

Ectopic pregnancy with Implanon®

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Case report

We report the case of a 27-year-old woman, para 1 + 0, who had a contraceptive implant (Implanon®) inserted in January 2004 at a 6-week postnatal check following a spontaneous vaginal delivery. The patient's past gynaecological history was unremarkable, with no history of pelvic inflammatory disease or other risk factors for ectopic pregnancy.

Following insertion of the Implanon, the patient had a brownish loss *per vaginam* on and off and also recalled having a proper period in June 2004. In August 2004, on account of the symptoms of weight gain and erratic vaginal bleeding, the Implanon was removed. A pregnancy test performed at the same time was positive.

A clinical examination performed at the time was unremarkable and the beta-human chorionic gonadotrophin (β -hCG) level was 3112 IU/l. A transvaginal scan showed no evidence of intrauterine pregnancy, raising the possibility of an ectopic pregnancy. The patient was pain-free and hence conservative management was instituted. She remained asymptomatic and serial β -hCG levels continued to fall. A repeat scan 10 days later revealed a solid mass (1.6 \times 1.9 cm) adjacent to the right ovary highly suggestive of an ectopic pregnancy. As the patient continued to be symptom-free, expectant management was continued. She was regularly followed up in the early pregnancy assessment unit until her β -hCG level fell within the non-pregnant range.

On further questioning it transpired that the patient had commenced tubercular therapy including rifampicin for cervical node tuberculosis. This treatment had started 3 months following Implanon insertion. The patient did not recall being informed of the need to use an additional method of contraception.

Discussion

Implanon is a highly effective, subdermal, single-rod, progestogen-only contraceptive implant that releases etonogestrel, which reaches ovulation-inhibiting levels 24 hours after insertion. No pregnancies were reported in clinical trials after 70 000 cycles of use (Pearl index 0).^{1,2}

Since the launch of Implanon in the UK in 1999 there have been seven reported pregnancies but causality has not been established.³

In the present case we believe that the concomitant use of enzyme inducers resulted in ovulation and the subsequent ectopic pregnancy. Drug interactions are common with hormonal contraceptives including non-oral routes. Any drug that induces microsomal enzymes, specifically cytochrome P450, can result in increased clearance of sex hormones thus reducing their contraceptive efficacy. Such drugs include rifampicin, anti-epileptics (e.g. carbamazepine and phenytoin), the herbal remedy St John's Wort, and many others. It is recommended in the summary sheet for Implanon that if such medications are intended for long-term use then the Implanon should be removed and alternative contraception employed.

Clinicians commencing patients on enzyme-inducing drugs may not be familiar with Implanon or have a datasheet to hand. Instead they may rely on the *British National Formulary (BNF)* to provide the relevant information. In this case, oral contraceptives only are listed under the entry for rifampicin,⁴ thus potentially misleading the clinician about possible drug interactions.

Though the possibility of ectopic pregnancy is always mentioned with regard to the progestogen-only pills, such an association with Implanon has not been described in the literature. Whereas 'anovulation' is the main mechanism of action of the combined oral contraceptive pills, the same is not true for the progestogen-only pills and thus there are increased chances of ectopic pregnancies with their failure, which are further increased with the reduction in tubal motility that results from use of these drugs.

Conclusions

Implanon levels remain relatively constant and lower than those of the injectables,⁵ making it a less powerful ovulation suppressant than Depo-Provera®. Consequently, patients using Implanon who require treatment with enzyme inducers need to use an additional method of contraception (e.g. condoms).

We recommend that the advice given in the *BNF* be amended, and suggest that caution should be advised for patients on enzyme inducers with the use of *all* hormonal contraceptives (except Depo-Provera) and not just oral contraceptives.

Finally, it is important to perform a pregnancy test in patients who experience irregular bleeding while using contraceptives including Implanon.

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