

# Multifetal Pregnancy Following Emergency Contraceptive Pill Containing Levonorgestrel: Case Report

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Contraceptives, used for prevention of unwanted pregnancy after an unprotected sexual intercourse, have been in use for more than 20 years. With their high efficiency and fewer side effects, drugs containing 750 Mg levonorgestrel are the most commonly used forms of hormonal postcoital contraceptives. The effective mechanisms of emergency contraceptive drugs that contain Levonorgestrel include delayed tubal transport of the ovum. Delayed tubal transport after fertilization has been considered one of the etiological factors in formation of multifetal pregnancies. In this report, a case with intrauterine twin pregnancy after use of emergency postcoital contraceptive containing levonorgestrel has been presented and the issue has been discussed in the light of the relevant literature.

**Key Words:** Levonorgestrel, Postcoital contraception, Multifetal pregnancy

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## Introduction

It has been estimated that 50% of all pregnancies are unplanned and of these, 25% are terminated through elective curettage.<sup>1</sup> Particularly in developing countries, illegal termination of unwanted pregnancies is common and among the important reasons for maternal mortality. Emergency contraceptive methods, practiced after unprotected sexual intercourse, have been in use for more than 20 years. In the USA, the use of emergency contraceptive methods is estimated to prevent 2 million cases of unwanted pregnancies and more than 1 million abortions.<sup>2</sup> High dose of a drug that contains combined estrogen-progesterone (Yuzpe method), a drug that contains only estrogen or levonorgestrel, intrauterine device, and mifepristone are the primary methods of emergency contraception. Postcoital contraceptive kit containing levonorgestrel (LNG-AKK) (Norlevo™), which is used in the form of 2 pills containing 750 Mg levonorgestrel at 12-hour intervals within 72 hours of unprotected sexual intercourse, has been used since 2000.<sup>3</sup> Delayed ovulation, decreased tubal motility, and inappropriate form of endometrium for implantation are the primary effective mechanisms.<sup>4</sup> In a multi-center study by World Health Organization (WHO) the failure risk of LNG-AK was reported to be 1.1%.<sup>5</sup> Decreased tubal

motility and thus delayed transport of the ovum are the factors that have also been held responsible for ectopic pregnancy and multifetal pregnancies.<sup>6</sup> Thus, theoretically, use of LNG-AKK increases the risk of ectopic or multifetal pregnancy. Literature reveals few ectopic pregnancies associated with LNG-AKK use. Nevertheless, there are no reports of multifetal pregnancies associated with LNG-AKK use.<sup>7,8</sup> Here, we present a case of multifetal pregnancy after LNG-AKK use upon unprotected sexual intercourse during follicular phase and the issue has been discussed in the light of literature.

## Case

A 31-year-old patient who had a history of one live birth and one elective abortus applied to the antenatal outpatient clinic of our hospital on 05.27, 2009 with the complaints of delayed menstruation. The patient reported no desire for pregnancy and no use of effective contraceptive methods. On the 12th day of her menstruation, the patient had had a sexual intercourse and in order to avoid pregnancy, she had used LNG-AKK at the 72<sup>nd</sup> hour of the intercourse. The patient took the pills at 12-hour intervals and experienced no side-effects. There was no history of sexual intercourse in the days followed. When the menstruation was delayed for 15 days, the patient applied to our clinic with suspicions of pregnancy. The personal history of the patient was nonspecific. On gynecological examination, the cervix was softer, and the uterus was soft and enlarged. In transvaginal ultrasonography, 2 gestational sacs were observed in the uterus. Adnexa were normal. One of the sacs was 24 mm in diameter and involved an embryo of 3 mm from head to bottom and a yolk sac. Embryonic heart beats were noted (Figure 1). In the 15 mm sac, there was only the yolk sac, but embryo was not seen.

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The patient was informed. Because the patient did not desire pregnancy, she was referred to the family planning outpatient clinic for elective curettage and her pregnancy was terminated.



Figure 1: Intrauterine twin pregnancy; the image of gestational sac containing the embryo

## Discussion

Levonorgestrel is a synthetic progestin that is a derivative of 19 nor-testosterone. LNG-AKK is a widely used postcoital contraceptive method. The effective mechanism of levonorgestrel in preventing pregnancy after unprotected sexual intercourse is not clearly known. However, such mechanisms as its effects of thickening the cervical mucus, forming endometrial decidualization, delaying follicle maturation, disrupting the functions of the corpus luteum, and reducing tubal motility and thus, destroying the tubal transport are possible mechanisms.<sup>3-5</sup> Yuzpe method and LNG-AKK are the most commonly used form of emergency contraception worldwide. However, LNG-AKK seems to offer more advantages compared to Yuzpe method. In a multicenter study by WHO in 1998, the rate of failure was reported to be 3.2% for Yuzpe method and 1.1% for LNG-AKK.<sup>5</sup> In the same study, the side effect of nausea and vomiting following the drug intake was observed at a rate of 18.8% with Yuzpe method, while it was 5.55% with LNG-AKK. With such advantages, LNG-AKK has started to be widely used. The later the intake of LNG-AKK after coitus, the higher the risk of failure. Whereas 7 pregnancies out of 1000 users were reported when it was used within the first 24 hours, 27 pregnancies out of 1000 were reported when it was taken in 49-72 hours of coitus.<sup>9</sup> The patient reported here had used LNG-AKK for 3 days after the intercourse. Thus, failure of the method might have been due to failure to use it earlier. This was explained to the patient.

Because Levonorgestrel increases the tubal motility, the probability of ectopic pregnancy increases. In the relevant lit-

erature, few ectopic pregnancies after LNG-AKK use have been reported.<sup>7,8</sup> Decreased tubal motility disrupts the transport of the ovum, which may play a role in monocoryonic multifetal pregnancy.<sup>6,10</sup> Theoretically, it seems that the risk of multifetal pregnancy after LNG-AKK has increased; nevertheless, literature does not reveal any cases of multifetal pregnancy associated with the use of LNG-AKK. Because the case reported here is the first case of twin pregnancy after LNG-AKK use, it is striking.

In conclusion, the use of LNG-AKK has become common worldwide because it reduces the risk of unwanted pregnancies and their termination rates. It is known that this method increases the risk of ectopic pregnancies.

This is the first report claiming a relationship between the LNG-AKK use and multifetal pregnancy. However, to the best of our knowledge, establishment of a causal relationship between LNG-AKK and multifetal pregnancy is not possible. Larger studies issuing the unwanted pregnancies after LNG-AKK usage should be examined in order to unveil the rate of multifetal pregnancies in such cases.

## Levonorgestrelli Acil Kontraseptif Hap Kullanımı Sonrası Gelişen Çoğul Gebelik: Olgu Sunumu

Korunmasız bir cinsel ilişki sonrası alınan ve istenmeyen gebelikleri önleyen hormonal kontraseptif haplar 20 yıldan uzun zamandır kullanılmaktadır. Yüksek etkinliği ve yan etkilerinin az olması nedenleri ile 750 mg levonorgestrel içeren haplar en sık kullanılan hormonal postkoital kontraseptif yöntemdir. Levonorgestrelli acil kontraseptif haplar, ovumun tubal transportunun geciktirilmesini de içeren çeşitli mekanizmalar ile etki gösterir. Çoğul gebeliklerin oluşumunda fertilizasyon sonrası tubal transportun yavaşlaması da sorumlu etyolojik faktörlerden biri olarak kabul edilmektedir. Bu yazıda, levonorgestrelli acil postkoital kontraseptif hap kullanımı sonrası intrauterin ikiz gebeliği saptanan bir olgu sunuldu ve konu literatür bilgileri eşliğinde tartışıldı.

**Anahtar Kelimeler:** Levonorgestrel, Postkoital kontrasepsiyon, Çoğul gebelik

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