

Clinical challenge with Implanon® removal: a case report

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Case report

A 28-year-old woman attended the family planning clinic for removal of Implanon® and discussion of her future contraceptive options. The implant had been inserted elsewhere and was due to be removed 2 months earlier. She had been using a barrier method of contraception for the 2-month duration. The patient did not want another implant. Her unhappiness with the method was due to weight gain (2 stones), mood swings and acne. She acknowledged that lifestyle changes, lack of exercise and unhealthy eating habits contributed partly to her weight gain.

On examination of the left arm, the scar identifying the site of insertion was visualised. There was difficulty in palpating the distal end of the Implanon in the biceps/triceps groove because the proximal end was deep. The Implanon was not palpable along its entire length.

The patient was counselled about the method of Implanon removal and the possibility of difficulty with removal as it appeared to be slightly deep. Prior to removal her contraceptive options were discussed and the combined contraceptive pill was recommended.

An attempt was made to remove the Implanon after infiltration with local anaesthetic. This procedure was unsuccessful due to deep insertion of the implant and the patient's subsequent weight gain. Following this, the patient was counselled and advised that it would be necessary to localise the implant with ultrasound imaging before proceeding to a second surgical attempt. An ultrasound appointment was arranged in 1 month's time to allow the exploration site to heal. The patient was also prescribed the combined contraceptive pill.

An ultrasound scan using a high-frequency linear array transducer (11 MHz) revealed the distal end of the Implanon to be situated 3 mm below the skin adjacent to the scar site with the proximal end localised 7.7 mm below the skin. The two ends of the Implanon were identified by its acoustic shadow and the exact position identified by an echogenic spot as seen in Figure 1. The full length of the Implanon in longitudinal view is seen in Figure 2 as a rod which is not lying parallel to the skin surface but at an angle.

The patient was informed of the findings and another attempt at removal was undertaken. A transverse skin incision about 1 cm in length was made over the distal site of Implanon localisation that had been identified previously by ultrasound. Despite the combined effort of two trained colleagues, removal was unsuccessful and the patient was referred to the general surgeon for specialist opinion and implant removal.

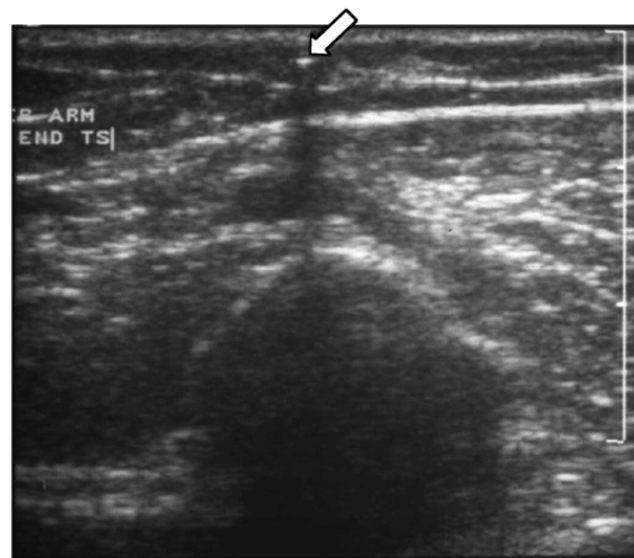


Figure 1 Transverse ultrasound image of distal end of implant 3 mm below the skin with distinct shadowing visible (arrow)

Prior to her surgical appointment, a repeat ultrasound scan was arranged 7 months later and this showed that the proximal end was 5 mm from the skin surface and the distal end was 2 mm deep. The patient had lost 1 stone in weight during this period and the Implanon was palpable more clearly at its distal end. The Implanon was successfully removed under local anaesthesia at the third attempt by the general surgeon. The skin incision was taken proximally avoiding the previous scar tissue and the distal tip of the Implanon was grasped with a 'mosquito' forceps, using a fair amount of traction to remove it due to possible previous fibrosis.

Discussion

Implanon can be easily inserted and removed by a health care professional trained in the procedure using local anaesthetic, with a mean removal time of 2.6 min.¹ Implanon is removed using the 'pop out' technique involving a 2 mm incision.¹

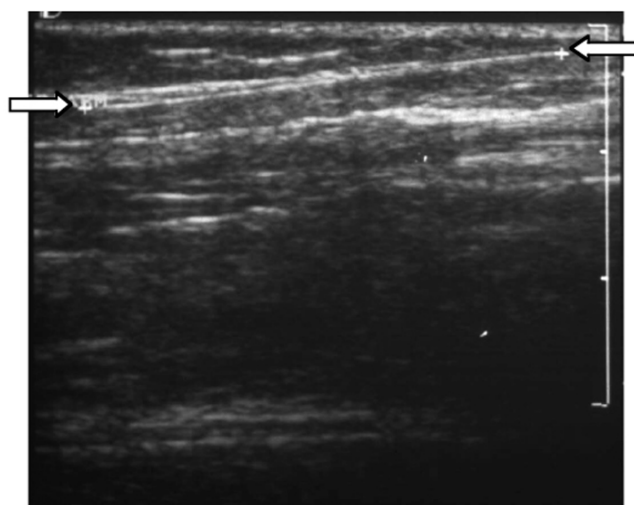


Figure 2 Longitudinal image of implant situated at an angle on which the proximal end 7.7 mm below the skin (left arrow) and the distal end (right arrow) are visible

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CASE REPORT/BOOK REVIEWS

Prior to removal it is essential to identify the position of the implant by palpation. Careful palpation of the proximal and distal ends of the implant is important. Incorrect placement of the implant deeper in the subcutaneous tissue and subsequent increase in the patient's weight could result in difficulty with palpation of the implant. Difficulty with removal in the present case was probably due to insertion of the implant at an angle as seen in the ultrasound images (Figures 1 and 2). Additional factors might have been the patient's weight gain and postinsertion fibrosis.

Implanon can be visualised with all ultrasound transducers (i.e. high, medium and low frequency). However, the best results are obtained with very high frequency linear array transducers of 12 and 15 MHz.² When using a low or intermediate frequency transducer, application of a large amount of gel enhances the visibility of the implant. The manufacturer's medical information department have specified use of ultrasound frequencies above 8 MHz based on expert opinion from radiologists. In the present case, the radiologist decided to use a transducer of frequency 11 MHz.

The ultrasound probe is placed at right angles to the longitudinal direction of the implant. Following identification of the acoustic shadow cast by the implant, the exact position of the two ends is visible as a clear echogenic spot.³ The transducer is then rotated by 90° to obtain a longitudinal view of the implant.

The present case emphasises that in difficult cases in

which the Implanon is not easily palpable, even though ultrasound localisation of Implanon is done prior to attempting removal, incorrect plane of insertion, weight gain, fibrosis and scar tissue from previous failed attempts can make subsequent removal difficult. Removal of Implanon in the ultrasound room immediately after localisation is best practice but may be difficult to organise. There have been no previous reported cases in the literature of difficulty in removal of Implanon due to weight gain. During the long waiting time incurred for removal of Implanon our patient lost a stone in weight, which possibly made the final surgical retrieval easier. However, in complex cases such delays can be reduced by establishing a clear referral system to particular surgeons and radiologists who have developed expertise in this area. A modification of the recommended removal technique may also need to be considered in difficult cases.

Statements on funding and competing interests

Funding. None identified.

Competing interests. None identified.

References

- 1 Mascarenhas L. Insertion and removal of Implanon: practical considerations. *Eur J Contracept Reprod Health Care* 2000; **5**(Suppl. 2): 29–34.
- 2 Kapstein M, Ganpat R. Localisation of nonpalpable single-rod contraceptive implants using ultrasound sonography. *Eur J Contracept Reprod Health Care* 2002; **7**(Suppl. 1): 86.
- 3 Lantz A, Noshier JL, Pasquale S, Siegel RL. Ultrasound characteristics of subdermally implanted Implanon contraceptive rods. *Contraception* 1997; **56**: 323–327.

Book Reviews

Common Breast Lesions: A Photographic Guide to Diagnosis and Treatment. S Pilnik (ed.). Contributing authors: S Jormark (pathologist), E Morton (radiologist), F Pezzulli (radiologist), N Schulman (plastic and reconstructive surgeon) (all from Lennox Hill Hospital, New York, NY, USA). Cambridge, UK: Cambridge University Press, 2003. ISBN: 0 521 82357 9. Pages: 272 (including 50 line diagrams, 200 halftone and 400 colour plates). Price: £110.00 (hardback)

Common Breast Lesions is a beautiful book: hardback, glossy with full colour and black and white photographs and clear text. It is divided into two sections: Section I – Reasons for breast consultation; Section II – Multidisciplinary roles in the treatment of breast lesions – roles of the clinician, radiologist, pathologist, surgeon and plastic surgeon.

This book is edited by an American as a basic guide in the diagnosis and surgical treatment of breast lesions. His stated goal was to produce a book that would be suitable for the needs of medical students who would then carry it into their practice. I feel it would be of limited interest to medical students, American ones at that!

This book is Mr Samuel Pilnik's personal experience based on 14 000 records of patients he has treated over the last 35 years. He simply cannot resist photographs of very rare lesions he has seen; lesions one sees once in a lifetime. Picture after picture of little bits of people in glorious technicolour left me feeling a little nauseous. Each little lump looking remarkably like the others. I find his style quite condescending and old fashioned. There is no evidence base apparent in his approach and certainly no discussion. The text is repetitive; in

parts whole paragraphs simply repeated! Scattered through the chapters was basic information about the structure and physiology of the breast, which I appreciated. However, whole chapters dedicated to surgical anatomy were less useful. Apart from surgery and radiology, there was minimal reference to other treatments such as tamoxifen or chemotherapy.

His 'multidisciplinary team' consists entirely of doctors. There is no mention of the huge contributions of physiotherapists, radiographers, nurses, breast care nurses, psychologists, counsellors, general practitioners and a primary care team. More importantly, there is barely a reference or a thought about the most important person: the patient herself. He is paternalistic in his approach to the patient – I get no feeling of her being part of his team!

This book started for me with great promise but I ended it with a feeling of disappointment and irritation.

Reviewed by **Sarah Cay**, MRCP, DFFP
Staff Grade Doctor in Reproductive Health Care, Edinburgh, UK

Psychotropic Drugs and Women: Fast Facts (1st edn). V Hendrick and M Gitlin. New York, NY: WW Norton & Company, 2004. ISBN: 0 393 70421 1. Price: £14.39. Pages: 256 (paperback)

The importance of gender differences in psychopharmacology is gradually becoming recognised by researchers and clinicians. This handbook for health professionals is written by North American authors in a concise, easy-to-read style.

There are nine chapters, each with a brief introduction followed by bullet points and tables. The tables contain information on different drugs, which is useful for looking up a specific drug or

making comparisons. The first two chapters deal with psychopharmacological treatment in women and gender differences. They include interesting facts such as the wide fluctuations in serum levels of certain drugs at different times in the menstrual cycle, and the ability of sodium valproate to induce polycystic ovarian syndrome. The last chapter touches upon the effects of endogenous and exogenous steroid hormones on the brain.

The remaining chapters deal with different psychiatric conditions, from depression to eating disorders. An interesting chapter on premenstrual dysphoric disorder is included. In each chapter pregnancy and breastfeeding are discussed in detail. Treatment considerations for women of reproductive age and peri/postmenopausal women are also mentioned. Although the main emphasis is on drug treatment, the authors provide some information on commonly used non-pharmacological treatment options with reference to current evidence on efficacy and safety.

Drugs are generally referred to by the generic name, with the North American brand name in brackets. Unfortunately contraceptive and hormone replacement therapy preparations are listed only as the brand name. Certain recommendations are controversial and are not in keeping with UK practice (for example, emphasis on the use of benzodiazepines in the treatment of generalised anxiety disorder, and the treatment of side effects of psychotropic drugs with amphetamines or Viagra®).

Despite these limitations, this is an interesting and well laid out book that is likely to be particularly relevant to general practice, but is also a useful reference for any health professional dealing with female patients.

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