

## **Localization of non-palpable single-rod contraceptive implants using ultrasound sonography**

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**Objective:** Two main reasons for a medical professional not being able to palpate the single-rod contraceptive implant (Implanon®) are a failed insertion procedure or an implant inserted too deeply. This study was conducted to confirm that single-rod contraceptive implants that have been inserted too deeply can be located by ultrasound sonography (USS) and to find the most effective USS-device for locating these non-palpable implants.

**Design & Methods:** Four women were included in this study, conducted in the Netherlands. All had undergone insertion with the single-rod contraceptive implant, but in contrast to the normal situation, the implant was not (clearly) palpable. Since the single-rod implant is not radio-opaque, it cannot be located by X-ray or CT-scan. From earlier publications it is known that a correctly inserted single-rod implant can be located by ultrasound. Five different USS transducers were used on each woman to quantitatively and qualitatively locate the rod. The USS transducers consisted of a vaginal probe (8–4 MHz), a low frequency transducer (5–2 MHz), an intermediate frequency transducer (7–4 MHz), a high frequency linear array transducer (12–5 MHz), and a very high frequency transducer (15–7 MHz).

**Results:** In three of the women, the rod was clearly visualized and located. In contrast to the surrounding tissues, the implant itself was visible as a small but clear echogenic spot and created an acoustic shadow. The too deeply inserted rods could be visualized with all available transducers including the vaginal probe. For the woman in whom the rod could not be localized, a negative etonogestrel (i.e. active component of Implanon®) assay supported the USS finding that no rod had been inserted.

**Conclusions:** In case of a non-palpable rod, its presence and exact location can be determined with a variety of transducers commonly available to gynecologists and radiologists. Although Implanon® could be visualized with all of the transducers tested, the best results were obtained with the high (12 and 15 MHz) frequency transducers.