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10

Minimally invasive treatment of adenomyosis

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A B S T R A C T

The aim of the present review is to give a comprehensive overview of minimal invasive treatment options and suggest a minimally invasive approach in women with adenomyosis (AD).

A review of relevant literature on medical and surgical treatment options is performed. Surgical options include endometrial ablation, hysteroscopic endometrial and adenomyoma resection, laparoscopic resection of AD, high-intensity focused ultrasonography (HIFU), and uterine artery embolization (UAE).

This review summarizes treatment strategies for the management of AD and highlights the present lack of knowledge, which makes suggestions of evidence-based treatment difficult.

Introduction

Hysterectomy has traditionally been the treatment of choice in women with adenomyosis (AD), who do not want to preserve fertility and who accept the operation [1].

During recent years, several minimal invasive treatment options for AD have been introduced and hysterectomy should no longer be the first treatment of choice in women with AD. Main symptoms are abnormal uterine bleeding, dysmenorrhea and pain. Moreover, AD may be related to infertility.

Studies evaluating the association of AD with infertility and treatment have major shortcomings by different, not validated, and verified image criteria for the diagnosis of AD, and the fertility outcome has not been associated with the extent of AD.

A meta-analysis in 2014 [2] and a recent review [3] concerning the effect of AD on IVF/ICSI outcome concluded that AD has an adverse effect on the probability of clinical pregnancy and

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increases the risk for early miscarriage. Cohort studies of women with AD and women with AD and deep endometriosis showed that pregnancy rates reduced by a RR of 0.73 and 0.53, respectively. Miscarriages increased in women with AD, with a RR of 2.12 [3]. However, the pregnancy rate was not lower in women with AD in a prospective case–control study performed on asymptomatic women with only one sonographic sign of AD [4]. These findings indicate that discrete changes in asymptomatic women may not affect fertility, while more pronounced changes reduce fertility, and therefore, they should be treated most optimally.

AD is an estrogen-dependent disease that may respond to medical treatment with temporary or permanent improvement in symptoms. Minimally invasive surgical principles are offered when medical therapy is ineffective. These treatment options offer surgical alternatives to the medical palette. Several treatment options may be combined, but there is still limited evidence for the most optimal treatment options associated with symptom severity, fertility, and lesion characteristics in a woman.

This review aims to give a comprehensive overview of minimal invasive treatment options and to suggest an approach in women with AD.

Methods

Literature was searched in PubMed under the headings: “Adenomyosis OR Adenomyoma combined with: Gonadotropin-Releasing Hormone, progestins, Levonorgestrel, Levonorgestrel-releasing intrauterine device, oral contraceptive, HIFU, High intensity focused ultrasound, Uterine artery embolization (embolization, embolisation), endometrial ablation, hysteroscopy, surgery, cytoreductive surgery, adenomyomectomy.”

We retrieved reviews and clinical studies (but not case reports) published in English language. Titles and abstracts were screened to identify relevant articles, and the relevant articles were checked for relevant references.

Medical therapy

AD is characterized by increased estrogen level, aromatase activity, Cox2 expression, prostaglandin, and progesterone resistance with a persistent inflammation. Medical treatment for AD follows the principles for medical treatment of endometriosis. The aim is to reduce production of endogenic estrogen or induction of endometrial differentiation with progestins. The principles are inhibition of ovulation, abolition of menstruation, and establishment of a stable steroid milieu.

Combined oral contraceptives (COC)

COC inhibit production of ovarian estrogen through a negative feedback mechanism. They have a strong progestational effect on the endometrium and on the suppression of ovarian steroidogenesis. Inhibition of ovulation and abolition of menstruation creates a stable hormone milieu in the uterus, which may reduce prostaglandin level, COX-2 level, and aromatase activity, and decreased inflammation [5]. COC create a hyperprogestogenic environment and suppress endometrial cell proliferation.

First-line treatment for women with dysmenorrhea and abnormal uterine bleeding (AUB) is COC [6–8]. The treatment is symptomatic and AD lesions resume their metabolic activity when treatment is discontinued. This seems to be an effective treatment option to suppress ectopic endometrium in women with endometriosis [9], and this is also assumed to be effective for ectopic endometrium in AD [10]. To achieve amenorrhea, treatment should be given continuously without any interruption for bleeding cessation [11,12]. However, LNG-IUS seems to have a better effect on AD than COC [13]. COC may be effective for two-thirds of women with endometriosis, who often have additional AD [14].

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