



RADIOTHERAPY | BLOG

Radiotherapy innovation on show at ESTRO

17 May 2023 [Tami Freeman](#)**Enhancing target visibility**

Danish medical device company [Nanovi](#) showcased BioXmark, its unique liquid fiducial marker. Fiducial markers, used as target reference points to guide radiation therapy and increase treatment accuracy, usually consist of small metal implants. BioXmark is different, consisting of a biocompatible long-chain carbohydrate containing iodine for contrast.

To create the fiducial marker, a small volume (around 80 μ l) of BioXmark is injected into the body, where it changes viscosity from a liquid into a consistency similar to chewing gum. This soft marker can then be visualized on X-ray, CT or MRI scans for treatment planning, radiotherapy guidance or follow-up.

Once in place, the fiducial is highly stable, with studies revealing that it is still visible up to 69 months after implantation. “We have not seen it disappear yet,” said Nanovi’s [Dan Calatayud](#). He noted that the liquid fiducial is easier to implant than metal markers, and that the team had demonstrated “significantly shorter implantation times”.



Soft, stable and visible Dan Calatayud explains the benefits of the BioXmark liquid fiducial marker.

The non-metallic composition of BioXmark leads to a low level of artefacts on X-ray based imaging; it also offers low dose perturbation when used with proton therapy. But BioXmark's main advantage, said Calatayud, is that it can be used within thin-walled, hollow organs – such as the oesophagus, stomach and bladder, for example – where it is extremely difficult to implant a piece of metal. Currently, fiducial markers are only established in prostate and breast treatments.

“We want to open up the possibility of taking this precision into new indications,” he explained.

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