

Some Data on Surgical Treatment of Gastroesophageal Reflux

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Abstract: Gastroesophageal reflux is such a terminal illness its solution is surgical intervention that has been a challenge for therapeutic treatment. This type of treatment has started properly by positioning the child during breastfeeding, by the use of drugs, such as omeprazole. Purpose of the study: determining the efficiency of surgical techniques for gastroesophageal reflux, comparison of two methods: open and laparoscopic, determination of the advantages and disadvantages of techniques. The study was conducted over a 4 year period, from 1 October 2011 to 20 February 2015. The study involved 59 children, operated for gastroesophageal reflux with laparoscopic method and for the same period, 14 children operated by the open method. The duration of the operation (48 min) is greater in the group treated with laparoscopy, compared with open method (14 min). In the open method we had 2 cases of wound inflammation. In both groups, a significant statistical difference is seen at the use of antibiotics. The duration of stay of patients with laparoscopic method (2 days), is significantly lower. In conclusion, it is seen that sparing incision, infant morbidity of fundoplication by Nissen, performed with laparoscopy, has the same success as it was conducted by the open method. Regime and placement of food is in both cases, at the same efficiency, in both operated groups.

Keywords: Gastrointestinal Reflux, Laparoscopy, Open Method, Nissen Fundoplication

1. Introduction

The therapeutic treatment of gastroesophageal reflux implies a series of measures which conclude at the end, at surgical treatment. It should be noted that surgical treatment should be the ultimate weapon to be used for the treatment of this pathology, because of complications and recurrence itself that may give this surgery. The vomiting without strain that happens after food, at breastfed children, is a symptom that can't be called a disease, if breastfed children fade away after a meal, and we keep at elevated position.

With the maturation of the lower esophageal sphincter, it goes away with time and disappears almost entirely. Seeing that symptom subsided from elevated position, it was thought to be used at chair of chaise longue. Pretty soon it was noted that this led to the addition of reflux [1].

Use of elevated position is not without consequences and must be applied with care, according to a study [2], noted that the use of this position must be accepted as a treatment for the side effects of drug-related therapy. In a study [3] which sees the connection of SIDS position (Sudden Infant

Death Syndrome), it is recommended the use of lateral positioners and that the child should be placed in a position in the back. This is also the recommendation of the AAP (American Academy of Pediatric Surgery).

Another method of treatment for these children is obesity and consistency of food they receive, use of motilium or cisapride prokinetic, which are agents that have very good clinical effects. Preparation is the first that provides augmentation of peristalsis, increased pressure to lower esophageal sphincter and gastric emptying rush [4]. But the discovery of cardiac problems that can give this product, made that in America to be removed from the market [5]. However, it is being used here, but keep in mind that the treatment should be as limited and cautious because of these complications.

The use of H₂ receptor antagonists (ranitidine) was not very practical for young children. Omeprazole or better proton pump inhibitors, for a long time already are part of therapy. Although, early reports were very good and

enthusiastic about this new drug in its use to children should not overestimate or underestimate. This is a drug which has its own side effects as reported [6, 7] which can give gastrointestinal infections, bone fractures, hypomagnesaemia or excessive, and an increase in acidity (rebound) after treatment ends. Many scholars in the years before the release date of this drug rejected surgical treatment of reflux itself, saying that treatment with this preparation would be the final solution to the problem of reflux. Omeprazole should be used as the curing medicine in cases where surgery fails it on grounds that it is good therapy, but often not healing.

2. Materials and Methods

Principles of surgical treatment of gastroesophageal reflux are based on the anatomy and physiology of the lower esophageal sphincter. They include the extent of intraabdominal esophagus, emphasizing the angle of His, increased pressure in esophago-gastric junction, closing the crura.

Purpose of the study:

1. Determining the efficiency of surgical techniques for gastroesophageal reflux.
2. Comparison of two methods: open and laparoscopic.
3. Determination of the advantages and disadvantages of techniques operators.

The study was conducted over a 4 year period, from 1 october2011 to 20 february 2015. The study involved 59 children operated for gastroesophageal reflux with laparoscopic method and for the same period 14 children operated by the open method.

By sex in these two groups, we had 34 boys and 25 girls in the first group of laparoscopic method and 8 boys and 6 girls in the group with open method. The average age of the children that were treated: for boysis 12 years and for girlsis 13 years in the group of laparoscopic method; boys and girlsare aged 7 years and 8 years in the group of open method.

Data were collected prospectively on the basis of this file type. The data are collected and described in such a way that they simply be analyzed statistically.

3. Results

All the results are represented at specific tables. At table 1 we can see the results according the duration of surgery, like a procedure at cases of laparoscopy and at cases of open method.

Table 1. Duration of surgery:laparoscopy method vsopen method.

Duration of operation/min	N	AV	SD	min	max	P
Laparoscopy	59	162	69	60	385	0.0005
Open Process	14	93	24	75	125	

The duration of the operation is greater in the group treated with laparoscopy, compared with the open method. This difference is statistically significant.

Table 2. Duration of operation:laparoscopy (homogenization) vs open method.

Duration of operationMin	N	AV	SD	Min	Max
Laparoscopy homogenized	48	95.34	27.9	60	118
Open Process	14	93	24.4	75	125

P value is 0.0975.

There we found statistically significant differences in the duration of the operation between the two methods.

Table 3. Wound Infection.

Infection	Frequency		Percentage		P
	Yes	No	Yes	No	
Laparoscopic method	1	58	1.69	98.31	0.0922
Open method	2	12	14.29	85.71	

In the open method we had 2 cases of wound redness.

Table 4. Pulmonary Complications.

Pulmonary complications	Frequency		Percentage		Fisher's test P
	Yes	No	Yes	No	
Laparoscopic method	52	7	88.14	11.86	0.0455
Open method	9	5	64.29	35.71	

In this series we have only one major complication of patients with pulmonary.

Observed differencesare statistically significant between the two groups.

Table 5. The antibiotic therapy at laparoscopic method.

Antibiotics	Frequency	Percentage
Without antibiotics	16	27.12
With an antibiotic	30	50.85
With two antibiotics	11	18.64
With three antibiotics	2	3.39
Total	59	100.00

Antibiotics have been used as prophylaxis in 50% of patients. In many patients antibiotics are not used either as prophylaxis.

Table 6. The antibiotic therapy at open therapy.

Antibiotics	Frequency	Percentage
With an antibiotic	10	71.43
With two antibiotics	3	21.43
With three antibiotics	1	7.14
Total	14	100.00

In another series of patients we have used antibiotics to all patients. It is worth noting that in most cases are used as prophylaxis.

Table 7. The statistical analysis for the use of antibiotics.

Antibiotics	Group open method	Group laparoscopy	P
With antibiotic	14	43	0.0304
Without antibiotics	0	16	
Total	14	59	

As we see the use of antibiotics in both groups, have a significant statistical difference.

Table 8. Duration of post-operative stay (in days),laparoscopyvs open method.

Post-operative duration of stay (days)	N	AV	SD	Min	Max
Laparoscopy	59	1.85	1.60	0	8
Open Process	14	5.3	2.23	4	9

P value is 0.0001.

It is observed statistically significant difference between the post-operative duration of stay for patients of laparoscopy, compared with patients of open method.

Table 9. The start of food comparing at the two groups.

Start of the food	Frequency		Percentage	
	First day	Second day	First day	Second day
Laparoscopy	44	15	74.57	25.43
Open surgery	2	12	14.29	85.71

According Fisher's test, p value is < 0.0001 . Most children are fed at laparoscopic group, from the first day, where you can see a big contract with another team. The observed changing is statistically significant with P value < 0.0001 .

4. Discussion

At the age of child with gastroesophageal reflux, has long been given special attention by pediatricians, as well as by pediatrician surgeons. A pathology that in its benign characteristic is reflux, not morbid, picked up at a very large percentage of children in the first year of life, where some studies appear in 50% of cases with a maximum increase in the prevalence of 4th month of life. Laparoscopic fundoplication is the gold standard for surgical treatment of severe GERD (Gastroesophageal Reflux Disease) and results in approximately 95% patient satisfaction [8]. Laparoscopic Nissen and Dor fundoplication are better than Toupet fundoplication in reducing the number of reflux episodes, suppressing long reflux, increasing lower esophageal sphincter pressure (mean resting respiration) and decreasing the incidence of postoperative dysphagia [9].

The use of antibiotics is a given in both groups, analyzed and presented in tables 5,6. We analyzed the use of antibiotics that are classified into cases where we used antibiotic, classified with a double and three antibiotics used. It is clear that we have a very big difference. At the two groups clearly show that in 27% of cases in the first group, we have not used antibiotics; in the second group we have no case that we do not use antibiotics. In general, the use of antibiotic prophylaxis is used; in the second group it is used

only one antibiotic in 71.42% of cases, two antibiotics in 21.43% and three antibiotics at 7.14%. If we compare the open method with laparoscopy, we used two antibiotics at 18.64% and at 21.43% of cases at the group of laparoscopy; cases with three antibiotics we had respectively 2 and 1 case. The use of antibiotics in the two groups is statistically analyzed at table 7. Here we have grouped the patients who have not used antibiotics and in patients who have used antibiotics with statistically significant difference p 0.0304. We should note that the use of antibiotics in the second group is more liberal or after many criteria due to the bad conditions, but also because having a wound operators rather larger and more exposed, that we are forced at the use of antibiotic-prophylaxis with broader indications.

Laparoscopic antireflux surgery significantly increased baseline impedance likely reflecting recovery of mucosal integrity [10]. Duration of stay is an important clue in our discussion that we touched a little on discussing at the above problem of laparoscopic cost operators. We analyzed the data of total duration of stay of the total of patients. Duration of stay of patients in the first group was 11.85 days on average, while in the second group it was 7.25 days. In the given idea if these patients stay longer in hospital, they have a long post-operative period. But if we look at table 8, where we have the picture of post-operative duration of stay varies, we see that the duration of stay, at the first group the average was 1.85 days, and for the second group the average of stay was 5 days. In the statistical analysis we have statistically significant difference of $p < 0.0001$. This is a very important given, the often noted in the literature and in the advantages of laparoscopy. But if we look carefully at table 8, we see the children that have emerged at the first post-operative day in the laparoscopic group. This is impossible in children operated by the open method, where the minimum duration of stay was 4 days. This data supports much data found from literature, as we have pointed out above, for not falling into repetition.

In table 9 is the statistical analysis which shows that we have a statistically significant difference of p value < 0.0001 . This has a direct impact on the duration of stay and post-operative, but the impact and cost for feeding because the baby has not needed to perfusion, so practically it reduces the cost impacts for the patient. Diet earlier in these patients, is due to children that develop virtually no post-operative ileus. The cause is minimal manipulation of the viscera, with laparoscopic method, that brings a lesser trauma and turn the temperature of the viscera preserved quite well during laparoscopic procedures. Since many data that we receive from literature, is seen that laparoscopic method is very safe and effective in all ages. In an elegant study were considered 53 children who perform laparoscopic and open fundoplication. Characteristic of this study is that there are deals under 1 year old child. These are divided into two groups 39 are operated with laparoscopy and 14 are operated with open method. These two groups were compared with each other for operation time, meal time, complications and recurrences. It is seen that the time was 120 +/- 24min

operators to laparoscopic group and 91 +/- 21 min for food began +/- 0.3 1.3 +/- 0.9 days and 3 days respectively. Total food reached 1.7 +/- 0.6 with laparoscopic group and 1.3 / - 0.9 with laparotomy group. Recurrences are at ratios 2/14 and 1/39 for the respective groups.

5. Conclusions

In conclusion, it is seen that sparing incision infant morbidity fundoplication by Nissen, performed with laparoscopy has the same success as was conducted at the open method. Regime and placement of food is in both cases in the same efficiency at both operated groups. Laparoscopic Nissen fundoplication is safe for treating esophagogastric reflux in children, provide similar results as open procedures with significant shorter hospital stay.

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