

A rational look at the apparent mess of bariatric surgery procedures and indications



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A few years ago, at the annual meeting of the American Society for Bariatric Surgery, someone presented an operation consisting of a standard gastric bypass with removal of the distal stomach, which, despite this, was named "gastric bypass". When I asked why the presenter was calling bypass a gastrectomy, he answered that it was for insurance reasons. An Italian surgeon frequently appears in magazines and TV broadcast presenting jejunoileal bypass as a totally innovative procedure. Not to mention the so-called "gastric pacing", which is still in use after it has been unequivocally demonstrated that it does not work at all.

Why such a mess? Why obesity surgeons seem only worried about "selling their product", not considering at all results and complications, and thus patients' health? Why do they lie shamelessly to their patients? Why do ethical committees allow them to do so?

The reasons, in my opinion, have to be searched in some peculiarities of the obese patient population, or, to say better, of how the obese patient population is considered by the "normal" population, and very often even by themselves. First of all, obesity is considered by the majority not to be a disease but a "condition", a condition that is anyway disturbing enough to push some of these people to ask for "any" solution. Therefore, surgeons do not feel guilty when they only try to make a deal out of them. Secondly, even when the condition is considered a disease, the obese is thought to be responsible of the condition or the disease itself. "If he/she ate as much as I do, he/she would be as slim as I am". "If, on the contrary, they search for an easier way, let us do them whatever, they are so many that the job will never be lacking". Another reason for lack of pity towards obese people is the fact that "normal" individuals know, and they are almost always right, that they will never become obese, while they will have the same probability as anybody else to be affected by a malignancy. Therefore, normal people keep all their sympathy for the patients with a disease that could hit anybody, includ-

ing themselves. Finally, but certainly not least, with all kind of surgical therapy becoming more and more technological, new devices are put on the market which have a budget to be used for promotion, and today, also in fields other than obesity, we do not buy what is more worthy, we buy what is better promoted. Unfortunately, due to the reasons above and the one below, this particularly applies to obesity surgery, when a marketing strategy to sell an ineffective device may very well consist of discrediting a currently performed effective operation by employing all mediatic ways for systematic slender on nonexisting severe complications, thus moving the competition on safety, and winning it by offering an absolutely safe device, whose effectiveness is not even mentioned. A strategy like this obviously costs a lot of money, which will anyway be well recovered by selling the new device to a lot of patients scared by the devastating consequences of the other operation. This kind of game, which is certainly not done in the interest of patients, is made very easy by the fact that the good operation which is destroyed does not entail the employment of any particular device, and thus does have any firm behind, with a budget for defence and promotion, or, to say better, for commercial competition. If we add to all the above facts and considerations the usual laziness of the obese people, who do not do anything to get better updated on treatment possibilities, and are substantially ready to accept anything, basing more on the seller pleasantness than on the sense what he is saying makes, all the answers to the above questions are given.

Therefore, anybody can conceive any new bariatric operation with no rationale, just in order to try something new, do it directly in humans with no animal experimentation, maybe publish it, and then abandon the new operation if it cannot be sold satisfactorily, and think of another new operation. Anybody can modify any already existing and maybe good operation, with no aim other than doing something new and maybe give his name to a new operation, and, if he is a good seller, find not only patients but also surgeons ready to follow him even without knowing the reason for that modification and what defect of the standard operation it was intended

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to correct. Above all, and worst of all, anybody can sell to obese patients whichever he wants of the many dozens of different operations either steadily existing or being conceived and abandoned day by day.

Could all this have been avoided? Maybe yes. Timing is the main determinant of individual as well as general histories, and, also in this case, it was just a matter of timing.

Let us first of all make clear once for all what the patients often forget, that is that the need of a lifelong disease is lifelong cure, and that, consequently, weight loss is not to be considered a result if it is not followed by an indefinite weight maintenance. Weight maintenance is then the only result, but very often patients forget it, a misunderstanding encouraged by the majority of bariatric surgeons, because the majority of bariatric surgeons offer weight loss, but not weight maintenance.

The main problem of the obese patient is the lack of control on his eating behavior. Therefore, the more a method for weight reduction requires patient's cooperation in terms of permanent modification of eating behavior, the greatest the probability of failure. That is why medical therapy almost invariably fails, while bariatric procedures aimed at reducing energy intestinal absorption almost invariably succeed. Between these two extremes, there is an endless list of methods which require more or less patients' cooperation, and thus have temporary results, lasting as long as the operation or the follow-up system works. So, the obvious question is: why not all of the bariatric surgeons, instead of a minority of them, use the energy absorption limiting operations, which are unanimously considered the most effective ones, and are in fact the only effective ones? The reason is simply a timing problem.

The first proposed operation for obesity treatment was actually an energy absorption reducing operation. It was called jejunoileal bypass (JIB, Fig. 1), it was introduced in the USA at the end of the years 60s, and about 100.000 operations were done during the years 70s. JIB consisted of a shortening of the small bowel, the segment being left in the alimentary continuity amounting to about 50 cm from the ligament of Treitz to the ileocecal valve. The idea was evidently childish, and it did not work. What are the problems with this operation, which is so technically easy that, as said above, somebody still uses it, at least in Italy, evidently taking enormous medico-legal risks. The immediately evident problem is the indiscriminate malabsorption (let us start using this originally American term, which is incorrect, as it express a negative connotation for what is on the contrary the desired mechanism of action of the operation, but has the advantage of synthesizing in one word an entire concept), leading to all types of deficiencies, aggravated by the fact that the enormous loss of bile acid and fatty acid in the colon causes a very heavy watery diarrhea. Another important problem is the presence of a very long blind loop, with the consequent bacterial

overgrowth. Besides local problems, such as bypass enteritis, bloating syndrome, intestinal pseudoobstruction, the auto-antibodies generated in the bypassed bowel, together with absorption of toxic bacterial products, cause polyarthrititis, kidney damage leading to renal failure, severe liver damage with acute steatonecrosis or cyrrosis and death. Gallstones and kidney stones are also included in the JIB complications.

However, the main problem of JIB is that it does not work, simply because it cannot work. The low of short bowel says that if the length of small bowel left in continuity is more than 60 cm the patient does not lose weight, while less than 40 cm are incompatible with life. If we consider that the impressive intestinal adaptive phenomena lead within one year to a more than ten-fold increase of absorption capacity, it is easy to understand that JIB, whatever are the intestinal lengths used, will never work.

The consequence of all the above fact was that JIB was abandoned, and malabsorption itself considered a non acceptable method for obesity treatment. Obesity surgery was thrown in the Middle Ages of that mixture of illusion, deception, ignorance, and frank cheat representing the so-called "gastric restriction", or to say better "food-limitation" procedures.

The concept was: to use an operation that, for a cer-

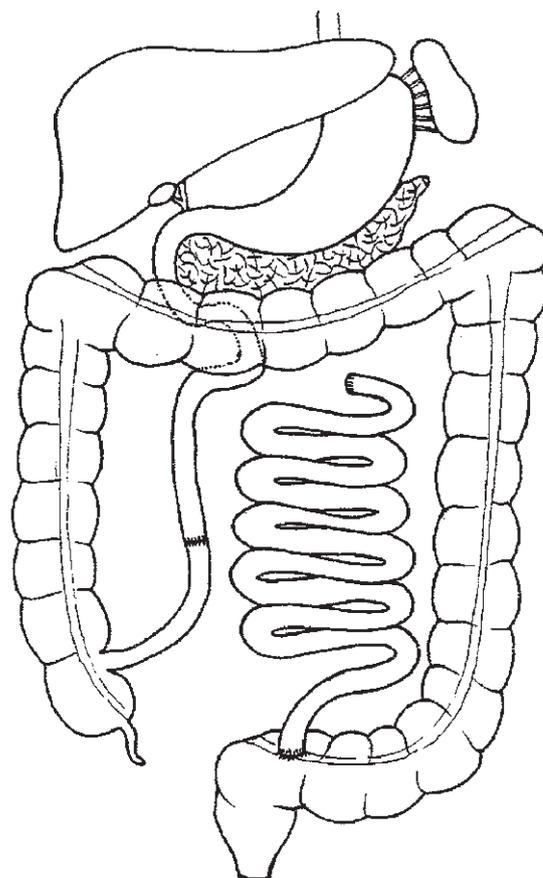


Fig. 1: Jejunioileal bypass (JIB).

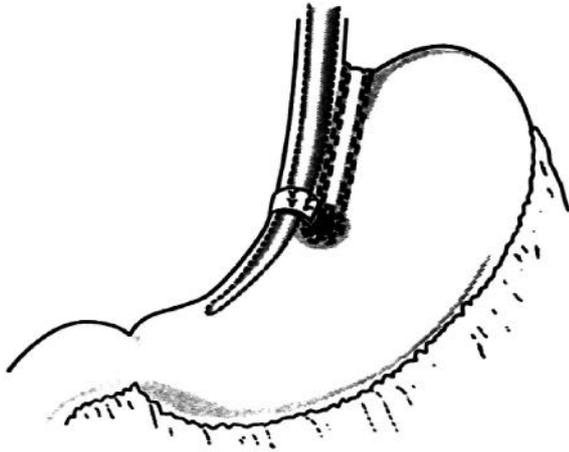


Fig. 2: Vertical banded gastroplasty (VBG).

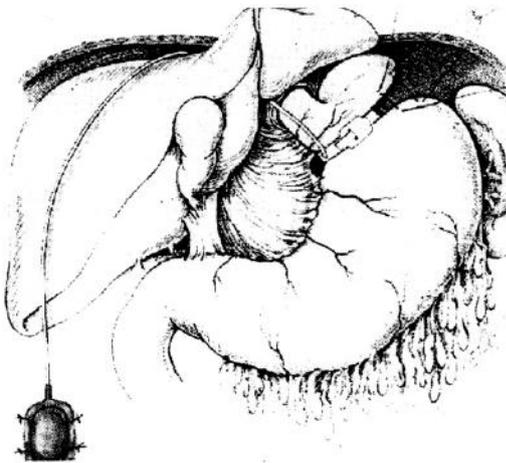


Fig. 3: Adjustable silicone gastric banding (ASGB).

tain time, prevents the patients from freely eating, in order to obtain, with the help of surgeon, nutritionist, dietitian, and psychologist support, a permanent modification of the eating behaviour which will survive the end of the operation functioning. The implements were the gastroplasty (VBG, Fig. 2), the adjustable silicone gastric banding (ASGB, Fig. 3), and the gastric bypass (GBP, Fig. 4). The first two operations simply consist of a mechanical obstacle to the ingestion of food, while the third one cause a variable degree of appetite reduction, along with a constant and long lasting early satiety. The average time of failure of these procedures depends on so many factors that it would be a waste of time to try to understand all of them. Generally, the failure is earlier with the ASGB and later with the GBP, with the VBG in between. Why all these operations fail? Essentially because all of them, in variable degree which is inversely proportional to the average life of the operation, need patient's cooperation, and the patient's cooperation lasts as long as the care of the above mentioned professionals lasts. Consequently, if one center does 100 operation per year, the above professionals will have to

take exactly the same care of a number of patients increasing by 100 units every year. Needless to say, the result is that, lifelong follow-up being impossible, sooner or later the patient will receive less and less care, and he will eventually fail.

Now, to understand how much life events depend on timing, let us consider that biliopancreatic diversion (BPD, Fig. 5) was conceived in 1973, that is less than ten years later than JIB. BPD consists of a distal gastrectomy (to prevent stomal ulcer) with reconstruction of the GI continuity by means of a very long Roux-en-Y, where the enteroenterostomy is placed 50 cm proximal to the ileocecal valve, and the gastroenterostomy at 250 cm. There is no blind loop, and, since the operation results in a limitation of intestinal absorption selective for fat and starch, the absorption of the other nutrient is essentially preserved. For the same reason, since the energy absorption can be reduced to zero without causing any problem for the patient, who normally absorbs water, electrolytes, vitamin and protein (with the necessity of iron, calcium and vitamin supplementations) the length of the common limb (from the enteroenterostomy to the ileocecal valve), where energy absorption is substantially confined, can be created of any length, such as to produce the desired energy absorption after the completion of intestinal adaptive changes. The energy absorption is a fixed maximum per day which remains constant indefinitely, so that the body weight has to reduce to the level which corresponds to that amount of daily energy absorption. Subsequently, since the body weight does not depend on the ingested energy but on the absorbed one, and since the energy absorption remains constant indefinitely, also the body weight remains constant indefinitely, independently of the energy intake of the operated subject, who is on lifelong free diet. Furthermore, thanks to powerful specific mechanisms, independent of the weight loss, BPD ensures permanent cure of all the major components of the metabolic syndrome (type 2 diabetes, hypercholesterolemia, hypertriglyceridemia hypertension) in the near totality of cases, without any medication and on totally free diet. BPD is today safely and effectively used for the treatment of type 2 diabetes also in lean subjects. The weight loss results show an absolutely flat curve up to thirty years, and the complications, especially the so-called protein malnutrition, after the initial period of human experimentation (essentially from the middle of the years 80s) have essentially disappeared. The only noticeable problem of BPD is the side effects caused by fermentation and putrefaction of food in the colon, consisting of foul smelling stools, bloating and flatulence, which can be controlled by neomycin, metronidazole, or pancreatic enzymes. BPD is today not only the most effective, but also the safest among the available bariatric operations. Since the weight maintenance is ensured by the operation, this makes very little time-consuming to follow-up many thousands of operated subjects.

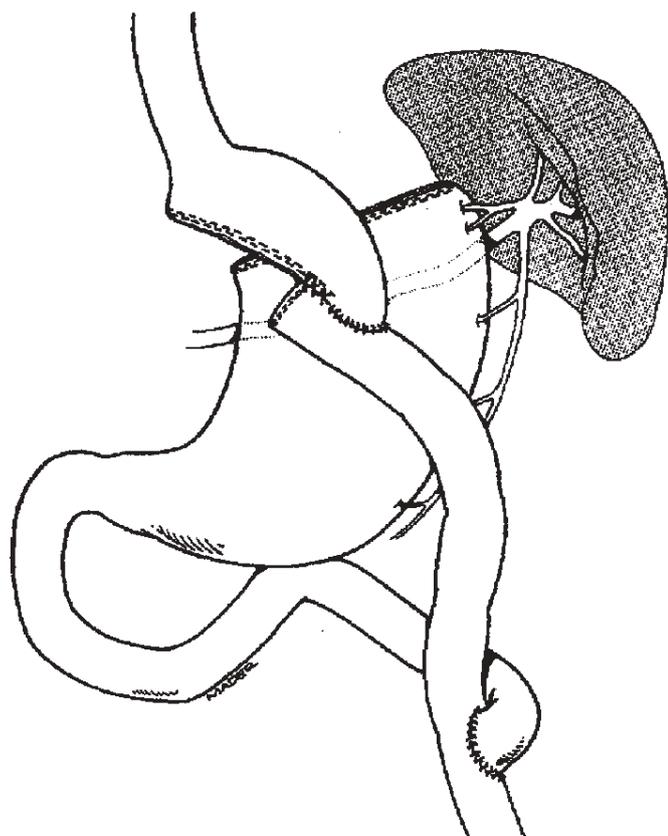


Fig. 4: Gastric bypass (GBP).

Unfortunately, BPD was preceded by JIB. This caused the honest refusal of the operation for many years, and gave subsequently a false but credible reason to continue refusing the operation to the many surgeons who, for different reasons, find more advantageous to go on using the food limiting procedures.

This is the power of timing. If the BPD had been conceived ten or fifteen years earlier, everybody today would be using BPD or a modification of it, and the gastric restriction procedures would have never existed. It is reasonable to imagine that this will sooner or later be true, anyway with a delay of at least forty years

This long foreword was evidently necessary to explain my embarrassment when asked to indicate criteria for choosing one or the other of the bariatric operations available today.

On one side we have a procedure that ensures excellent and permanent weight reduction, together with disappearance of all metabolic problems, on totally free diet, at the price of a minimal risk of nutritional complications which may exceptionally lead to revisional surgery without loss of the results, and of some unpleasant side-effects. On the other side we have a series of operations that offer a weight loss from fair, but sufficient to cause resolution of the majority of co-morbidities, such as ASGB, to good, as is the case of GBP, which also has a specific effect on diabetes, a weight loss that is more

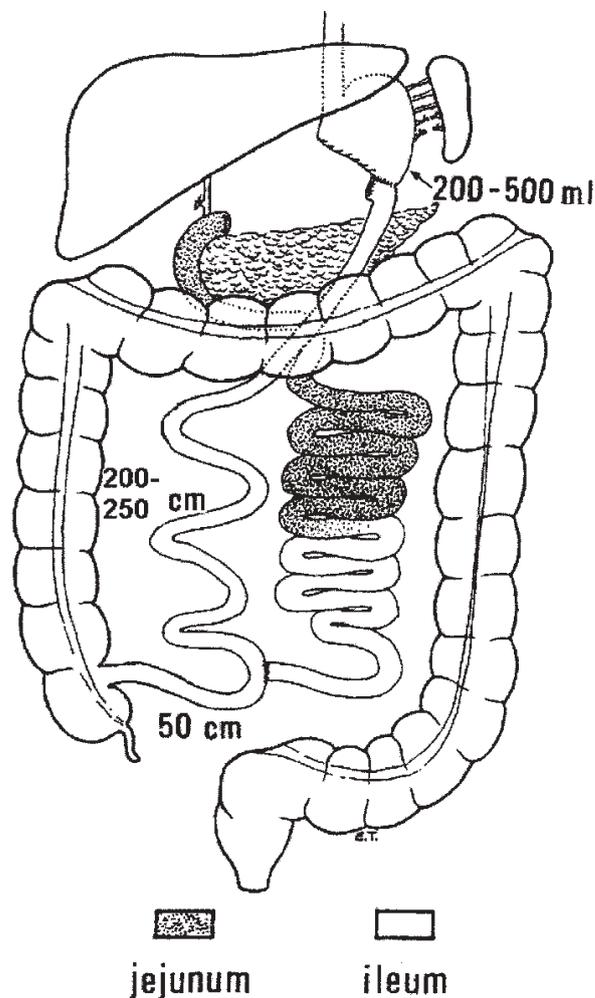


Fig. 5: Biliopancreatic diversion (BPD).

or less prolonged in time, but anyway temporary, with no risk of severe long-term complications.

Things being like this, great importance is certainly assumed by the complexity of the procedure, and thus operative mortality and morbidity. The latter are certainly minimal with ASGB, little higher but still very low with VBG, while GBP and BPD are substantially comparable, the perioperative morbidity being even greater with GBP than with BPD, while the operative mortality varies for both operations in different series from less than 0.5% to 1%. It would be unfair not to mention the quality of life which, as far as food is concerned, means on one side lifelong free diet, while on the other side the success is unavoidably linked with staying on a diet as long as the success is maintained. However, let us forget about this, and let us try to find some possible criteria of choice.

Gastric bypass, giving weight loss results inferior to those of BPD at the same price in terms of perioperative risks, should be considered only when a good weight loss is desired and the patient is afraid of not being able to control the unpleasant side effects of stool and gas, or, more generally, when specific contraindications for BPD

are present, like diarrhea, chronic inflammatory bowel diseases (which are rarely accompanied by obesity), previous left, total or subtotal cholecystomy, very poor financial status which could make difficult a protein-rich diet, and a few other rare conditions.

On the contrary, a certain number of conditions that absolutely require to be treated with BPD, could be listed, like superobesity (BMI >50), a condition where short-term failure is the rule with other operations, severe metabolic complications, like the ones included in the metabolic syndrome, or poor compliance, culminating in the Prader-Willi condition, or in the psychotic obese patients.

For the rest reasonable distinction could be done between the obese patients whose main aim is "beauty", and those aiming at "health", what in both cases means better quality of life, even if the goals are very different aspects of life, because the patient starting points are very different. With the word "beauty" I synthesize all the conditions which make easier the relation life. This is generally the case of young patients, who still have to build up their life and would be greatly helped in this by the acquirement of a body image as close as possible to normality. They want to lose as much weight as possible and they want obviously to maintain the attained weight, in order to be able to live a normal life, fighting on equal terms, with no handicaps. They do not care for living longer and would be even ready to pay for the result 10 or more years of life, a currency which, in their present situation, is for them worthy very little, if anything. Again, with "health" I synthesize a long series of physical problems, which go from respiratory failure or type 2 diabetes to inability to fit in a DC9 seat or simply to lace shoes. These are generally older patients with one or more co-morbidities, seeking for a better health to live better and to live longer. They generally have a

well-established life, with an already constituted family, so they have minimal problems of relation life. Their operation should be as quick and simple as possible, in order to minimize the operative risk. After this, even a moderate excess weight loss will be sufficient to improve or cure their comorbidities and greatly improve their quality of life, together with a very likely increased life span.

In other words, young obese patients should be submitted to an operation yielding excellent weight loss sustained for a lifetime, because: 1) they can sustain a major operation with minimal operative risk; 2) they can well afford the risk of late nutritional complications, if this is the price to be paid for a lifelong weight normalization, allowing them to live a normal life. On the contrary, the older people should have an operation entailing minimal risk, their comorbidities would benefit even from a moderate weight loss, they do not care for "beauty", so, even if in the long run they will regain some weight, they will not complain, and the relative short time they still have to live should not be disturbed by any annoying and time-consuming late complication.

Obesity surgery is still a young discipline, with no guidelines, no rules, no criteria, which is maintained in the present state of total confusion and anarchy by a certain number of individuals who use it for attaining goals others than patient's well-being. In expectation of the time when the institutional authorities who have the power to do it eventually decide to bring order and honesty in this so far totally uncontrolled field, only the long experience, culture, dedication of professionals who really do this surgery with the only aim of giving these unfortunate patients a hope for the future can guarantee the correct use of bariatric operations.

