

Is safe the use of aspirin in bariatric surgery?

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Background: Aspirin is widely used in patients who had a coronary artery or vascular brain disease and in patients for preventing vascular thrombotic. Morbid obesity is associated with atherosclerosis and thromboembolic events and some of these patients are candidates for obesity surgery. Our group don't stop aspirin before surgery day. Aspirin has been associated with digestive bleeding or late stricture of the gastrojejunostomy. We chose to determine the risk of complications in patients taking aspirin. **Methods:** 13 (4,90%) of 265 patients our obesity surgery database took aspirin. We performed 2 sleeve and 11 gastric bypass laparoscopic. A retrospective study of cohorts on a prospective database was performed. Patients who took aspirin before obesity surgery were identified. Normally, a week later surgery the patients return to take aspirin. **Results:** 2,26% of the total patients (265) presented complications bleeding, 1,13% digestive bleeding and 0,75% with hemoperitoneum that required a surgery review and one case with bleeding lost during the surgery that required conversion to open surgery. None of the patients with bleeding problems was taking aspirin. Up to date nobody our 13 patients have stricture of the gastrojejunostomy (21 average months follow-up). Today, 9 of them take aspirin. In our global series we have not described thromboembolic events and the mortality rate is 0%. **Conclusion:** Some groups prefer to stop aspirin before surgery day to prevent complications. In our experience taking aspirin before day surgery are safe and no complications bleeding or late strictures of the gastrojejunostomy were described.

Key words: Bariatric surgery; aspirin; bleeding

Background:

Morbid obesity (**MO**) is often associated with various cardiovascular diseases [1-4]¹⁻⁴. Aspirin has been used for decades in secondary prevention of myocardial infarction or stroke in patients with ischemic heart or cerebrovascular disease, and its efficacy has been well documented⁵. The appropriate perioperative management of obesity patients who are taking aspirin is a common clinical problem for the attending surgeon and anesthetist. Some groups prefer to stop aspirin before surgery day [6,7] because aspirin has been associated in obesity surgery with bleeding lost and late stricture of the gastrojejunostomy⁸.

Even so, no definitive evidence-based guidelines exist on the perioperative management of aspirin allocated patients scheduled for obesity surgery.

Thus, the question whether to continue or discontinue aspirin in the perioperative period remains

unanswered. The purpose of this study was to determine the risk of lost bleeding and others complications in obesity surgery patients taking aspirin and to evaluate the need to stop aspirin in these patients before surgery day.

Methods

From March 2006 to January 2012, 265 patients underwent laparoscopic obesity surgery (sleeve gastrectomy or gastric bypass) by the same surgical team.

When patients take aspirin previously we did not stop the aspirin treatment. Normally, a week later surgery the patients return to take aspirin. All patients received prophylaxis against gastrointestinal bleeding with ranitidine or Omeprazole until hospital discharge. We recommend taking lansoprazole for a minimum of 6 months after surgery. If patients continued taking

aspirin we recommended to associate lansoprazole in the long term.

All patients were treated with enoxaparina sodium (clexane® 60mg) one dose 12 hours before surgery day and 1 dose daily during one month after surgery. All of them took pneumatic sleeves at the surgery and in the first 24 post-operative hours. We analyzed the bleeding lost, thromboembolic events, and late complications such as the stricture of the gastro-jejunosomy.

Patients who took aspirin before obesity surgery were identified by specific review. We performed a retrospective study of cohorts on a prospective database. Then, we determined whether they had been taking aspirin after bariatric procedure. Any patient who required hospital admission in the postoperative period for lost bleeding was also identified.

Results

13 (4,90%) of 265 patients our database took aspirin (2 of them 300mg, and the others 100mg). 10 of them were female and 3 men. The average of age was 55 years (46-63). Body mass index (BMI) was 48,3 (39-57).

3 of them presented coronary pathology and the others took aspirin for preventing vascular thrombotic events. 4 preoperative echocardiogram were normal and the rest presented little abnormalities.

We performed 2 sleeve gastrectomy and 11 gastric bypass laparoscopic in patients taking aspirin. No patients with aspirin treatment presented bleeding complications in the postoperative period but we had some bleeding related complications in the whole serie (2,26%). Among them 2 patients (0,75%) required surgical review because of hemo-peritoneum. Another patient required conversion to open surgery due to an important bleeding. The mean of packed red blood cells transfused was 2,3 units.

Upper gastrointestinal bleeding occurred in 3 patients (1,13%) and all of them were underwent an emergency upper gastrointestinal endoscopy. The endoscopy findings are given in Table 1. None of them required surgical review.

	Endoscopy findings and therapy	RPC units transfused	Post-days bleeding
1	Normal	0	13
2	Bleeding from anastomosis-sclerosis with adrenaline	0	2
3	Friability and superficial bleeding from anastomosis-sclerosis with adrenaline	0	2

Table I. Endoscopy findings, transfusion requirements and duration time between surgery and gastrointestinal bleeding day.

Regarding stricture, only one patient presented symptoms of stenosis (0,38%); the diagnosis was 420 days after gastric bypass and a peptic ulcer in the anastomosis was found in the upper endoscopy. Symptoms were released with one session of endoscopic dilatation and medical therapy with omeprazole. This patient did not take aspirin in the preoperative period but was treated with non-steroidal anti-inflammatory for the bone pain.

Up to date nobody our 13 aspirin group patients have stricture of the gastro-jejunosomy (21 average months follow-up).

We have not described thromboembolic events and the rate of mortality was 0% (table 2) in our series.

Today, 9 of them take aspirin.

	Total series (265)	Aspirin group (13)
Bleeding problems	2,26% (6)	0%

Stricture of the gastrojejunostomy	0,38%(1)	0%
Thromboembolic events	0%	0%
Mortality rate	0%	0%

Table II. Bleeding lost, stricture of the gastro-jejunosomy, thromboembolic events and mortality after obesity surgery.

Discussion

Especially the perioperative application mode of acetylsalicylic acid (aspirin), the most commonly used anti-platelet agent, has been subject to ongoing database for years. Even so, no definitive evidence-based guidelines exist on the perioperative management of aspirin allocated patients scheduled for laparoscopic bariatric surgery. Bleeding is one of the most feared complications by surgeons after any intervention. In the case of bariatric surgery the incidence of this complication globally is 1,5-3 %⁹ and in our global series is 2,26%.

The 2002 Antithrombotic Trialists' Collaboration reported that antiplatelet therapy reduced the risk of non-fatal myocardial infarction by one-third, non-fatal stroke by one-fourth, and vascular events by one-sixth. Aspirin is therefore strongly recommended as a life-long therapy after coronary or cerebrovascular event¹⁰. Despite evidence to the benefit of antiplatelet therapy in patients at risk of cardiac and cerebrovascular complications, aspirin treatment is often discontinued before surgery due to the risk of perioperative bleeding¹¹⁻¹³, because digestive hemorrhage is one of the most common intrahospital complications (3,1%) occurring after an obesity surgery procedure¹⁴. However, recommendations for discontinuation of antiplatelet therapy before surgical procedures are changing and is valued more the risk of thromboembolic events occur that the risk of bleeding.

Upper gastrointestinal bleeding occurring early after gastric bypass is usually related with to the staple or suture lines¹⁵. We have described 3(1,13%)early bleeding digestive. In one patient no findings in the endoscopy and in the others the bleeding origin is

related with suture lines. In both cases we performed a mechanics anastomosis with a blue stapler (30 mm). Currently we prefer perform a manual anastomosis (HIGA procedure), and with this technological variant we have not described any bleeding problems.

Stricture of the gastro-jejunosomy after Roux- Y-gastric bypass is common in the early postoperative period, with a reported incidence of 3-27%. Late strictures are much less common⁸. The origin of the late strictures varies, excessive acid, aspirin, non-steroidal anti-inflammatory drug use, smoking...However in our group only one case of late stricture of gastro-jejunosomy after 420 days of gastric bypass and it was necessary a dilatation endoscopy. This patient was not taking aspirin and we suppose that the origin of the stricture was excessive acid. After 4 months follow-up we are not observed clinical symptoms of recurrence.

There are a lot studies about aspirin and surgery¹⁶⁻¹⁸ but no data are available about the safe of the aspirin in obesity surgery. Although the total number of patients taking aspirin in our series was small, the rate of complications was 0% and not sequel such as myocardial infarction or recurrent stroke were described. In our experience taking aspirin before day surgery are safe and no bleeding complications or late strictures of the gastro-jejunosomy were described.

Clopidogrel is another antiplatelet drug commonly used in patients with vascular disease. Caruana et al⁷ found a very high incidence of bleeding digestive in gastric bypass patients when were taking clopidogrel and they currently prefer to discontinue the drug 5 days before surgery.

The analysis of results is important to know the real effect of some factors on the outcome of surgical interventions. It is true that one of the weaknesses of this study is the fact that it is retrospective and the low percentage of patients treated with aspirin but the fact that none of the patients with aspirin treatment presented bleeding complications, supports the interest of our results and can serve as a basis for future prospective studies.

Conclusion:

Prospective studies are required to demonstrate the importance of treatment with aspirin until the day of bariatric surgery, but in our experience treatment with aspirin did not increase the incidence of bleeding complications or late strictures of the gastro-jejunoscopy and can be considered safe.

Our data suggest that you can continue aspirin therapy in patients with cardiovascular risk and to be required to undergo bariatric surgery. However, recommend associate inhibitors proton pump to prolonged treatment as done in this study all patients.

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