SUMMARY

Purpose: The aim of the study is to evaluate the advantages of laparoscopic appendectomy from our clinical experience in UMHATEM “Pirogov” which resulted in reduced postoperative complications, pain, length of hospital stay, and early return to work.

Material and Methods: Data from a study of a patient group in the Department of General, Visceral and Emergency Surgery of UMBALSM “H. I. Pirogov” for the six-month period (01.01.2019 – 01.07.2019) were collected. Eighty-one patients with acute appendicitis who underwent laparoscopic appendectomy were selected. Indicators characterizing basic clinical and pathological features (epidemiology, demography, degree of pathological impairment), surgical approach and its outcomes (postoperative complications, postoperative duration), influence of concomitant factors were studied.

Results: The study included 81 patients. The majority of patients were women - 46 (56.79%), men- 35 (43.21%). The mean age of male patients was 31.4 years and for female-28.6 years respectively. Hospitalization times are usually short - most patients are given up to 72 hours (70- 86.42%). Only eleven patients (13.58%) had an extended hospital stay for observation and additional therapy.

Conclusion: Laparoscopic appendectomy was verified as an optimal and safe surgical procedure. Laparoscopic approach reduces post-operative pain, shortens hospital stay, reduces complications, and thereby reducing treatment costs.

Keywords: evaluation, acute appendicitis, laparoscopy, advantages, approach,
Table 1. Mode of surgery

<table>
<thead>
<tr>
<th>Mode of surgery</th>
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<tbody>
<tr>
<td>conventional appendectomy</td>
<td>34</td>
</tr>
<tr>
<td>laparoscopic appendectomy</td>
<td>81</td>
</tr>
</tbody>
</table>

Laparoscopic technique

The laparoscopic entry mode was made by a Hasson trocar, placed through the supraumbilical port with open technique. The camera was placed into the abdomen just above the pubis and the second one (10 mm) in the left iliac fossa, in a point on the left-side perfectly symmetrical to the McBurney point. The mesoappendix was clipped and the appendectomy was performed by two endoloops. The operation ends with lavage, drainage through the suprapubic port, and appendix extraction (by endobag).

In this study the parameters - age, sex, clinical signs, treatment and morbidity were followed.

Other traceable parameters were surgical identification, postoperative complications, hospitalization period, and postoperative pain management.

The data from all patients admitted to the hospital with acute appendicitis were carefully systematized, analyzed and summarized.

Patients under 18 years of age are not included in the study.

The results were summarized by monitoring the morbidity up to the one-month post discharge.

RESULTS

Age distribution shows that the majority of patients were women - 46 (56.79%), men- 35 (43.21%).

Table 2. Gender distribution

<table>
<thead>
<tr>
<th>gender distribution</th>
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<tbody>
<tr>
<td>women</td>
<td>46</td>
</tr>
<tr>
<td>men</td>
<td>35</td>
</tr>
</tbody>
</table>

The mean age of male patients was 31.4 years and for female-28.6 years respectively.

Of the 81 cases of acute appendicitis, seven were misdiagnosed (gynecological diseases - 12.24%) but were laparoscopically performed, and one patient was with cecum tumor.

Table 3. Surgical identification

<table>
<thead>
<tr>
<th>Surgical identification</th>
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<tbody>
<tr>
<td>Acute appendicitis</td>
<td>73</td>
</tr>
<tr>
<td>gynecological diseases</td>
<td>7</td>
</tr>
<tr>
<td>Cecum cancer</td>
<td>1</td>
</tr>
</tbody>
</table>

Hospitalization periods were usually short - most of the patients (70) were discharged for up to 72 hours (86.42%). Only eleven patients had an extended hospital stay for observation and additional therapy (13.58%).

Table 4. Postoperative complications

<table>
<thead>
<tr>
<th>Postoperative complications</th>
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<tbody>
<tr>
<td>wound infection</td>
<td>5</td>
</tr>
<tr>
<td>wound haemorrhage</td>
<td>1</td>
</tr>
</tbody>
</table>

There were no deaths in all group-mortality rate was 0%.

DISCUSSION

Recent studies comparing the clinical outcomes of laparoscopic appendectomy (LA) and conventional appendectomy (OA) [3-5, 7]. Most of them are in favor of a LA [1, 2, 3, 4, 5, 7]. The present study demonstrates the prevalence of female gender and young age in patients with acute appendicitis. These data are consistent with other literature sources [2, 3, 5]. Likewise, the postoperative results correspond to those of the world’s scientific communications in this field [8, 10, 11, 13]. Patients underwent laparoscopic surgery have been shown to have less duration and intensity of pain, a shorter period of hospitalization, thus reducing the cost of treatment. This is comparable to world literature.

The wound infections were 3 times higher in the open appendectomy group, with only 5 cases (6.17%) of port site infection in the laparoscopic appendectomy group. One of the reasons for the lower incidence of port site infections in the laparoscopic appendectomy group was that the inflamed appendix was removed through the operating port without making contact with the wound and endobag extraction was used. This is a significant finding in our laparoscopic appendectomy analysis [11, 12].
The incidence of histologically normal appendix in patients with clinical signs and symptoms of acute appendicitis ranges from 8 to 41% [14]. For this reason we contend that the laparoscopic procedure is the better approach in cases of suspected acute appendicitis—all in young females and obese patients, but also in children and the elderly. Laparoscopy allowed accurate diagnosis and occurred management of other differential benign and malignant pathologies. In our experience we have found endometriosis, pelvic inflammatory disease, adnexal torsion, Crohn’s disease, solitary cecal diverticulitis, omental infarction, Meckel’s diverticulitis, and cecal neoplasm [12, 13].

Shorter length of hospital stay is a wellknown advantage of minimally invasive surgery, and in this study, no hospital stay length advantage was associated with uncomplicated appendicitis. With laparoscopic appendectomy technique, early discharge within the first 24-48 hours after appendectomy for uncomplicated appendicitis does not seem to lead to a significant increase in the rate of postoperative complications when compared to the results of other world studies [13, 14].

The levels of surgical complications are minimized. The incidence of intra- and postoperative haemorrhage was negligible (<5%). Suppuration levels of operating ports also <6.2%. These results would have been even more contrasting and expressive if we presented a comparative group of conventional appendectomy in details, which was a limiting factor in this study [12, 13, 14].

CONCLUSION
Laparoscopic appendectomy was verified as an optimal and safe surgical procedure. It may be a diagnostic and therapeutic approach to missed gynecological diseases at initial examination. Laparoscopic surgery reduces postoperative pain, shortens hospital stay, reduces complication levels, thereby reducing and treatment costs.

REFERENCES:

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