DOCTORAL THESIS

SUMMARY

CONTRIBUTIONS TO THE ENDOSCOPIC AND CLINICAL STUDY ON GASTRO-OESOPHAGIAN REFLUX DISEASE AND HIATAL HERNIA. THERAPEUTICAL OPTIONS

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KEY WORDS
Gastro-oesophageal reflux disease, gastro-oesophageal reflux, hiatal hernia, Barrett's oesophagus, surgical management, laparoscopic fundoplication, classical fundoplication

INTRODUCTION
Gastro-oesophageal reflux disease (GERD) is a chronic, progressive, recurrent disease implying medical lifetime treatment. It represents the most frequent disorder of superior digestive duct, one of the most common gastro-intestinal disease in nowadays society, with symptoms like heartburn and regurgitation that have a negative impact on patient’s daily activity, being considered the disease of the 21st century.

The clinical management of GERD evolved rapidly through the introduction of a new class of pharmaceutical drugs but the pharmacologic therapy cannot intervene to nullify the possibility of reflux complications. The surgical treatment proved to be the most efficient therapeutic solution for GERD, especially through laparoscopy.

Today we have to approach in a complex way the management of GERD and hiatal hernia, by analyzing both the advantages and disadvantages of laparoscopic and classical surgical and medical treatment, as well as the ways of improving the long-term quality of patients’ life.

STUDY OBJECTIVES
We accomplished a multidisciplinary retrospective study on a group of patients with GERD, with or without hiatal hernia, centered on several objectives:

- The etiopathogenic general study in patients diagnosed with GERD, including the analysis of demographic factors, the risk factors related to the patients’ life style.
- The study of clinical emergence, diagnosis methods and efficiency of medical treatment.
- Etiopathogenic study including demographic aspects, the type of reflux oesophagitis, the size of hiatal hernia in patients with GERD and hiatal hernia.
- Etiopathogenic study, risk factors, the type of reflux oesophagitis, the size of hiatal hernia and the type of Barrett’s oesophagus in patients with GERD and Barrett’s oesophagus.
- Etiopathogenic study of risk factors, the type of reflux oesophagitis, the size of hiatal hernia in operated patients with GERD and hiatal hernia.
• Comparison between two types of surgical approach – classical and laparoscopic – concerning instructions, technique, intrasurgical accidents, postsurgical evolution (postsurgical complications, intensity of pain, nourishment and transit, spitalization), results in time, relapses, quality of patients’ life.

• Comparison between the obtained results and those in medical literature.

**MATERIALS AND METHODS**

The material for study consisted of patients diagnosed with GERD, medically treated and watched inside the Clinic for Gastroenterology of University of Medicine and Pharmacy Craiova; some of them underwent surgical interventions in Surgical Clinics I, II and III of UMP Craiova. The study was made between July 2005 and August 2011.

From the group under study, formed by 816 patients with GERD, after the investigations we had the following groups and subgroups:

**Group I – 690** patients with GERD of which 403 presented associated hiatal hernia of different sizes – these were **subgroup I**.

**Group II – 126** patients with Barrett’s oesophagus, of which patients with associated hiatal hernia were separated – **98 – subgroup II**.

**Group III** was made of **91** operated patients who presented GERD with injuries of peptic oesophagitis and hiatal hernia; some of them presented Barrett’s oesophagus. They were subdivided in two groups: **group A – 68** patients operated through classical approach and **group B – 23** patients operated through laparoscopic approach.

The methods included: the imagistic and clinical study, medical management, surgical management, where we presented the surgical techniques used during the study.

Statistic analysis of data. The statistic indicators used were in concordance with the intended aim.
RESULTS

Groups I, II and subgroups I, II. The demographic studies, symptomatologic share, endoscopic aspects, medical management of patients with GERD were materialized by some results as follows:

- The following are dominant: men (67.52%), maximal incidence between 50-59 in men (19.98%) and 60-69 in women (11.02%), patients from urban areas (65.44%) because of all risk factors.

- The most frequent symptoms: heartburn (87.39%), regurgitations (36.09%), dysphagia (27.10%).

- Reflux oesophagitis type A and B was found in 69% of patients and type C and D in 31%.

- Hiatal hernia was more frequent in men (64.52%), group of age 60-69 (25.56%) for both sexes, in patients came from urban areas (69.48%), most of them (61.53%) having hiatal hernia less than 3 cm and only 11.66% of them larger than 5 cm.

- The medical management was made with: IPP for 88.24% of patients, of which 79.02% responded positively; anti-H2 was given to 11.76% of patients, 58.33% being considered healed. When the treatment was interrupted, the patients with big hiatal hernia and severe oesophagitis had relapses.

Group III. The demographic studies, symptomatologic share, endoscopic aspects, surgical management of patients with GERD and hiatal hernia were materialized by some results as follows:

- The following are dominant: women (56.04%), maximal incidence both in women (20.88%) and in men (18.69%) was between 60-69 years old, most patients (64.83%) came from urban areas and 75.81% of women were obese.

- Risk factors: smoking, alcohol, coffee, AINS can be found more frequent in this group.

- Frequent symptoms: heartburn (90.11%), regurgitations (67.03%), dysphagia (13.19%).

- The results of endoscopy were different in this group: no patients had oesophagitis type A, most of them (48.36%) had oesophagitis C and hiatal hernia larger than 5 cm (23.08%).

- Surgical management. 74.73% of patients were operated through classical surgery and 25.27% through through laparoscopic surgery.
The classical surgery interventions were mainly total Nissen and Nissen-Rossetti fundoplication (41.18%), followed by partial, anterior or posterior fundoplication type Dor or Toupet (38.24%). In a smaller proportion we used: anatomic proceeding type Lortat-Jacob (10.29%), gastric resection, vagotomy with gastroanastomosis on a Y-shaped loop (6.59%).

Seven emergency surgical interventions were made for 4 hemorrhagic complications and 3 obstructive, 2 of volvulus gastric type and 1 intrathoracic strangling of a large hiatal hernia with necrosis, case that led to the single death during the study.

We accomplished an interesting comparative study between Nissen-Rossetti classical and laparoscopic fundoplication on relatively similar groups related to number and average age, both groups surpassing the limits of medical treatment. The observed parameters were: average duration, intraoperative incidents, immediate and long-term postoperative evolution. The results showed the superiority of laparoscopic approach, both for the postoperative comfort of patients and for the long-term results related to quality of life, but less for the average duration of intervention.

Some patients needed beside the surgical cure of GERD other associated operatory procedures, accomplished both through laparoscopy and classical, most of them being cholecystectomies.

The major postoperative complications were: severe dysphagia after a laparoscopic fundoplication that implied two interventions, the latter being opened, a transhiatal intrathoracic sliding of the fundoplication, after a classical fundoplication surgically corrected and one case of gastric paresis prolonged by the traumatization of vague nerves. We noticed a relapse, documented, after 6 months from the surgery and laparoscopic Nissen-Rossetti fundoplication.

At the end of this chapter, by using Visick scale, we analysed the results in time (1-3 years) related to the life quality of operated patients, obtaining good and very good results in 89% of operated patients.
CONCLUSIONS

1. Distribution on sexes of group under study proved the increased incidence of GERD in male patients, with maximal incidence between the age of 50-59. The proportion men/women = 2,08/1.

2. Distribution on residence showed the prevalence of patients from urban areas who were subjects to many risk factors: smoking, alcohol, coffee and AINS.

3. By comparing the typical and atypical symptoms GERD we noticed that all of them were more intense in patients with operatory indications.

4. Endoscopy was made in all patients of the group under study who were diagnosed with: different types of reflux oesophagitis, 84,56%, Barrett’s oesophagus, 15,44% and hiatal hernia, 61,40%.

5. Hiatal hernia was more frequent in men, groups of age 6-69 and in patients from urban areas.

6. The endoscopic evaluation of hiatal hernia had the following configuration: hiatal hernia smaller than 3 cm was found in 61,53% of patients, between 3-5 cm in 26,80% and larger than 5 cm in 11,66%.

7. The presence of hiatal hernia is associated to the symptoms of gastro-oesophagian reflux and the larger its size, the more severe the disease.

8. The most frequent form of intestinal metaplasia was the short Barrett’s oesophagus, followed with almost equal values by the long and insular type.

9. Patients in the group under study responded well to drugs, especially to IPP but when they were stopped, the patients with large hiatal hernia and severe oesophagitis had relapses.

10. Surgery was for patients with persistent or recurrent symptoms of GERD and/or complications as well as for the patients that asked for the surgical intervention.

11. In the group of operated patients, women were dominant, with ages between 60-69, most of them obese, from urban areas.

12. Irrespective of the size of hiatal hernia, no patient had oesophagitis type A; for the hiatal hernia larger than 5 cm we found less cases of oesophagitis B, 4,40%, but more of type C, 23,08% and D, 9,89%.

13. 74,73% of patients were operated by classical surgery and 25,27% by laparoscopic surgery. The ratio was 2,79/1.
14. Most classical surgeries were for the group of age 60-69, both in men and in women and the laparoscopic surgery was dominant in women, aged between 50-59.

15. Most interventions, both classical and laparoscopic, were total fundoplications that best controls the immediate and long-term postoperatory reflux.

16. The comparative study of total fundoplication Nissen-Rossetti, classical and laparoscopic, establishes the superiority of laparoscopic approach related both to patient’s postoperative comfort and long-term results.

17. Some patients needed beside the surgical cure of GERD other associated operatory procedures, accomplished both through laparoscopy and classical, most of them being cholecystectomies.

18. Emergency interventions were made for obstructive or hemorrhagic complications observing, mainly, the way of solving the complication and, if possible, the cure of GERD.

19. The major postoperative complications were: severe dysphagia, a transhiatal intrathoracic sliding of the fundoplication and gastric paresis prolonged by the traumatization of vague nerves.

20. After surgery, the patients’ quality of life was much better and the results were constant on short and mid term.