

Evaluation and Selection of Approach to Postoperative Abdominal Adhesions

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Abstract— Aim: The aim of the study is to analyze the operating time, hospital stay, rates of conversion, morbidity and mortality in patients undergoing laparoscopic adhesiolysis for bowel obstruction in UMHATEM "N.I.Pirogov".

Material and Methods: For a period of three years from 1.1.2012 to 31.12.2014g. in the Department of General, Visceral and Emergency surgery in UMHATEM "Pirogov" 37 patients with postoperative intestinal adhesions were operated laparoscopically. Out of the 21 (56.76%) were female. In this study the parameters - age, gender, clinical symptoms, mode of treatment, morbidity and mortality were followed. Age in this retrospective analysis ranged from 18 to 58 years (average 43 years). Patients below 18 years of age, as well as these with tumor data, Crohn's disease and radiation enteritis, were excluded from the study.

Results: Age in this retrospective analysis varies from 18 to 58(average 43). Seven patients (15.9%) underwent conversion. The causes were dense fibrous adhesions in five of them and iatrogenic lesion in two. Total iatrogenic lesions were recorded in 4 patients. In the other two, surgery was completed laparoscopically with an intracorporeal suture. The hospital stay varies from 4 to 9 days (on average 6 days). The operating time was from 28 to 110min (average 52min). Surgical morbidity is 15.9%, mortality is not registered.

Conclusion: Laparoscopic adhesiolysis is safe and effective in selected patients with postoperative abdominal adhesions. The last few years, in many more cases, has become a method of choice because of its incontrovertible advantages.

Keywords — ileus, postoperative adhesions, laparoscopy, adhesiolysis, conversion.

I. INTRODUCTION

Postoperative adhesions following abdominal surgery are a common occurrence with a frequency ranging between 12-17% [1]. They can cause abdominal pain, nausea, vomiting due to intestinal obstruction. By increasing the number of laparotomies, the formation of adhesions increases. Although many patients with postoperative adhesions overcome this condition through conservative treatment, there are others that require surgical intervention [3], [4]. Until recently, laparotomy was the only method of choice for surgical treatment, which was associated with the risk of formation of new adhesions, ventral hernia, postoperative pain and ileus [4], [5]. In the early stages of laparoscopic surgery, prior abdominal intervention was considered a contraindication, but with increased experience, currently excellent results are achieved in selected patients [6] - [19]. Laparoscopy has been shown to be associated with fewer intraperitoneal adhesions [20], [21]. Furthermore, the technique involves minimal incision of parietal peritoneum and minimal tissue trauma in a closed environment without trauma to adjacent tissues. These characteristics outlined laparoscopy as a method of choice for adhesiolysis in selected patients. However, the potential application of laparoscopic adhesiolysis can be wider. Patients should be carefully investigated and evaluated for this mini-invasive intervention. Also the lysis of minor adhesions can lead to new pathological ones.

Undoubtedly, the preoperative diagnosis of pathological adhesions is the most important step in performing laparoscopic adhesiolysis. Surgical examinations are not always exhaustive in chronic recurrent cases. To verify the diagnosis, we perform enteroclysis- contrast examination of the small bowel loops [6]. It can help differentiate between intestinal adhesions from radiation enteritis, Crohn's disease, tumor recurrence. Importantly, this preoperative study is not applicable in cases of acute obstruction and computer tomography should be performed. Therefore, the discovery of the transition area, which includes dilated and collapsed small bowel loops, is the most important stage of the laparoscopic exploration.

In summary, selective laparoscopic adhesiolysis requires detailed preoperative examination and careful laparoscopic maneuvers.

The present study includes patients undergoing selective laparoscopic adhesiolysis to acute or recurrent bowel obstruction. Surgical strategy is to undertake a detailed preoperative diagnosis and careful adhesiolysis.

II. MATERIAL AND METHODS

For a period of three years from 1.1.2012 to 31.12.2014g. in the Department of General, Visceral and Emergency surgery in UMHATEM "Pirogov" 37 patients with postoperative intestinal adhesions were operated laparoscopically. Twenty one of them (56.76%) were female. Seven of the patients underwent conversion (15.9%). In this study the parameters - age, gender, clinical symptoms, treatment, morbidity and mortality were analyzed. Age in this retrospective analysis ranged from 18 to 58 years (average 43 years). Patients below 18 years of age, as well as these with tumor data, Crohn's disease and radiation enteritis, were excluded from the study.

The disease was identified by anamnesis, clinical examinations and imaging. Initially, treatment was conservative. If no relief was observed, laparoscopic adhesiolysis was performed. Even if the conservative approach proved to be successful, patients were followed up and laparoscopic treatment is offered after normalization of the intestinal passage.

III. RESULTS

Age in this retrospective analysis varies from 18 to 58(Average 43). Seven patients (15.9%) underwent conversion. The causes are dense fibrous adhesions in five of them and iatrogenic lesion in two. A total of 4 iatrogenic lesions were recorded in 4 patients. In the other two, surgery was completed laparoscopically with an intracorporal suture.

The hospital stay varies from 4 to 9 days (on average 6 days). The operating time is registered from 28 to 110min (average 52min).

Surgical morbidity (15.9%), in addition to the four patients with iatrogenic lesions, includes three more-two patients with clinical symptoms of subilus (resolved with conservative management) and one with surgical wound suppuration.

There were no cases of mortality.

The data from all patients entering the hospital with postoperative abdominal adhesions were carefully systematized, analyzed and summarized. Patients were followed up for 30 days following discharge.

IV. DISCUSSION

The results of the present study indicate that selective laparoscopic adhesiolysis is effective and safe in acute and chronic bowel obstruction. Careful preoperative diagnosis and patient selection minimizes conversion rates. Laparoscopic adhesiolysis (denial in the past) provides excellent results, in most cases much better than open surgery [6] - [19], [22] - [25].

The role of laparoscopy has some other important aspects related to the treatment of postoperative adhesions. Ziprin et al. showed that mini-invasive surgery reduces the risk of repeated adhesions [26]. More specifically, Tittel et al. reported that the risk of recurrent adhesions following laparoscopic adhesiolysis was much lower. Garrard et al. also demonstrated that after laparoscopic surgery the adhesions were much less [20], [21]. The formation of adhesions after adhesiolysis is key in patients with this disease. There is enough evidence clearly illustrate the beneficial aspects of laparoscopy and its importance as a method of choice for the treatment of postoperative adhesions.

Recent reports have shown promising results for the role of laparoscopy in the treatment of postoperative abdominal adhesions [6], [14], [15], [17]. The mortality levels are very low (0-3%) and the technique is successful in 80-100% of patients [3]. According to the selected series, conversion and the rate of iatrogenic intestinal lesions was 6,7-43% respectively [3], [4]. Preoperative identification is performed by a conventional X-ray, abdominal CT or enteroclysis. But it is not possible to perform acute phase with enteroclysis because patients can not tolerate oral intake. This dynamic study of the small intestine is very useful in chronic recurrent abdominal adhesions as it reveals the location, extent and nature of obstruction; a preoperative differential diagnosis is performed between adhesion disease and Crohn's disease, tumors, enteritis, etc. In addition, abdominal CT is also useful for imaging the extent and location of the obstruction. The extent of adhesiolysis is a critical issue and there is still no consensus on the subject. Some surgeons perform total adhesiolysis of ligament of Treitz to the ileocecal valve [17], [28]. However, extensive adhesiolysis increases the risk of recurrent adhesions, and some minor adhesions can also become pathological. Selective surgery requires identification primarily of pathological adhesions. It is easy in acute obstruction, by detecting transitional zone between the collapsed distal intestinal segment and dilated proximal [7]-[9]. But this marker is not manifested in chronic recurrent conditions. In such cases, orientation is performed by enteroclysis.

V. CONCLUSION

The results of the present study show that laparoscopic adhesiolysis is safe and effective in selected patients with postoperative abdominal adhesions. The last few years, in many more cases, has become a method of choice because of its incontrovertible advantages.

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