Contraceptive failure of Depo-Provera®: long-acting reversible contraceptive (LARC) methods do fail too

Lucinda Farmer, Elizabeth Patel

Case report
A 28-year-old woman, gravida 4 para 1, presented to primary care for contraception. Following discussion she opted for the progestogen-only injectable, Depo-Provera®. Her first injection was given on Day 5 of her cycle and she had not had any unprotected sexual intercourse that cycle. The injection was given into the dorso-gluteal muscle by the practice nurse who had experience of giving intramuscular (IM) injections. The woman attended the surgery 13 weeks later, having missed her appointment the previous week. She was given a second injection – again by an experienced practice nurse – into the gluteal muscle. No other precautions were advised. It is not documented in the case notes whether the patient was counselled that this injection was outside the product license.

The patient re-presented with symptoms of nausea 6 weeks following her second Depo-Provera injection. A pregnancy test was positive. A dating ultrasound scan was arranged. This took place 7 weeks after her second Depo-Provera injection and showed a viable pregnancy at 9 weeks 2 days estimated gestation, indicating that conception would have occurred around the time of the second injection. The patient opted for a termination of pregnancy and had a copper-bearing intrauterine device fitted at the time of abortion.

The case was reported to the manufacturer of Depo-Provera. They carried out tests on both injection batches, which showed satisfactory medroxyprogesterone concentrations.

The patient was in good health, a non-smoker and had not taken any recent medication. Her weight was 68.0 kg at the time of the first injection and 71.3 kg at the time of the second. On discussion with the patient it transpired that she had three previous unplanned pregnancies. The first occurred while she was not using any contraception and resulted in a therapeutic abortion. Her next two pregnancies occurred whilst taking the combined oral contraceptive pill. The patient reported taking St John’s wort when she first became pregnant on the second occasion but no clear cause of conception would have occurred around the time of the first injection and 71.3 kg at the time of the second injection. The patient opted for a termination of pregnancy and had a copper-bearing intrauterine device fitted at the time of abortion.

The site is “preferably the dorso-gluteal muscle”. The site is “preferably the dorso-gluteal muscle; but the deltoid may also be used”. However, since there is a preparation of medroxyprogesterone that may be given subcutaneously and at a lower dose, this would seem an unlikely cause of failure.

Depot medroxyprogesterone acetate (DMPA) is an aqueous suspension available in a pre-filled syringe, which should be thoroughly mixed before use to ensure complete suspension of the contents. If this were not done, could this contribute to inappropriate absorption of the drug? In addition, some medication manufacturers advise against massaging the site after injection as it reduces the effect of the medication by dispersing it too readily. We checked the SPC for Depo-Provera and found no warnings against this practice.

Finally, when performing IM injections the ‘Z-track technique’ is commonly used to prevent any drug from leaking out of the muscle. This technique involves pulling the skin to one side of the injection site; the needle is then held at 90 degrees to the skin and penetrated into the muscle. The plunger is pulled back to observe for blood aspiration, and if no blood is aspirated then the drug is slowly and continuously injected. The needle is then withdrawn at the same angle at which it went in and the skin released. This has the effect of breaking the needle track as the skin and subcutaneous layers move back over.
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Closing date: Friday 30th January 2009.
Interview date: Thursday 26th March 2009.

Statements on funding and competing interests
Funding None identified.
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References
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