

Localization techniques

Magnetic Resonance Imaging (MRI)

Because of the low cost, the wide availability and high success rate of USS localization, it should be the first imaging modality applied when localizing Nexplanon. However, it might not always be successful. The next option is x-ray or Magnetic Resonance Imaging, which is the best method for unequivocal localization of non-palpable, ultrasonographically not detectable Nexplanon rods (Merki-Feld et al. 2001).

MRI techniques

Nexplanon produces a so-called 'signal void' in MRI. This means that Nexplanon has a low/no signal return and can be identified as a black structure against adjacent structures.

In order to image the implant, it is important that a sequence is chosen which renders the structures around the implant as bright as possible. The implant itself is then visible as a black structure. When the implant is inserted in the subcutaneous fat, fat saturation is not desirable since it makes the low signal implant more difficult to see against the low signal background.

The most satisfactory sequence so far, as can be seen in figures 19a and 19b, is a 3D-gradient echo weighted sequence. This sequence generally renders muscles, tendons and fat with intermediate to high signals.

In addition, vessels containing flowing blood render high signals as well; this prevents vessels accidentally being identified as the implant. Intravenous administration of Gadolinium (Schering AG) increases the signals of vessels and can allow a clearer discrimination from the implant (Merki-Feld et al. 2001). Figure 20 shows an implant inserted intramuscularly.



Figure 19a

MR image of Nexplanon inserted subdermally in the sulcus bicipitalis of the upper arm in the transversal plane. The circle indicates the actual implant.



Figure 19b

MR image of Nexplanon inserted subdermally in the sulcus bicipitalis of the upper arm in the longitudinal plane. The circle indicates the actual implant.



Figure 20

MR image in the longitudinal plane of Nexplanon inserted just underneath the fascia brachii of the musculus biceps. The circle indicates the actual implant.