PNC 190

# A SUCCESSFUL REMOVAL OF A NONPALPABLE ETONOGESTREL IMPLANT

**Farih Najihah Hashim[1,2], Nur Rashidah Abd Malik[1,2], Hamizah Ismail[1,2]**

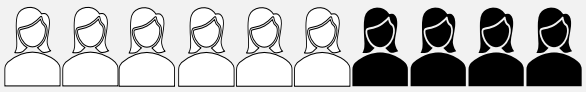
[1]Department of Obstetric & Gynaecology, Kulliyyah of Medicine, International Islamic University Malaysia (IIUM)

[2]Department of Obstetric & Gynaecology, Sultan Ahmad Shah Medical Centre @ IIUM (SASMEC @IIUM)

## INTRODUCTION

An ideal contraceptive method would be long-acting, reversible, and easily accessible. Etonogestrel implant, commonly known as Implanon (Wyeth-Ayerst, Philadelphia, USA), is effective as a contraceptive method and the failure rate is 0.05% with a good resumption of fertility. In SASMEC@IIUM, 61% of our postnatal mothers opted for Implanon. The implant is intended to provide contraceptive efficiency by preventing ovulation for a maximum period of 3 years. The rods are nonbiodegradable, hence it need to be removed after the maximum efficacy period.

We present a successful case of a clinically challenging nonpalpable implant removal, with radiology guidance, and discuss on factors contributing to this problem.



Pictogram 1: 6 out of 10 opted for etonogestrel implant post delivery in postnatal clinic SASMEC @ IIUM.

## ETONOGESTREL IMPLANT

An etonogestrel implant is a 40mm single-rod thin core containing 68mg etonogestrel, made from ethylene vinyl acetate (EVA) copolymer surrounded by a rate-controlling membrane. With a diameter of 2mm, it is inserted into the inner side of the non-dominant upper arm 60-80 mm from the medial epicondyle, using an applicator.

## CASE PRESENTATION

A 23 years old, Para 1 came to our postnatal clinic requesting to remove her Implanon after 19 months. She complained of severe headache, amenorrhea and weight gain of 10kg. On assessment, the implant over her right arm was vaguely palpable, possibly due to fibrosis and fat deposition.

After infiltration of lignocaine and a 10mm nick incision made over the distal end of the rod, the whole length of the implant is no longer palpable. Ultrasound and X-ray of her right arm were performed to identify the location of the lost Implanon. In contrast to usual method of stabilizing the proximal end of sub dermally palpable implant, in this case, approximation of the location of the implant was made based on measurement on the woman's X-ray of the upper arm (Figure 1 and 2) which was 50mm from the medial epicondyle. Pressure was applied on the estimated location of the implant pushing it towards the initial incision made for removal of the implant.

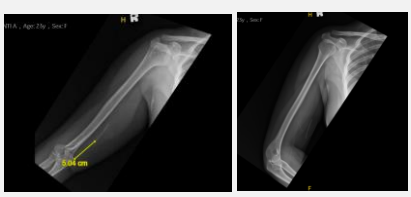
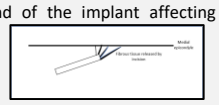


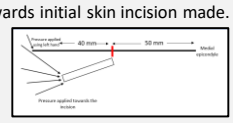
Figure 1&2: Showing location of radio-opaque Implanon from right arm X-ray (AP/Lateral). Localization of implant is made measuring the distance from medial epicondyle and correlated clinically.

## TECHNIQUE

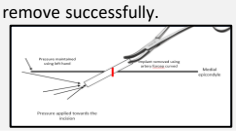
1. Incision of the skin release the fibrous tissue holding the distal end of the implant affecting it to become nonpalpable.



2. Taking medial epicondyle as the fixed point, distance of the implant of right arm measured, under guidance of X-ray. Length of implant 40mm also taking into account to estimate the proximal end of the implant.
3. Pressure applied onto the estimated point of implant pushing it towards initial skin incision made.



4. Tip of the implant felt using artery forceps and grasped, thus remove successfully.



## DISCUSSION & CONCLUSION

- Implant removal procedures are mostly straightforward and successful as an outpatient procedure. However, up to three percent turned out to be difficult or complicated (1). Difficult removal may be contributed by initial deep insertion, fibrosis or increase fat deposition causing deeper location of implant (2, 3). Complicated removal or blind technique could bring complications such as bleeding, hematoma, vessels or nerve injury, thus it should be done with good planning and technique (4).
- Although studies have shown no significant difference in weight gain or changes in body fat composition between users of progesterone-contained contraceptives such as Levonogestrel Intrauterine System (LNG-IUS) and etonogestrel implant with intrauterine contraceptive device (IUCD) (5), this patient has gained 10kg since Implanon insertion which may contribute to the increase subcutaneous fat at the upper arm region causing difficult palpation of implant. It was unable to be determined whether initial insertion site was at a deeper level than intended which might contribute to the problem as well.
- Removal for the implant was planned despite vague palpability of the implant hence local anesthesia was infiltrated and incision was made at the distal end. Unfortunately after incision was made, implant was not palpable at all. This could be contributed by release of fibrous tissue holding the distal end of the implant by the incision made, and deeper positioning of the whole length of implant causing pulling of the implant deeper down the subcutaneous tissue.
- Meanwhile, Implanon contained barium sulfate which help for identification using ultrasound, radiography, computerized tomography (CT) scan and magnetic resonance imaging (MRI) (6). In this X-ray was helpful whereby the medial epicondyle was used as reference point to which the exact location of implant was measured and pressure was applied at the estimated location of implant, pushing the whole length of implant and directing the tip towards the skin incision. This prevented blind exploration into the subcutaneous tissue avoiding risk of injury.
- In conclusion, palpability of the subdermal implant is the best way to locate it prior to removal. In cases with less than obvious palpability, proper planning is needed to avoid blind exploration thus preventing complications for the patients.

## REFERENCES

1. Croxatto HB, Urbancsek J, Massai R, et al. A multicentre efficacy and safety study of the single contraceptive implant Implanon. Human Reprod 1999;14:976e81.
2. Nelson AL, Sinow RM. Real-time ultrasonographically guided removal of nonpalpable and intramuscular Norplant capsules. Am J Obstet Gynecol 1998;178:1185-93
3. Pam VC, Musa J, Mutihir JT, Karshima JA, Anyaka CU, Sagay AS. BODY WEIGHT CHANGES IN WOMEN USING IMPLANON IN JOS, NIGERIA. Afr J Med Med Sci. 2014 Sep;43(Suppl):15-21.
4. Piessens SG, Palmer DC, Sampson AJ. Ultrasound localization of non-palpable Implanon. Aust N Z J Obstet Gynaecol 2005;45:112-6
5. de Nazare Silvados et al. Changes in Body Composition in Women using Long-acting Reversible Contraception, Contraception(2016)
6. M. Capell-Morell, N. Rodriguez-Mias, M. Cubo-Abert, M. Bradbury, J.L. Poza-Barrasus, A. Gil-Moreno. Removal of a migrated subdermal contraceptive implant: a case report and review of the literature. Clin. Exp. Obstet. Gynecol. 2020, 47(6), 965–967.

Organised by Kulliyyah of Medicine IIUM

KULLIYYAH OF MEDICINE 25 YEARS ANNIVERSARY 1997-2022

# INTERNATIONAL VIRTUAL 2022 MEDICAL RESEARCH SYMPOSIUM

## 15TH DECEMBER 2022

*"HUMANISING MEDICAL EDUCATION: LESSONS LEARNT FROM THE PANDEMIC"*

# ABSTRACT BOOK

# POSTER PRESENTATION (NON-CLINICAL)


| NO | TITLE | PAGE |
|---|---|---|
| PNC120 | MYO-INOSITOL AND SPERM QUALITY: DOES IT ENHANCE CRYO-SURVIVAL? | 71 |
| PNC142 | EVALUATION OF COLONY-STIMULATING FACTOR 1 IN INVASIVE BREAST CARCINOMA AND ITS ASSOCIATION WITH PROGNOSTIC PARAMETERS | 72 |
| PNC153 | HEALTHY LIFESTYLE CAMPAIGN AND SMOKING CESSATION PROGRAMME AMONG FACTORY WORKERS DURING COVID-19 | 73 |
| PNC165 | TELEPHONE INTERVENTION TO REDUCE BURDEN AND IMPROVE QUALITY OF LIFE AMONG DEMENTIA CAREGIVERS: A BIBLIOMETRIC ANALYSIS FROM 2017 TO 2022 | 74 |
| PNC173 | THE EVALUATION OF PCR ASSAY FOR DETECTING *PORPHYROMONAS GINGIVALIS* BASED ON THE 16S RRNA SUBUNIT AMPLIFICATION | 75 |
| PNC177 | CONDOM USE CONSISTENCY AMONG MALE TO FEMALE TRANSGENDER IN KUANTAN AND ITS ASSOCIATED FACTORS | 76 |
| PNC185 | THE IMPACT OF MACULAR THICKNESS AND ACUITY ON VISUAL SEARCHING AMONG PATIENTS WITH DIABETIC MACULAR EDEMA (DME) | 77 |
| PNC189 | VALIDITY EVIDENCE OF IM-TK SCALE ON THE INTENTION TO USE BLENDED LEARNING IN MALAYSIAN ORTHODONTIC RESIDENTS | 78 |
| PNC190 | A SUCCESSFUL REMOVAL OF A NONPALPABLE ETONOGESTREL IMPLANT | 79 |
| PNC191 | HEALTH RISK ASSESSMENT OF MICROPLASTIC ON HUMAN HEALTH USING ROCK OYSTER (*SACCOSTREA CUCULLATA*) AS BIOINDICATOR | 80 |
| PNC193 | THE ASSOCIATION OF LPA GENE COPY NUMBER VARIATION AND APOLIPOPROTEIN E (APOE) GENE POLYMORPHISM IN YOUNG ACUTE MYOCARDIAL INFARCTION | 81 |
| PNC195 | EFFECT OF MUSIC INTERVENTION ON PAIN AND ANXIETY AMONG PATIENTS UNDERGOING HERNIOPLASTY AND ABDOMINAL SURGERY: A SYSTEMATIC REVIEW | 82 |

## PNC190

# A SUCCESSFUL REMOVAL OF A NONPALPABLE ETONOGESTREL IMPLANT

Farih Najihah Hashim[1,2], Nur Rashidah Abd Malik[1,2], Hamizah Ismail[1,2]

*[1]Department of Obstetrics & Gynaecology, Kulliyyah of Medicine, International Islamic University Malaysia (IIUM)*
*[2]Department of Obstetrics & Gynaecology, Sultan Ahmad Shah Medical Centre @ IIUM (SASMEC@IIUM)*

**Introduction:** World Health Organization (WHO) Medical Eligibility Criteria for Contraceptive Use guides physicians in recommending safe and effective contraception methods. In Sultan Ahmad Shah Medical Centre @IIUM (SASMEC@IIUM), 61% out of 264 patients chose etonogestrel implant as contraceptive method. Etonogestrel implant is a slow-released progestin implant in a single, thin rod inserted subdermally at the women's inner side of the upper arm. It has a low failure rate of 0.05% with a quick return of fertility upon removal. Easy to insert yet some technical issues surrounding the removal of impalpable implant after 3 years is an issue to consider. **Case report:** We presented a 23-year-old, Para 1, who wished to remove the etonogestrel implant after 19 months. She complained of severe headache, amenorrhea and weight gain of 10 kg. On assessment, the implant over her right arm was vaguely palpable and removing it was clinically challenging. Ultrasound and X-ray of her right arm were performed to identify the location of the Implanon (etonogestrel implant). In contrast to the usual method of stabilising the end of subdermally palpable implant, in this case, approximation of the location of the implant was made based on the measurement on the woman's X-ray of the upper arm. Pressure was applied on the estimated location pushing it towards the initial incision made for removal of the implant. **Conclusion:** Despite the subdermal insertion of an implant, multiple factors can contribute to difficult removal. In this case report, it might be contributed by increased weight in the patient hence increase deposition of subcutaneous fat at the insertion site or probable deeper insertion at the initial setting. Hence, one physician needs to be well-trained both in the insertion and removal of Implanon.