Abstract

This study aimed to assess the magnitude of adhesiolysis required to resolve adhesive intestinal obstructions complicating laparoscopic procedures.

A retrospective study of 200 laparoscopically managed cases were collected from the records of both, Babil Hospital for gynecology-obstetrics & pediatrics and Hilla Teaching Hospital. They were 163 (81.5%) females, 37 (18.5%) males. These cases were collected from the records of 4 years from May 2000 up to May 2004. Then, these cases were followed up for 1-5 years from May 2000 up to May 2005 through the records of Hilla Teaching Hospital. The follow-up aim was to record cases that had undergone surgical adhesiolysis to resolve adhesional intestinal obstructions complicating these laparoscopic procedures.

The study included 200 laparoscopically managed patients during a period of 4 years. These 200 cases were distributed among 4 groups: 1st group: 150 laparoscopically cholecystectomized patients, 120 females (80%), 30 males (20%), 2nd group: 20 laparoscopically ovarian cystectomized patients, 3rd group: 20 cases of diagnostic laparoscopy, 15 females (75%), 5 males (25%), 4th group: 10 laparoscopically appendectomized patients, 8 females (80%), 2 males (20%). The follow-up of these cases with regard to developing adhesional intestinal obstruction and undergoing surgical adhesiolysis revealed that none of the cases underwent re-laparoscopy or open surgery for adhesiolysis, apart from 2 cases, both were females, developed adhesional intestinal obstruction but they responded conservatively. According to the informations obtained through direct communication with the managing surgeons inquiring about performing adhesiolysis in the private hospitals to some of their laparoscopically managed patients, no case underwent intestinal adhesiolysis within the study period.

The magnitude of surgical adhesiolysis in the form of re-laparoscopy or conventional surgery that will be required to resolve intestinal adhesions following intraperitoneal laparoscopic procedures is significantly low.
Introduction

Adhesion formation after abdominal operations causes significant morbidity. Tissue trauma distant from the site of adhesions increase their formation . A major advantage of laparoscopic surgery is decreased adhesion formation. Adhesiolysis was responsible for 303,836 hospitalizations in USA during 1994, primarily for procedures on the digestive and female reproductive systems. These procedures were accounted for 846,415 days of inpatient care and 1.3 billion dollars in hospitalization and surgeon expenditures. The risk of visceral injury during laparoscopy occurs mainly during the creation of the pneumoperitoneum and the insertion of the first trocar and is substantially greater in patients with previous history of conventional abdominal surgery or peritonitis, owing to the possible presence of abdominal wall adhesions. Previous abdominal surgery should not be an absolute contraindication to minimally invasive procedures. Adhesions are a common sequele of laparoscopic surgery, eventhough they are decreased by as much as three fourths in comparison with laparotomy. Laparoscopy is an excellent diagnostic modality in acute small bowel obstruction, the majority of which can be simultaneously managed. Adhesions are responsible for up to 80% of chronic postoperative abdominal pain and 60% of intestinal obstruction and they increase the technical difficulty of subsequent intraabdominal surgical procedures. The presence of adhesions from previous surgeries can add at least 15 minutes to the operative time for re-operations, both because of cautiousness needed when re-entering the abdomen and because of the adhesiolysis required to identify the anatomical structures at the operative site. A review of 18,912 patients with open surgery found that 2.6% required surgery for adhesive intestinal obstruction within the following 2 years. Another study followed 2,708 laparotomies for an average of 14.5 months and counted 26 cases (1%) that developed intestinal obstruction due to postoperative adhesions within 1 year of surgery.

Moderate to sever pelvic adhesions after laparoscopy may be responsible for 40% of infertility. Laciano al reported no adhesion at any site following laparoscopy, but for laparotomy they found significantly more frequent adhesions not only at the operative site (uterine horn) but also involving the distant bowel, urinary bladder and opposite uterine horn where no apparent injury had been inflicted. Ultrasonography as a non-invasive tool was used to attempt to classify the pelvic adhesions. Among adhesion preventing substances, adhesion barriers including expandepolytetrafluoroethylene PTFE and regenerated oxidized cellulose are the most effective.

Laparoscopic adhesiolysis still remains a useful and effective procedure for infertile couples with pelvic adhesions. Pelvic and para-aortic lymphadenectomy performed with transperitoneal laparoscopy does not increase adhesion formation when compared to extraperitoneal laparotomy in a porcine model. The transperitoneal (and extraperitoneal laparotomy) approach also induces significantly fewer adhesions than transperitoneal laparotomy. In order to minimize
adhesion formation following laparoscopy, nothing replaces good surgical technique. Basic principles of microsurgery, liberal irrigation of the abdominal cavity and instillation of a large amount of Ringer’s lactate at the completion of the procedure should be followed. Alternatively a second look laparoscopy to liberate the adhesions can be performed. [20]

Materials and Method
A retrospective study of 200 laparoscopically managed cases were collected from the records of both, Babil Hospital for gyneco-obstetrics & pediatrics and Hilla Teaching Hospital where laparoscopic procedures, surgical and gynecological, were performed. They were 163 (81.5 %) females, 37 (18.5 %) males.

These cases were collected from the records of 4 years from May 2000 up to May 2004, then these cases were followed up for 5 years from May 2000 up to May 2005 through the records of Hilla Teaching Hospital where laparoscopy for general surgical problems is performed. The follow up aim was to record cases that had undergone surgical adhesiolysis to resolve adhesional intestinal obstructions complicating the recorded laparoscopic procedures. In order not to forget a number of cases that might have been operated on in private hospitals, the managing laparoscopic surgeons were inquired to inform us about.

Results and Discussion
Laparoscopy was recently introduced in surgical practice in Babil province. Private hospitals are still lacking the laparoscope. The collected 200 laparoscopically managed cases were mainly females comprising 81.5 % of the total number. This can be explained by the following facts; first, cholecystectomy remained almost three times more frequent in females, and men with gall stones were less likely to have a cholecystectomy than women. 21. Secondly, 20 cases of ovarian cystectomy (only females). Third; the factor of cosmosis gained from laparoscopy using small incisions is mainly considered greatly by females. Fourth; the wide use of diagnostic laparoscopy in gynecological, especially, infertility investigations.

The study included only those cases who developed adhesional intestinal obstruction associated with significant symptoms and/or signs that made them consult their managing surgeons and eventually diagnosed and treated either conservatively or surgically by re-laparoscopy or conventional surgery.

The period of follow up of the 200 cases ranged between 1 to 5 years since the day of laparoscopic surgery. By inspecting the hospital records to identify the cases which were admitted in the surgical wards for intestinal adhesiolysis during the period from May 2000 to May 2005, the obtained result showed that none of the 200 patients required adhesiolysis whether through re-laparoscopy or open surgery. The results were also insured through questioning the managing laparoscopic surgeons to inform us about the cases that might have been managed for intestinal adhesions in the private hospitals and escaped the registration. Their reply included that no intestinal adhesiolysis was performed to any laparoscopically managed case within the limited period of the study. Beck and colleagues reported an incidence of small intestinal obstruction and adhesiolysis with open surgery within 2 years, an incidence of 2.6% in their series [21]. The number of the studied cases in my series was small and the period of follow up was not long enough, therefore, if the number is increased and the period of follow up is prolonged, the results will be more
fruitful and solid

**Conclusion**

The magnitude of surgical adhesiolysis in the form of re-laparoscopy or conventional surgery, that will be required to resolve intestinal adhesions following intraperitoneal laparoscopic procedures is significantly low. In comparison with the results listed in the literature a further workup is required to through light on the accuracy of these results by studying a large number of laparoscopically managed cases.

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**References**