stomach of the patient by a surgeon.<sup>21</sup> Electrical stimulation will cause increase in the activity of the nervous system of the stomach, this increase in the activity of the nervous system produces a sense of fullness. But this procedure is less effective as compared to bariatric surgery.

### Eating After Bariatric Surgery

After bariatric surgery, only clear liquid diet is given to the patient such as fruit juices etc. This diet is continued until the gastrointestinal tract of the patient has recovered. In the next stage, a blended diet is given to the patient for at least two weeks.<sup>22,23</sup> Blended diet may include milk, cream of wheat, protein drinks, soup and mashed potatoes.

### Weight Loss

Purely gastric restrictive procedures cause decrease in the weight of the body of a patient.<sup>24</sup> According to a report from university of California, the weight loss after these procedures is

- Adjustable gastric banding - 35kg
- Vertical banded gastroplasty- 32kg

### Adverse effects

Adverse effects of these procedures are gastric dumping syndrome, leakage at surgical site,

pneumonia, infections etc. But these side effects can be reduced if these procedures are performed by experienced surgeons.

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