set forth in this text are in accord with current recommendations and practice at the time of publication. However, in view of ongoing research, changes in government regulations, and the constant flow of information relating to drug therapy and drug reactions, the reader is urged to check the package insert for each drug for any change in indications and dosage and for added warnings and precautions. This is particularly important when the recommended agent is a new and/or infrequently employed drug.

All rights reserved.
No part of this publication may be translated into other languages, reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, recording, microcopying, or by any information storage and retrieval system, without permission in writing from the publisher.

© Copyright 1987 by S. Karger AG, P.O. Box, CH- 4009 Basel (Switzerland)
Printed in Switzerland by Thür AG Offsetdruck, Pratteln
ISBN 3-8055-4627-0

Contents

Preface IX
Introduction XI

Spontaneous Evolution

Chairmen: C. Sureau (Paris); V. Buttram (Houston, Tex.)

Darbois, Y. (Paris): Etiological Factors of Endometriosis 1
Schenken, R.S. (San Antonio, Tex.): Microscopic Endometriosis 7
Wheeler, J.M. (New Haven, Conn.); Malinak, L.R. (Houston, Tex.): Recurrent Endometriosis 13
Motashaw, N.D. (Bombay): Endometriosis in Young Girls 22
Michel, G.; Prade, M.; Castaigne, D. (Villejuif): Endometriosis and Cancer 28
Dahlberg, B. (Malmö): A Male Factor in Endometriosis. Correlation between Endometriosis and Asymptomatic Bacteriospermia in Male Partners: A NonInvasive Infertility Treatment 36

Pathogeny

Chairmen: S. Dexeus (Barcelona); M. Ravina (Paris)

Kauppila, A.; Rajaniemi, H.; Rönburg, L.; Vihko, R. (Oulu): Receptor Disorders in Endometriosis 40
Dmowski, W.P. (Chicago, 111.): Immunologic Aspects of Endometriosis 48
Koninckx, P.R. (Leuven): Pelvic Endometriosis: a Consequence of Stress 56
Badawy, S.Z.A.; Cuenca, V.; Marshall, L. (Syracuse, N.Y.): Peritoneal Fluid Prostaglandins in Patients with Endometriosis 60
Liu, J.; Lian, L.; Wang, Y.; Han, M.; Sun, A.; Huang, R. (Peking): The Immunological Study of Patients with Endometriosis 66

Contents VI

Classification and Diagnosis

Chairmen: G. Pontonnier (Toulouse); M. Roy (Québec)

Buttram, V.C., Jr. (Houston, Tex.): Classification of Endometriosis 73
Philippe, E.; Charpin, C. (Strasbourg et Marseille): Pathology of Endometriosis 84
Barbieri, R.L. (Boston, Mass.): CA-125 and Endometriosis 103
Boog, G.; Penot, P.; Momber, A. (Brest): Ultrasound as a Diagnostic Aid in Endometriosis 119

Physiopathology of Sterility

Chairmen: J.P. Dubecq (Bordeaux); M. Thibault (Paris)

Brosens, I.A.; Comillie, F.J. (Leuven): Peritoneal Endometriosis 125
Rock, J.A.; Rezai, N.; Berger, N.A.; Ghodgaonkar, R.B.; Dubin, N.H. (Baltimore, Md.): Fluid Volume and Prostanoid Concentration during the Proliferative and Periovulatory Phase of the Menstrual Cycle 138
Mage, G.; Chany, Y.; Bruhat, M.A. (Clermont-Ferrand): Endometriosis: Mechanical Factors of Infertility 144
Salat-Baroux, J.; Antoine, J.M. (Paris): Physiopathology of the Proximal Tubal Lesions 147

Free Communications 150

Posters 156

Uterus-Peritoneal Fluid

Chairmen: A Netter (Paris); P. Dmowski (Chicago, 111.)
Contents VII

Hormonal Treatment

Chairmen: K.S. Moghissi (Detroit, Mich.); A.J. Audebert (Bordeaux)

Spira, A.; Mayaux, M.J. (Le Kremlin-Bicêtre): Evaluation of Results in Infertility Therapy 212

Dmowski, W.P. (Chicago, 111.): Danazol-Induced Pseudomenopause in the Management of Endometriosis 220

Coutinho, E.; Gonçalves, M.T.; Azadian-Boulanger, G.; Silva, A.R. (Bahia): Endometriosis Therapy with Gestrinone by Oral, Vaginal or Parenteral Administration 227


LH-RH Agonist Treatment

Chairmen: M. L’Hermite (Brussels); B. Jacquetin (Clermont-Ferrand)


Rolland, R.; Franssen, A.M.H.W.; Willemsen, W.N.P. (Nijmegen); Kauer, F.M.;
Zijlstra, J.A. (Groningen); Veen, A.J. van f (Amsterdam): The Effect of LHRH
Agonist Therapy in the Treatment of Endometriosis (Abstract) 267
Han, M.; Wang, Y.; Tang, M.; Ge, Q.; Zhou, L.; Zhu, P.; Sun. Y. (Peking): Gossypol
in the Treatment of Endometriosis and Uterine Myoma 268

Surgical Treatment

Chairmen: J.H. Dorsey (Baltimore, Md.); J. Seneze (Paris)

Pouly, J.L.; Manhes, H.; Mage, G.; Canis, M.; Bruhat, M.A. (Clermont-Ferrand):
Laparoscopic Treatment of Endometriosis (Laser excluded) 280
Boeckx, W.; Brosens, I. (Leuven): Microsurgery for Endometriosis 286
Mage, G.; Chany, Y.; Bruhat, M.A. (Clermont-Ferrand): Intra-Abdominal Conservative
Surgical Treatment for Endometriosis by CO2 Laser 297

Contents VIII

Dorsey, J.H. (Baltimore, Md.): Surgical Treatment of Endometriosis with the KTP
532 Laser (Abstract) 302
Nezhat, C.; Crowgey, S.R.; Garrison, C.P. (Atlanta, Ga.): Surgical Treatment of
Endometriosis via Laser Laparoscopy and Videolaseroscopy 303

Free Communications 313

Palliative Treatments

Chairmen: R. Edwards (Cambridge); R. Asch (City Drive Orange, Calif.)

Frydman, R.; Belaisch-Allart, J.C. (Clamart): Results of in vitro Fertilization for
Endometriosis 328
Devoeyp, P.; Braeckmans, P.; Camus, M.; Khan, I.; Smith, J.; Staessen, C.; Van den
Gamete Intra-Fallopian Transfer versus in vitro Fertilization and Embryo
Transfer in Endometriosis 332
Mares, P.; Laffargue, F.; Viala, J.L. (Montpellier): Endometriosis and Medically
Assisted Reproduction 337

Indications and Results
Why did Endometriosis 1986, International Symposium come into being?

Because the remarkable work of one of the doctors in our department meant that we read 500 articles on endometriosis. To our astonishment we found that the pathogenesis was not always clearly perceived, even if some workers have made some progress in the fields of immunology and hormonology; that the evaluation of endometriosis goes no further than a 'geographical' description, which is necessary, yes, but how limited! for how then can microscopic forms be taken into account? how can the evolutivity of a lesion be assessed? That treatments were judged by subjective criteria such as pain, or were often poorly assessed as is the case for sterility!

Because for 10 years we have been striving to understand infertility, to perfect new techniques such as laparoscopy and the laser, to establish new methodologies such as laparoscopic surgery. Endometriosis is implicated in all these various approaches, giving rise alternately to hope and disappointment. At one moment it seemed at long last to have been properly catalogued. The following year endometriosis was again a problem because of an incomprehensible evolutivity and because of microscopic forms inaccessible to laser surgery. Now accused of causing many cases of sterility, then the next year declared guilty simply of causing mechanical sequelae.

Because we saw that a ‘semantic’ approach would result in a deeper
understanding of this many-sided disease. By bringing together in Clermont-Ferrand the most advanced specialists in the world in this field and giving them three days to tackle all the facets of this mysterious ailment, they would be able to compare hopes and disappointments, come to a consensus on certain points, and agree on the major lines for research in the future.

V.C. Buttram of Houston, P. Dmowski of Chicago and A. Audebert of Bordeaux, who are deeply interested in endometriosis, joined us in this new venture which gradually took form. The result was 70 speakers and chairmen sharing their thoughts, describing the progress in their work and their hopes in their research. This volume is the testimony thereof. Less tangible but no less important were the confrontations and the exchanges of ideas which continually occurred in our ancient streets, chateaux and churches which thus played their own part in the advancement of gynecology today!

I particularly wish to thank those who helped us organize this meeting and those who often made a very long journey to Clermont-Ferrand, and who proved that intellectual excellence can go hand in hand with warmth.

We have agreed to meet again as follows:

Endometriosis 1989, in the USA in Houston,
Endometriosis 1991, in Louvain, Belgium,
Endometriosis 1993, perhaps Beijing, China?

To conclude, best wishes to everyone and may your work prove fruitful.

M.A. Bruhat

I would like to make a special thank to those who helped us make a success of our meeting:

Marie Josèphe Mizoule
Elizabeth Petit
Bernadette Claustre
Reine Guerry
Michèle Mascart
Martine Sbizzera
Josette Thevenon
Introduction

Once again, endometriosis! After so many years of clinical observation, experimentation, reflection, improvement in diagnostic procedures, and therapeutic trials, a symposium like this one in Clermont-Ferrand was badly needed.

Clermont-Ferrand is a medium-sized town situated in the centre of France. It is sometimes difficult to reach, particularly in winter, and has four major characteristics: its weather which may, sometimes, be fine, its marvellous mountain environment, its famous Michelin Tyre Company known the world over and its very active Medical School.

Amongst the medical specialities which can be found at the University of Clermont-Ferrand, the Department of Obstetrics and Gynecology is certainly one of the most active, efficient, thought-provoking, sometimes provocative and this is mainly due to its chairman Maurice Bruhat. For many years now he has been involved in the introduction of some of the most recent techniques into the field of gynecology, namely the use of laser, and the operative laparoscopy. This explains his interest in endometriosis and his motivation for organizing this timely symposium.

It was indeed time to carry out a synthetic analysis of the data that have been accumulated over the last few years and this is precisely the aim of this book. Of course there has been no dramatic discovery which would explain all of the mysteries of this curious medical situation, there is still a multitude of trends which would clarify our understanding of endometriosis.

Introduction XII

During the past years tremendous progress has been achieved in the treatment of endometriosis. The surgical approach, by open surgery, by laser, by laparoscopy or by a combination of these techniques is now frequently associated with medical treatment with new steroids and with the gonadotropin-releasing hormone agonists. These treatments provide a
maximal conservation of the genital organs and eventually of the reproductive capacity. However, despite these advances, we are still not satisfied since its recurrence is frequent, and side effects may occur; amongst these it is surprising how little information we have concerning the long-term bone situation and the overall calcium metabolism of these patients submitted to such ‘menopause-like’ hormonally induced conditions. Similarly we need suggestions about the kind of postmenopausal supplementary hormone treatment which may be administered to patients who have previously suffered from endometriosis and have therefore received high doses of steroids or peptides over long periods of time.

We are also not happy about the ill-defined relationship which seems to exist between endometriosis and infertility. There is clearly a relationship which has been demonstrated by all the epidemiological studies, including the quite large one recently carried out in France by the Endometriosis Study Group (GEE).

But what is the precise relationship? Obvious for mechanical reasons in cases presenting very large endometriotic lesions, this relationship is by no means clear when the lesions are small. This brings us to the very controversial area of the choice of therapy, surgical or long-term medical thus postponing attempts of fecondation, and to the important point of the treatment of infertility in the presence of endometriosis, including ovarian stimulation, IVF or GIFT.

From a pathophysiological point of view, since a possible association with luteinized unruptured follicles (LUF) syndrome seems well documented, what is the precise mechanism that is responsible for the associated infertility, what is the relationship between LUF and psychological stress? In addition what are the relationships between this infertility and the composition of the intraperitoneal fluid; is there a possibility that it may modulate tubal behaviour or, as has been suggested, sperm behaviour?

Despite the great progress that has been made over the last few years there are many fundamental questions that remain to be answered. For example: what is (or are) the mechanism(s) of endometriosis? Clinical observations, experimental trials, and immunological approaches have been used without bringing us any definitive enlightenment. Of particular interest in this respect are the behavioral differences between normal endometrium and ectopic tissue during the menstrual cycle: Biochemical (including receptors) studies, and microscopic examination, reveal marked
differences between both these tissues, as well as differences in their reactions
to hormonal influences both physiological and pharmacological.
This observation means that we really do not understand clearly the
mechanism of action of the hormonal treatment. The classical explanation
of the ‘menopause-like’ induced situation, of the arrest of a supposed menstrual
cycle within the ectopic tissue, may be misleading. It may be necessary
to look for other mechanisms of action, such as immunologic, growth
or angiogenic factors. However, it cannot be denied that a relationship
with hormonal influences does exist, as demonstrated by the natural history
of endometriosis during the genital life, or by the situation reported
during the symposium of the occurrence of endometriosis in males submitted
to oestrogenic treatment for carcinoma of the prostate.
In view of the description of infraclinic lesions, of the advocated use of
biopsies for their diagnosis, one can even wonder provocatively if endometriosis
is really an abnormal situation. What is, in this respect, the true
evolutivity of these very small lesions? What also is the relationship
between endometriosis and infection, what is the adequate place for antiinflammatory
agents, including antibiotics, cortisone or non-steroid antiinflammatory
drugs?
What is the precise place of the immunological mechanisms in the
pathogeny and the pathophysiology of the situation? Does it correspond to
a situation of local immunodeficiency allowing the graft of ectopic tissue or
to a kind of autoimmune disease? What is the responsibility of the so-called
social or sociopsychologic factors, could it be a relationship between
changes in immunologic responses and psychological stress?
Finally, is it possible also to ask, as was done during the symposium
provoking very strong reactions, a naive question: What is the relationship
between adenomyosis and so-called external endometriosis, are they two
aspects of the same disease although aetiologically and topographically
different, but with common points in the biology of the ectopic tissue, or
are they, like so many claim, two completely different diseases? If this is
the case, what is the precise place of the tubal endometriosis - a diverticularly
lesion like adenomyosis, or a true ‘external’ endometriosis like the
ovarian or peritoneal one?

Introduction XIV

The great hope which comes from a symposium like this one is that
further progress in the understanding of this strange situation will quite
probably merge in the more or less distant future from the biological,
including biochemical and immunological, studies at the cellular level.
With this great hope, let us thank once again Maurice Bruhat for his
very successful enterprise.

Claude Sureau

Past President of the International Federation of Gynecology and Obstetrics (FIGO)
President of the French Endometriosis Study Group (GEE)