

Acneiform eruption caused by levonorgestrel-intrauterine system: a case report

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Abstract Acneiform eruptions occur from a wide variety of diseases, including infections, hyperandrogenism and drug reactions. The levonorgestrel-intrauterine system (LNG-IUS) provides highly effective contraception by releasing levonorgestrel into the uterine cavity. We present a woman with acneiform eruption after insertion of the LNG-IUS for contraceptive purposes which resolved shortly after its removal. In reproductive age women with acneic eruption with unknown ordinary cause, LNG-IUS should be ascertained as a cause of acne

Key words

Acne, acneiform eruption, androgen, LNG-IUS, treatment.

Introduction

The levonorgestrel-intrauterine system (LNG-IUS) is a safe and effective device which has been shown to be useful not only as a contraceptive, but as a tool used for a variety of gynecologic conditions or disorders.¹ It contains locally released levonorgestrel as progestin. Levonorgestrel is one of the more androgenic progestins marketed in the United States in 1990s. Although the capsules release a low dose, the potential may exist for side effects such as those seen with androgenic progestins in the oral contraceptive pill, for instance, acne, hirsutism, and depression.² We present a woman with acneiform eruption after insertion of the LNG-IUS for contraceptive purposes which resolved shortly after its

removal.

Case report

A 37-year-old woman, gravida 3 parity 1 abortion 2, was admitted to our outpatient clinic for acne. Her family and personal history were normal. There was no history of drug usage and also there was no usage of irritants. She had LNG-IUS for two months. Acneiform eruption was noticed within one month of IUD insertion. She explained that it had progressively worsened in the second month of insertion of LNG-IUS. On dermatologic examination, she had moderate acneiform eruptions on her face (**Figure 1**). In laboratory studies, biochemistry was normal. Total testosterone and DHEAS levels were 0.92ng/ml and 182.4 mcg/dl, respectively. 17-OH progesterone level was also within normal limits (0.86 ng/ml). On ultrasonographic examination, uterus and both ovaries were normal and there was a normal localized intrauterine device. After detailed consultation, she decided to remove the LNG-IUS. The

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Figure 1 Acneiform eruption before removal of LNG-IUS

LNG-IUS was removed by a gynecologist. Acne progressively disappeared twelve weeks after removal of LNG-IUS. Topical isotretinoin and erythromycin were given for faint remnants of acneiform eruptions on her face.

Discussion

Acneiform eruptions such as acne vulgaris, rosacea, folliculitis, and perioral dermatitis, are routinely encountered in primary health care. Acne like disorders occur from a wide variety of diseases, including infections, hyperandrogenism and drug reactions. The most common cause of acne-like eruptions is accepted to be iatrogenic. Acneiform eruptions are also recognized as one of side effects of progesterone, especially the methyl testosterone derivatives. Levonorgestrel is a member of the methyl testosterone derivatives.³ Indeed, acneiform eruptions may follow after insertion of LNG-IUS, although this was not often reported in medical literature up to date.

The LNG-IUS provides highly effective contraception for up to five years. It directly targets the endometrium by releasing levonorgestrel into the uterine cavity. The LNG-IUS is a T-shaped device composed of a cylinder containing 52 mg of LNG covered by a rate-controlling membrane which serves to regulate the rate of hormonal release. Initially,

20µg of levonorgestrel is released every 24 hours from this polymer cylinder. This decreases to 11µg every 24 hours by the end of five years, with an average release rate of 14µg per day over the life of the IUS.⁴ The systemic levels following such administration are less than those achieved with therapeutic oral or parenteral doses of progestogens,^{5,6} hence side effects should theoretically be less often and less severe. The appearance of acneiform eruptions in our case shortly after insertion of LNG-IUS may be explained by this early increase of serum levonorgestrel levels.

Clinical trials with oral levonorgestrel have shown an incidence of acne of 5% to 20%,² while in only two studies with LNG-IUS have reported as 2.6% to 8.9% up to now in medical literature.^{7,8} As in our case, removal of LNG-IUS alone may not appear to be sufficient to cure the reaction and use of isotretinoin is recommended to achieve remission of the dermatological lesions.

Conclusion

Acneiform eruptions occur from a wide variety of diseases, including infections, hyperandrogenic status and drug reactions. In reproductive age women with acneic eruption with unknown ordinary cause, LNG-IUS should be ascertained as a cause of acne.

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