Experimental
&
Clinical Article

The Results of Diagnostic Laparoscopy Examinations - An 8 - Years Experience

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OBJECTIVE: The aim of this study was to evaluate the results of diagnostic laparoscopy examinations performed in our clinic.

STUDY DESIGN: Hospital records of 93 patients, who had undergone diagnostic laparoscopy in our clinic between June 2001 and December 2008, were evaluated retrospectively.

RESULTS: The most common indications for diagnostic laparoscopy were infertility (n=81, 87.1%) and chronic pelvic pain (n=12, 12.9%). Pelvic findings were noted in 33.3% (27/81) of infertile patients and 58.3% (7/12) of patients with chronic pelvic pain. The frequencies of endometriosis and adhesions were 16.1% (n=15) and 9.6% (n=9), respectively, among all cases.

CONCLUSION: Diagnostic laparoscopy, used as the standard method for the assessment of patients with infertility and chronic pelvic pain, should be used more often in differential diagnosis. Inclusion of diagnostic laparoscopy in residency training programs would reduce the complication rates in future clinical practice.

Key Words: Laparoscopy, Diagnosis, Pelvic pain, Female infertility

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Introduction

Along with the increase in clinical experience and the number of trained physicians, diagnostic laparoscopy (DL) has become an increasingly used diagnostic tool nowadays.

Being a minimally invasive procedure, DL provides high quality intra-abdominal imaging. DL practitioners need to complete an extensive training program in order to become competent in abdominal insufflation, placement of trocars and other devices.

DL is often used in gynecology practice for the evaluation of infertility, and the other indications include chronic pelvic pain, acute abdomen and second-look procedures in gynecologic oncology.

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History of DL goes far back to 460-375 BC. The procedure has first been performed in vaginal examinations, using a light source and a mirror. The term "laparoscopy" was first been used by Korbsch in 1921. In 1946, Palmer reported the use of DL in the evaluation of 250 patients. Widespread indications of the procedure have been defined in early 1970s.[1]

As Turkish data regarding the use of DL was limited, Prof. Dr. Hikmet Hassa performed a survey to elucidate the historical use of the procedure in Turkey. According to his data, the first DL procedure in Turkey was performed by Prof.Dr. Hüsnü Kişnişçi and Prof.Dr. Habinot from Belgium in the Gynecology and Obstetrics Clinics of Hacettepe University in 1967.[1]

Three physicians who were trained in Johns Hopkins University as DL consultants (Dr.Hikmet Hassa from Eskisehir Osmangazi University, Dr.Füsun Aksu from Istanbul Zeynep Kamil Hospital and Dr. Havva Oral from Ankara Zekai Tahir Burak Hospital) initiated training and practice programs throughout the country, between 1979 and 1980. Within a decade, DL has started to be performed in many university and Government hospitals.[1]

After the infrastructure of Zonguldak Karaelmas University Hospital, founded in 2000, was completed, DL procedure has started to be performed in the Gynecology and Obstetrics Clinic since 2001.

The aim of this study was to evaluate the findings of diag-

nostic laparoscopy procedures performed in our clinic in an attempt to share our results and contribute to Turkish data series.

Material and Method

Patient records of 93 diagnostic laparoscopy cases performed in our clinic between June 2001 and December 2008 were evaluated retrospectively. The findings were evaluated according to laparoscopy indications. A closed (intraumblical access by Veress needle) or an open technique was used for accessing the peritoneal cavity. Gas pressure was set at 15-18 mmHg and the baseline flow rate was adjusted as 1 L/minute. Intraabdominal pressure was monitorized automatically by an Electronic Endoflator® (Karl Storz Mfg., Tuttlingen, Germany). Direct imaging of internal organs was achieved using additional 5-10 mm lateral ports (Endopath®, Ethicon Endosurgery, Inc., Cincinnati, USA) introduced through the avascular area lateral to the inferior epigastric vessels and the uterus was elevated using a single use uterine manipulator (Kronner Manipujector®, Cooper Surgical, Medical Mfg., Roseburg, USA; Endopath® Ethicon Endo-Surgery Inc., Cincinnati, USA).

Results

Among 93 patients evaluated by DL, open technique was used in 20 patients (21.5%). CO2 insufflation was performed for all patients for gas laparoscopy and none of the patients had a history of previous abdominal surgery. DL indications were infertility in 81 (87.1%) and chronic pelvic pain in 12 patients (12.9%). Pelvic findings were noted in 27 cases with infertility (33.3%) and in 7 cases with chronic pelvic pain (58.3%). Among patients with chronic pelvic pain, endometriosis and adhesions were noted in two (16.6%) and five patients (41.6%)., respectively.

DL findings in infertility patients are presented in table 1. When the total study population (n=93) was considered, the frequency of endometriosis was 16.1% (n=15) and the frequency of adhesions was 9.6% (n=9).

Table 1: Pelvic findings on diagnostic laparoscopy in infertility cases (n=81)

Findings	n	%
Endometriosis	13	16.0
Adhesion	4	4.9
Endometriosis + adhesion	1	1.2
Paratubal cyst	1	1.2
Tubal occlusion	6	7.4
Adhesion + tubal occlusion	1	1.2
Hydrosalphinx	1	1.2
Total	27	

Discussion

Peritoneal adhesions are basically abnormal fibrous bands joining the two peritoneal surfaces. These fibrous bands may be few, very thin and asymptomatic in some cases, while they may be quite extensive, thick, vascular and even calcified leading to severe clinical problems in the others. Depending on the anatomical location, they may cause abdominal pain, intestinal obstruction, infertility or difficulty during re-operations. It is widely accepted that laparoscopic adhesiolysis is the gold standard treatment method in chronic pelvic pain.[2] Adhesions were noted in 9.6% (n=9) of the DL cases performed in our clinic. While this rate was 6.1% (n=5) in infertility patients, it was 41.6% (n=5) in patients with chronic pelvic pain. This indicates that adhesions played a more significant role in patients with pain.

It has been reported that 40% of moderate to severe adhesions lead to infertility and that adhesiolysis may increase pregnancy rates up to 50% in patients with severe adhesions.[2] However, pelvic adhesions may have more than one functional cause and surgical treatment alone may not provide a definite solution. Adhesions may reoccur in the sites of adhesiolysis and although adhesion formation decreases after DL, the problem is not totally resolved.[3] We performed adhesiolysis in all patients due to its potential benefits on both fertility and pain.

It is known that endometriosis is present in 40% of all infertility cases.[4] Complete removal of the ectopic endometrial tissue is essential for the successful treatment of endometriosis. Treatment of endometriosis is based on the visualization and complete removal of the lesion. Although typical endometriotic lesions can be diagnosed by other means, suspicious lesions may be overlooked if DL is not performed routinely. Endometriosis was noted in 16.6% of patients with chronic pelvic pain and 17.2% of patients with infertility in our study.

DL has several advantages over laparotomy, including less blood loss, less need for blood transfusion, less need for postoperative analgesia and shorter hospital length of stay. On the other hand, it is not a completely risk-free procedure, either. Complications may occur as seen in every surgical procedure. Current complication rate of diagnostic DL has been reduced to as low as 0.19% .[5] However, proceeding to laparotomy may be required in about 6.3% of the cases.[6]

The individual experience of the physician performing the DL is associated with less need for proceeding to laparotomy and a lower number of intestinal injuries, in addition to higher treatment rates of DL complications.[7]

Complications occur during the induction of pneumoperitoneum and opening of the ports in one out of three patients

with complications, and the complication is not noticed during the procedure in one out of four patients.[7]

In our series, subcutaneous emphysema developed in four patients (4.3%), and one patient with tubal torsion underwent laparotomy (1.0%). During the introduction of a 5 mm lateral trocar vascular injury in the abdominal wall occurred in one patient (1.0%) and, she was treated laparoscopically.

Conclusion

Due to the advances in medical technology, diagnostic procedures are increasingly included in routine clinical practice. Modern medical practice requires close follow-up and instant implementation of these novel techniques. The use of these new techniques should be generalized through postgraduate training programs and certification courses. The art of medicine in which master-apprentice relationship is of crucial importance should also be regularly updated by implementation of modern techniques.

Within the context of an educational project initiated in 1979, laparoscopic surgery has started to be performed in our country and then its use has widely increased. By conducting this study, we aimed to contribute to the national data and to the relatively young laparoscopic surgery history of our country. As our learning curve rises, our clinical practices and patient spectrum can be expected to increase in the future.

Tanısal Laparoskopi Sonuçları 8 Yıllık Deneyim

AMAÇ: Bu çalışmanın amacı kliniğimizde yapmış olduğumuz tanısal laparoskopi sonuçlarının değerlendirilmesidir.

GEREÇ VE YÖNTEM: Haziran 2001 - Aralık 2008 tarihleri arasında kliniğimizde tanısal laparoskopi yapılan 93 hastanın kayıtları retrospektif olarak değerlendirildi.

BULGULAR: Tanısal laparoskopi için en sık endikasyonlar sırasıyla infertilite (n=81, %87,1) ve kronik pelvik ağrıydı (n=12, %12,9). İnfertil hastaların 33.3'ünde (27/81) ve kronik pelvik ağrısı bulunan hastaların %58,3%'ünde (7/12) pelvik patoloji gözlenmiştir.Bütün vakalar içinde endometriosis ve adezyon görülme sıklığı sırasıyla %16,1 (n=15) ve %9,6'dı (n=9).

SONUÇ: İnfertilite problemi ve kronik pelvik ağrısı bulunan hastalarda tanısal laparoskopi sık kullanılmaktadır. Uzmanlık eğitim programlarına tanısal laparoskopinin dahil edilmesi klinik pratikte komplikasyon oranlarını düşürecektir.

Anahtar Kelimeler: Laparoskopi, Tanısal, Pelvik ağrı, Kadın infertilitesi

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