Current Strategies for Endometriosis Management

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KEYWORDS

• Endometriosis • Laparoscopy • Endometrioma • Pelvic pain • Infertility

KEY POINTS

- There are several medical approaches to the management of endometriosis, all of which are fairly comparable in efficacy.
- Surgical evaluation is useful for the diagnosis of endometriosis, when medical treatments fail, and to enhance fertility.
- Endometriomas causing pain or those greater than 4 cm should be treated surgically, but damage to the ovary during cystectomy should be minimized.
- Fertility treatments in the setting of endometriosis should be based on stage of disease, age, and other factors that affect fecundity.

INTRODUCTION

Endometriosis, the presence of endometrial glands and stroma outside of the endometrial cavity, represents one of the most challenging gynecologic conditions to manage given its insidious onset, surgical diagnosis, association with pelvic pain and infertility, and often progressive nature. Endometriosis is a chronic disease affecting at least 10% of reproductive-aged women, but is found in approximately 40% of infertile women[1] and up to 90% of women with pelvic pain.[2] Risk factors include family history, low body mass index, alcohol use, smoking, particularly in the setting of infertility, Caucasian race, prolonged estrogen exposure as with early menarche or late menopause, and nutritional/environmental factors.[1,3,4]

The classic triad of endometriosis symptoms, dysmenorrhea, dyspareunia, and dyschezia, raises clinical suspicion for this disorder. However, the substantial overlap of endometriosis symptoms with other conditions causing pelvic pain, both

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gynecologic and nongynecologic, combined with the limitation of pelvic examination in detecting endometriosis, makes clinical diagnosis challenging. Furthermore, the amount of endometriosis present does not necessarily correlate with symptoms,[5] and therefore, the usefulness of available staging systems is limited.[6] Ultimately, surgical intervention is required for confirmation of endometriosis, and this, in part, contributes to the delayed diagnosis of this disorder, sometimes over a decade, particularly in the younger population,[7,8] wherein conservative, nonsurgical interventions tend to be prolonged. Whether such delayed diagnosis affects the progression of the disease and its long-term sequelae, such as infertility, remains unclear.

The challenging nature of endometriosis, in part, stems from a still limited understanding of its pathophysiology. Various theories have been proposed for its development, including retrograde menstruation, coelomic metaplasia, and lymphatic or hematologic spread.[9] More recently, stem cells have been implicated in the pathogenesis of endometriosis[10]; however, no one theory to date is sufficient to explain all of the clinical findings and features of the disorder. For example, although 90% of women have retrograde menstruation, only a small fraction of these women develop endometriosis.[11] There appears to be a peritoneal predisposition to the attachment and survival of endometriosis implants in some women and not in others.[12]

The different proposed pathophysiologic mechanisms may help explain the varied endometriosis phenotypes, including superficial peritoneal endometriosis implants, deep infiltrating endometriosis (DIE), endometriomas, and adenomyosis. Although much less common, endometriosis can also present outside of the pelvis, as seen with pleural, nasal, intrahepatic, diaphragmatic, and abdominal wall endometriosis.[13–15] With respect to abdominal wall endometriosis, which is the most common form of extrapelvic endometriosis, the pain is not necessarily cyclic and is associated with a mass in the abdominal wall, most frequently at the site of a previous incision. In general, catamenial symptoms, regardless of location, should raise suspicion for the presence of endometriosis.

Medical and surgical treatments are mainstays in the management of endometriosis, and different approaches are dictated by the pleiotropic manifestations of the disease as well as underlying patient characteristics. In general, medical treatment options are limited when fertility is desired because of the ovarian suppression inherent in their mechanisms of action. Assisted reproductive technologies can often overcome the detrimental effects of endometriosis without prerequisite surgical intervention. This review focuses on current strategies for the management of endometriosis in the setting of pain and infertility.

ENDOMETRIOSIS AND PAIN

As mentioned above, endometriosis is found in most women with pelvic pain,[2] both chronic and cyclic, and thus should be strongly considered in the differential diagnosis of pelvic pain, while keeping in mind other nongynecologic causes, which may coexist or represent sole causes for such symptoms. There are various manifestations of endometriosis, including endometriomas, adenomyosis, dark or red lesions, clear vesicles, peritoneal windows, and powder burns, each of which may cause pain by different mechanisms.[16] Pain can arise from cyclic bleeding from ectopic endometrial tissue, production of inflammatory mediators, such as cytokines, and nerve irritation.[16] The most severe pain is associated with deep (>6 mm) invasion of the peritoneum[17] as seen with DIE, which is frequently found in the obliterated cul-de-sac.[18] In addition, pelvic adhesions from the inflammation that occurs with endometriosis can also contribute to pelvic pain.