



# LAPAROSCOPY AFTER PREVIOUS LAPAROTOMY

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## ABSTRACT

Following the abdominal surgery, extensive adhesions often occur and they can cause difficulties during laparoscopic operations. However, previous laparotomy is not considered to be a contraindication for laparoscopy. The aim of this study is to present that an insertion of Veres needle in the region of umbilicus is a safe method for creating a pneumoperitoneum for laparoscopic operations after previous laparotomy. In the last three years, we have performed 144 laparoscopic operations in patients that previously underwent one or two laparotomies. Pathology of digestive system, genital organs, Cesarean Section or abdominal war injuries were the most common causes of previous laparotomy. During those operations or during entering into abdominal cavity we have not experienced any complications, while in 7 patients we performed conversion to laparotomy following the diagnostic laparoscopy. In all patients an insertion of Veres needle and trocar insertion in the umbilical region was performed, namely a technique of closed laparoscopy. Not even in one patient adhesions in the region of umbilicus were found, and no abdominal organs were injured.

KEY WORDS: laparotomy, laparoscopy, umbilicus, Veres needle

## INTRODUCTION

Great improvement in operative laparoscopy has been achieved so far, but pneumoperitoneum creation is one of the most important elements of the whole operative procedure. Closed laparoscopy using Veres needle for pneumoperitoneum creation, followed by entering the abdominal cavity with trocar, is the most common method of entry into the abdominal cavity used by gynecologists all over the world (1). During an open laparoscopy, a small laparotomy needs to be performed below umbilicus. Skin, rectal fascia and peritoneum is opened under visual control, and after that a trocar is applied and a pneumoperitoneum created. One half of all complications that arise during laparoscopy are caused by the technique of entering the abdominal cavity (2, 3). The number of complications presented in literature varies. The incidence of intestinal perforation in one study (4) is 5 in 10000 cases of laparoscopy, and 213 on 10000 cases in another study (5). It probably depends on indications for operation procedure, whether the patient previously underwent an operation in abdomen, or have had an adhesion caused by inflammatory process in abdomen. For pneumoperitoneum creation Veres needle is inserted in abdominal cavity through umbilicus, but some gynecologists prefer alternative entry for those patients with increased risk of complications (previous laparotomy,

adiposity etc.). In Obstetrics and Gynecology Hospital in Sarajevo we prefer Veres needle entry through umbilicus because we have not experienced any significant complication during pneumoperitoneum creating and trocar entry in abdomen in patients with higher risk and in patients who previously underwent laparotomy.

## MATERIAL AND METHODS

From 2002 to 2005 we performed 144 laparoscopies in patients who underwent one or two laparotomies previously. Most frequent indications for laparoscopy operations were: sterility, adnexal cysts and tumors, ectopic pregnancy and uterine tumors. Reasons for previous laparotomies were mainly pathologic changes in digestive tract, genital organs, Cesarean Section, abdominal injuries during the war or other injuries as presented in Table 1.

## OBJECTIVE

The aim of this study is to present that Veres needle entry in abdominal cavity in the umbilical region as a safe method for pneumoperitoneum creating for laparoscopy operations after previous laparotomy, as well as to show that trocar entry in the same place using appropriate technique does not cause complications.

## RESULTS

We have not experienced any complication or injuries to organs or blood vessels in abdominal cavity during laparoscopic procedures, pneumoperitoneum creating and trocar entry in abdominal cavity. In 7 patients the conversion to laparotomy was performed following diagnostic laparoscopy due to the possibilities that some complications might occur should procedure continue laparoscopically. Interestingly, we have noticed that in

LAPAROSCOPY AFTER PREVIOUS LAPAROTOMY	NUMBER OF PATIENTS
1. after appendectomy	20
2. after cystectomy	24
3. after adnexectomy	19
4. after salpingectomy	21
5. after hysterectomy	18
6. after Cesarean Section	21
7. after injuries in abdomen	6
8. after appendectomy and cystectomy	8
9. afterolecystectomy	7
TOTAL	144

TABLE 1. Performed laparoscopies after previous laparotomies

umbilical region, at the small part of abdominal wall, we did not find adhesion in any patient, although in some patients all anterior abdominal wall was covered with adherent omentum and some of them had strong adhesions of abdominal wall and bowel or abdominal wall and uterus. Some patients had two laparotomies previously, but umbilical region was entirely free of adhesions.

## DISCUSSION

Following the operative procedures in abdomen, severe adhesions occur often, causing problems during laparoscopic operations. The number of complications in gynecological laparoscopic operation is 4 in 1000 procedures, but the number of serious bigger complications is 10,1 in 1000 all operative laparoscopies 19% of which are urethral and 46% intestinal injuries (6). However, patients with increased risk of complications related to the technique of entrance in abdominal cavity are those with previous laparoscopy, adiposity and those with expected adhesions after inflammations in abdomen. Because of this, some gynecologists use technique of open laparoscopy in patients that might have intraabdominal adhesions after inflammation, and those that might have had previous laparoscopy, the obese or extremely underweight patients. The entering of abdominal cavity is the phase with the biggest risk of complications in laparoscopy as well as laparotomy (7). Because of that, the entering of abdominal cavity for pneumoperitoneum creating for laparoscopy is a subject for thinking and discussion. Historically looking, gynecologists use the technique of closed laparoscopy. The technique of open laparoscopy was first described by Hasson in 1971 (8). Despite the simplicity of the technique of open laparoscopy, less than 10% of gynecologists use this technique (9). Previous laparotomy is a significant risk factor for developing the complications that are related to the entering the abdominal cavity during the laparoscopy procedure (2). Complications are gastrointestinal lesions, blood vessel lesions and the impossibility of entering the abdominal cavity. The number of complications in the open technique of laparoscopy is significantly higher than that in the technique of closed laparoscopy, but this technique is applied in 90% of patient cases with previous laparotomy (10). Theoretically, an open or alternative entry into abdominal cavity is recommended for patients with higher risk, although this way of entry does not decrease complications (10). The use of Veres needle is still the most common way of entering the abdominal cavity and pneumoperitoneum creating during the laparoscopic operations despite other methods

such as direct insertion of trocar, technique of open laparoscopy, vaginal way and recently used optical trocar (11). The insertion of Veres needle at the Palmer

point in patients with previous abdominal operations is applied to avoid injuries during laparoscopy (12).

## CONCLUSION

Our experience allows us to insert Veres needle in the umbilical region for pneumoperitoneum creating and apply the technique of closed laparoscopy in all patients as well as those with previous laparotomy. Why did not we find adhesions at the very umbilicus? Supposedly, due to the poor vascularization of the umbilicus the adhesions are not formed, and therefore it is an appropriate place for the entrance into the abdominal cavity with the Veres needle and trocar.

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