1993

FERTILITY AND STERILITY

Vol. 59, No. 4, April 1993
Printed on acid-free paper in U.S.A.

Adhesions After Resection of Ovarian Endometriomas

To the Editor:

The article by Canis et al. (1) underscores the importance of a consistent classification system of old and new adhesion formation. Specifically, the meaning of the term "de novo" must be standardized (1).

In our long-term and ongoing work with the problem of adhesions, as well as in the works of others, several important and very practical conclusions could possibly have been confirmed mutually had the same point of reference been used. Below are a few prominent examples of these conclusions.

Using different definitions of de novo, previous investigators have shown that the incidence of adhesion formation is lower after operative laparoscopy than with laparotomy (2, 3). It was also shown that women who became pregnant after surgery had fewer postoperative adhesion than women who never became pregnant (2). Thus, although not conclusively proven, it appears that the degree of adhesion formation after surgery depends on each individual's genetic structure (2).

All types of surgery cause adhesions to varying degrees at their immediate site. The rate of adhesion formation is also largely dependent on the surgeon's technique and the instruments and materials used (Nezhat C, Nezhat F, abstract) (4). As previously shown, the laparoscopic approach may decrease significantly or eliminate completely the formation of de novo adhesions, when de novo is defined as new adhesions involving areas never previously touched by instruments or disturbed by dissection (2, 3).

Mutual confirmation of investigative results and comparison of various surgical techniques, instrumentation, and materials only may be possible if a single de novo standard is utilized.

Camran Nezhat, M.D.
Clinical Obstetrics and Gynecology
Mercer University School of Medicine
Macon, Georgia
Center for Special Pelvic Surgery
Atlanta, Georgia

Anthony Luciano, M.D.
Obstetrics and Gynecology
Reproductive Endocrinology and Infertility
University of Connecticut Medical School
Farmington, Connecticut
October 13, 1992

REFERENCES

1. Canis M, Mage G, Wattiez A, Chapron C, Pouly JL, Bassil S. Second-look laparoscopy after laparoscopic cystectomy of large ovarian endometriomas. Fertil Steril 1992;58:617–9.
2. Nezhat C, Nezhat F, Metzger DA, Luciano AA. Adhesion reformation after reproductive surgery by videolaseroscopy. Fertil Steril 1990;53:1008–11.
3. Operative Laparoscopy Study Group. Postoperative adhesion development after operative laparoscopy: evaluation at early second-look procedures. Fertil Steril 1991;55:700–4.
4. Nezhat C, Nezhat F, Silfen SL, Schaffer N, Evans D. Laparoscopic myomectomy. Int J Fertil 1991;36:275–80.

To the Editor:

The recent article by Canis et al. (1) confirms previous findings (2–4) that postoperative adhesion development is an all to frequent occurrence after the performance of intra-abdominal surgery. In attempts to delineate the incidence of postoperative adhesion development and the efficacy of interventions, postoperative adhesions have been subdivided into those that represent adhesion reformation and those that represent de novo adhesion formation (1–5). Validity for this distinction is based on animal studies that demonstrate greater difficulty in preventing postoperative adhesion development at sites of former adhesions that were lysed (e.g., adhesion reformation) as opposed to sites with no adhesions initially (e.g., de novo adhesion formation) (5).

However, in human clinical evaluations, the term "de novo adhesion formation" has been used by different investigators in describing postoperative adhesion development in similar, but not identical, situations. Diamond et al. (2) have used the term "de novo adhesion formation" to represent the identification of adhesions (usually at the time of a second-look procedure) at sites that did not have adhesions at the time of the initial operative procedure. This definition would thus include both operated (e.g., neosalpingostomy, oopherocystectomy, and so on) and nonoperated sites, so long as adhesions were not present at that site at the time of the

initial operative procedure. In contrast, Nezhat et al. (3, 4) have used the term "de novo adhesion formation" to refer solely to the latter situation, namely the development of adhesions at sites that at the initial operation neither had adhesions that were lysed nor had an operative procedure performed on that site.

To minimize future confusion and to facilitate more precise comparison of antiadhesion interventions, we would like to propose the following classification system for use in studies examining postoperative adhesion development.

Type 1. De novo adhesion formation. Development of adhesions at sites that did not have adhesion initially.

1. No operative procedure at site of adhesion formation.

2. Operative procedure performed at site of adhesion formation.

Type 2. Adhesion reformation. Redevelopment of adhesions at sites at which adhesiolysis was performed.

1. No operative procedure at site of adhesion reformation (other than adhesiolysis).

2. Operative procedure performed at site of adhesion reformation (in addition to adhesiolysis).

Michael P. Diamond, M.D.
Division of Reproductive Endocrinology
Departments of Obstetrics and Gynecology and Surgery
Vanderbilt University
Nashville, Tennessee

Farr Nezhat, M.D.
Fertility and Endocrinology Center
Laser Endoscopy Institute of Atlanta
Atlanta, Georgia
October 2, 1992

REFERENCES

1. Canis M, Mage G, Wattiez A, Chapron C, Pouly JL, Bassil S. Second-look laparoscopy after laparoscopic cystectomy of large ovarian endometriomas. Fertil Steril 1992;58:617–9.
2. Diamond MP, Daniell JF, Feste J, Surrey MW, McLaughlin, DS, Friedman, S, et al. Adhesion reformation and de novo adhesion formation after reproductive pelvic surgery. Fertil Steril 1987;47:864–6.
3. Nezhat C, Nezhat F, Metzger DA, Luciano AA. Adhesion reformation after reproductive surgery by videolaseroscopy. Fertil Steril 1990;53:1008–11.
4. Nezhat C, Nezhat F, Silfen SL, Schaffer N, Evans D. Laparoscopic myomectomy. Int J Fertil 1991;36:275–80.
5. Diamond MP, Hershlag A. Adhesion formation/reformation. In: diZerega GS, Malinak RS, Diamond MP, Linsky C, editors. Treatment of post surgical adhesions. New York: Alan Liss, Inc., 1990:23–34.

Reply of the Authors:

We thank Drs. Nezhat, Luciano, Diamond, and Nezhat for their letters. In our article the term "de novo" was used to define postoperative adhesion development at sites with no adhesions initially, but most of these areas were traumatized by the surgical procedure (1).

The following two reasons explain why we may have mistakenly extended the term "de novo" to all pelvic areas free of adhesions at laparoscopic treatment.

First, in patients with moderate or severe endometriosis, most of the pelvic areas are involved in the surgical procedure, so that de novo adhesions as defined previously (2) are unlikely to be of clinical importance. In contrast, adhesions induced by the surgical treatment are probably essential when managing infertile patients. Therefore, to evaluate the consequences of laparoscopic procedures routinely used when treating patients with moderate or severe endometriosis, we believed that it was essential to study areas involved in the surgical treatment.

Second, the term "de novo" had been used previously in areas with no adhesions at the initial procedure, including operated and nonoperated areas (3).

Our results demonstrated that the advantages of laparoscopic surgery should not be overestimated and that prospective studies of laparoscopically induced adhesions are necessary. Such results can be obtained only at second-look laparoscopy. We agree that a consistent classification system of postoperative adhesions is required. The system proposed by Drs. Diamond and Nezhat appears simple and easy to use.

As the type and the extent of adhesions are of utmost prognostic importance and adhesions have been graded using several classifications (2, 4), these data also will need to be standardized using a system that includes a more accurate description than that included in the Revised American Fertility Society endometriosis classification (5). Finally, the interval between the two surgical procedures either should be reported carefully or standardized, because time lapse since the surgical procedure may influence adhesion grading.

Michel Canis, M.D.
Gerard Mage, M.D.

Arnaud Wattiez, M.D.
Charles Chapron, M.D.
Jean Luc Pouly, M.D.
Maurice Antoine Bruhat, M.D.
Department of Obstetrics, Gynecology and Reproductive Medicine
Polyclinique de l'Hotel Dieu
Centre Hospitalier Regional et Universitaire de Clermont Ferrand
Clermont-Ferrand, France
December 4, 1992

REFERENCES

1. Canis M, Mage G, Wattiez A, Chapron C, Pouly JL, Bassil S. Second-look laparoscopy after laparoscopic cystectomy of large ovarian endometriomas. Fertil Steril 1992;58:617–9.
2. Nezhat CR, Nezhat FR, Metzger DA, Luciano AA. Adhesion reformation after reproductive surgery by videolaseroscopy. Fertil Steril 1990;53:1008–11.
3. Diamond MP, Daniell JF, Feste J, Surrey MW, McLaughlin DS, Friedman S, et al. Adhesion reformation and de novo adhesion formation after reproductive surgery. Fertil Steril 1987;47:864–6.
4. Operative Laparoscopy Study Group. Postoperative adhesion development after operative laparoscopy: evaluation at early second-look procedures. Fertil Steril 1991;55:700–4.
5. The American Fertility Society. Revised American Fertility Society Classification of Endometriosis: 1985. Fertil Steril 1985;43:351–2.

Management of the Transfer Cycle—After Freeze/Thaw

To the Editor:

Patterson et al. (1) recently suggested the use of exogenous E_2 without GnRH analogue suppression for cycle control in normally cycling women undergoing frozen/thawed ET. We previously used the same method, giving 2 mg oral E_2 valerate three times a day to cycling women undergoing oocyte donation (2). E_2 treatment was started early in the cycle in an attempt to suppress endogenous gonadotrophin, induce proliferative endometrial response, and render LH monitoring unnecessary. However, we subsequently found that oral E_2 therapy is not always effective in suppressing ovulation in some patients, especially in young cycling women (3). Failure to suppress ovulation in patients taking oral E_2 may lead to ETs being performed outside the so-called "implantation window," resulting in reduced pregnancy rates.

In an attempt to bypass the enterohepatic circulation, where most of the orally absorbed E_2 is quickly metabolized, we used the sublingual route and obtained higher circulating levels with good cycle control (3). In view of the unpredictable efficacy of oral E_2 treatment to suppress ovulation, we abandoned this method for cycle control in cycling oocyte recipients and in patients undergoing frozen/thawed ET in favor of GnRH analogue down-regulation followed by estrogen and progesterone treatment or sublingual E_2.

Paul Serhal, M.D.
Assisted Conception Unit
University College Hospital
Private Patients Wing
London, England
October 19, 1992

REFERENCES

1. Pattinson HA, Greene CA, Fleetham J, Anderson-Sykes SJ. Exogenous control of the cycle simplifies thawed embryo transfer and results in a pregnancy rate similar to that for natural cycles. Fertil Steril 1992;58:627–9.
2. Serhal P, Craft I. Oocyte donation in 61 patients. Lancet 1989;1:1185–7.
3. Serhal PF. Oocyte donation and surrogacy. Br Med Bull 1990;46:756–812.

Reply of the Authors:

Dr. Serhal, in keeping with many centers, has found it preferable to use a GnRH analogue down-regulation followed by estrogen and progesterone for cycle control in patients undergoing frozen/thawed ET. I would agree that there may be some women in whom the use of estrogen without down-regulation may fail to suppress ovulation. The disadvantage of using the GnRH analogue, however, is the expense. This may be more of a consideration in Canada than it is in the United Kingdom, but it does add significantly to the cost of treatment. We believed that if we could achieve a reasonable pregnancy rate with transfers without down-regulation that this would be preferable, and this appeared to be the case (1).

Since the submission of this data, we have attempted to perform a randomized control trial of a natural cycle versus estrogen-progesterone controlled cycles without suppression. It has been extremely difficult to do this because 90% of patients have stated a preference for estrogen-progesterone simply because of the convenience involved. I suspect that there might not have been such an enthusiastic acceptance of this protocol had down-regulation been involved. During this time, our pregnancy rates per ET, transferring two embryos at a time, has been about 18%.

Whereas I would agree that there are theoretical advantages to down-regulation, part of our aim is