

## Migration of Implanon®: two case reports

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### Abstract

These two case reports describe migration of Implanon® (the single-rod contraceptive implant). A review of the literature revealed true migration of Implanon to be rare. A change of practice locally is described.

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### Introduction

Implanon® is the only contraceptive implant currently available in the UK. It is highly effective (Pearl Index 0), with menstrual irregularities being the main side effect. It has gained in popularity since its first use in 1999, thus increasing the number of women returning to request removal either because the Implanon device is due to be renewed or because of unacceptable side effects. In our practice a small minority of these implants are found not to be palpable and ultrasound examination has been invaluable in locating them. Some implants have been found lying deeply due to faulty insertion technique or weight gain, one was not inserted at all, and here we report two cases of migration. From a literature search, it would appear that the latter phenomenon is a rare occurrence.

### Case reports

#### Case 1

A 33-year-old woman attended the Sexual Health Clinic in July 2003 requesting removal of her contraceptive implant, Implanon®. Implanon is a single-rod (4 cm long, 2 mm wide), non-biodegradable, contraceptive implant consisting of a flexible polyethylene vinyl acetate (EVA) membrane containing 68 mg etonogestrel. Each Implanon rod comes individually packed in the needle of a sterile, disposable, specially designed inserter.

The Implanon device had been *in situ* for 3+ years having been inserted in June 2000. It was overdue removal and the woman had been using condoms as extra contraceptive protection. She was considering using the contraceptive patch or a further Implanon device for future contraception.

The implant had not been palpable in the region of insertion at the 3-month follow-up appointment and there was no record as to whether it was palpable immediately postinsertion. The Implanon had been inserted in the right upper arm through the 2 mm incision made for the 'U' technique removal of the six-rod contraceptive, Norplant®, which was removed immediately prior to insertion of the Implanon.

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It was thought that the Implanon might be palpable subcutaneously, the distal end palpable 11 cm from the insertion site (as noted by the 2 mm white scar) in the upper aspect of the arm approaching the anterior aspect of the right axilla. This was confirmed by ultrasound examination with a 13.5 MHz linear array transducer, and the Implanon was successfully removed under ultrasound guidance.

#### Case 2

A 35-year-old woman attended the Sexual Health Clinic in February 2003 requesting renewal of her contraceptive implant, Implanon. This had been inserted 3 years previously immediately after removal of a Norplant device using the 'U' technique and through the incision site for Norplant removal.

At 2+ weeks postinsertion the woman attended complaining of a lump at the site of insertion that was considered to be resolving haematoma and no other follow-up was recorded. There was no record of whether the implant was palpable at that time.

When she attended for renewal in February 2003 the Implanon was not palpable. Ultrasound examination, using a 13.5 MHz linear array transducer, located the distal end subcutaneously (Figure 1) 7.3 cm from the insertion site (as noted by a 2 mm white scar on the upper arm). The proximal end was lying 5 mm deep and close to the neurovascular bundle in the upper arm (Figure 2).

This woman has congenital heart disease with shunt, requires oxygen at night, and is fully anticoagulated with warfarin. Subcutaneous infiltration with local anaesthetic for attempted removal of the Implanon under ultrasound guidance resulted in haematoma formation and the procedure was abandoned. After discussion, it was decided to leave the original Implanon *in situ* permanently rather than risk removal.

Reliable contraception was imperative for this woman, as pregnancy was contraindicated (the patient having previously had to undergo a termination of pregnancy on medical grounds). Therefore, a further Implanon was inserted in her other arm and the rod was palpable postinsertion.

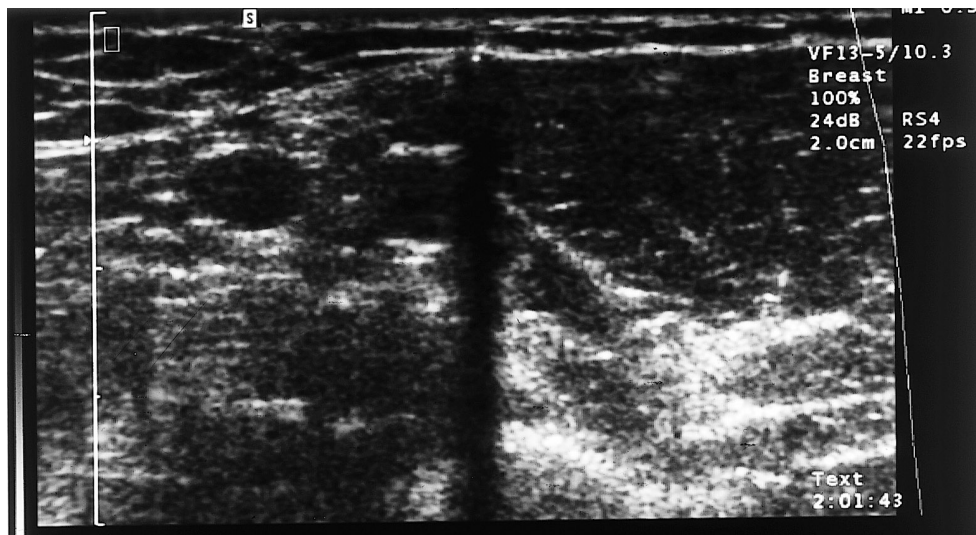
### Discussion

A review of clinical studies of Implanon in 1999<sup>1</sup> reported complications of Implanon removal in 1.3% (21/1616) of cases. The 21 complications involved six deep insertions, six with fibrous adhesions, four cases where there was difficulty finding the implant, three broken implants and two other problems with no mention of migration as a complication of removal.

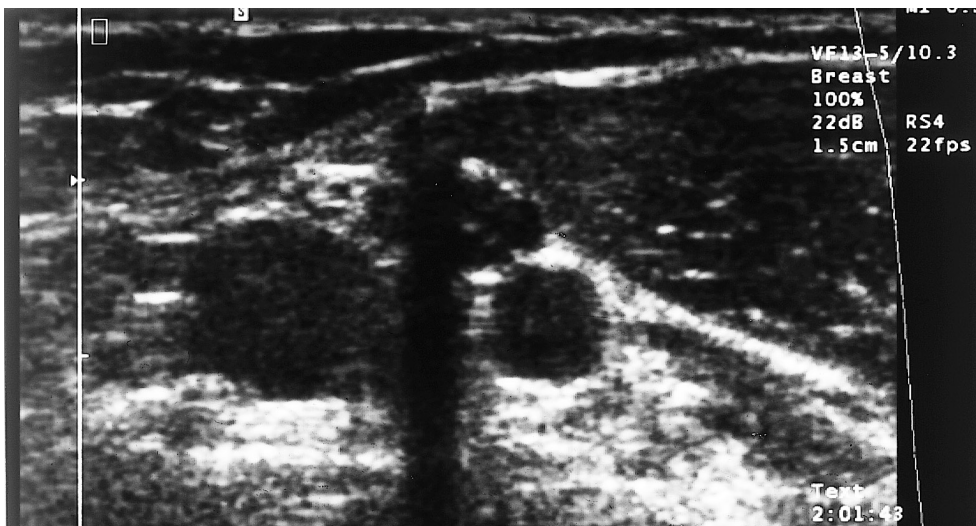
Complications with insertion and removal of Implanon are rare in the hands of medical professionals familiar with the techniques<sup>2</sup> and these procedures should only be undertaken by those with relevant training. The manufacturer recommends that insertion should be made 7 cm (6-8 cm) from the medial malleolus in the upper arm, in the groove formed between the biceps and triceps muscles. The fact that this recommendation was not strictly adhered to in the two cases described here seems unlikely to be a factor in the migration. The distal end of the Implanon, with correct insertion, would be expected to be located only a few millimetres more proximal than the insertion site.

The manufacturer's medical information department (Organon, personal communication) confirmed that true

## CASE REPORT



**Figure 1** Ultrasound image showing the subcutaneous location of the distal end of the Implanon® device in Case 2 as noted by posterior acoustic shadow



**Figure 2** Ultrasound image showing the location of the proximal end of the Implanon® device in Case 2 lying close to the neurovascular bundle

migration is rare, having occurred in around six reported cases to their knowledge. The women concerned were generally slim and wiry and were physically active in the week following insertion (e.g. working out at the gym). The more likely explanation for an impalpable implant is a faulty insertion technique, either inserting the implant too deeply or advancing the introducer instead of withdrawing the sheath.

Both the women described here were slim at the time of insertion of the Implanon and neither woman gained weight while using the implant for contraception. Both deny any strenuous activity in the weeks after insertion, including working out at the gym.

The common factor for these two women was that they had both undergone Norplant removal with immediate insertion of Implanon through the removal wound. Norplant removal using the 'U' technique involves blunt dissection of the subcutaneous tissues in order to remove all six rods. This, we believe, was the major contributory factor in the migration of the Implanon single-rod implant in both these women. We have now changed our practice. When we remove a Norplant device and the patient requests a further contraceptive implant, after appropriate counselling we routinely insert the Implanon device (Norplant having been withdrawn from use in 1999) in the contralateral arm.

Implanon was licensed for use in the UK in September 1999. It is a 3-year contraceptive and so increasing numbers of patients are returning for renewal of their implant. Implanon removal, if straightforward, involves less disturbance of the subcutaneous tissues as compared with Norplant removal. However, we now

also re-insert Implanon in the contralateral arm after removal of an existing Implanon device.

In addition, it has now become routine practice for the doctor and the patient to palpate the implant immediately postinsertion and to document this fact in the notes.

The removal of the Implanon under ultrasound guidance in Case 1 was surprisingly difficult. The tissue forceps, which were used to try to get hold of the implant, could be seen on the monitor pushing the implant away. By extending the wound slightly and placing a blunt probe underneath the implant, the fibrous tissue could be dissected from the implant and it was successfully removed. This confirms the manufacturer's recommendation that it would be foolhardy to attempt removal of an impalpable Implanon without ultrasound guidance. Close liaison with the radiology department and the expertise of an experienced ultrasonographer are essential for the successful removal of an impalpable Implanon.

#### Acknowledgement

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*Competing interests.* Drs Evans and Holman have received payment for delivering training sessions on Implanon insertion and removal.

#### References

- 1 Edwards JE, Moore A. Implanon: a review of clinical studies. *Br J Fam Plann* 1999; **24**: 3-16.
- 2 Mascarenhas L. Insertion and removal of Implanon: practical considerations. *Eur J Contracept Reprod Health Care* 2000; **5**(Suppl. 2): 29-34.