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Device For Creating A Void Inside A Bone Using A Minimally Invasive Surgery

Tech ID: 34647 / UC Case 2010-775-0

BRIEF DESCRIPTION

Methods for treating bone tumors or other target tissues using radioisotopes mixed into a matrix material, most commonly bone cement.

SUGGESTED USES

A. Therapeutic Uses

- » Treating bone tumors with radioactive cement
- » Delivering controlled, localized radiation
- » Protecting nearby tissues
- » Treating vertebral tumors
- » Using multi-isotope strategies for optimized dosing

B. Procedural/Device Uses

- » Cutting or removing bone/tumor tissue
- » Preparing cavities for cement placement

FEATURES/BENEFITS

Benefits

- » Personalized, accurate radiation dosing
- » Consistent dose regardless of cement volume
- » Reduced radiation exposure to healthy tissues
- » Highly localized therapy with predictable depth-dose
- » Safer use of gamma-emitting isotopes
- » More effective treatment through multi-isotope dosing
- » Broad applicability, including vertebral tumors
- » Improved surgical access and preparation
- » Built-in safety margins for non-target tissue

FULL DESCRIPTION

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INVENTORS

- » Keyak, Joyce H.

OTHER INFORMATION

KEYWORDS

Radioisotope therapy, Internal radiation therapy, Brachytherapy, Distance-based dosimetry, Activity concentration, Dose-to-depth calculation, Targeted radiation delivery, Radioactive bone cement, High-Z materials, Multi-isotope mixtures

CATEGORIZED AS

- » **Medical**
- » Devices
- » Other

A dosimetry-driven approach to internal radiation therapy using radioisotope-infused bone cement. By calculating the distance to the tumor, clinicians can determine the exact activity concentration needed to deliver therapeutic radiation while minimizing harm to nearby tissues. The system leverages beta and gamma emitters, high-Z materials, and multi-isotope mixtures to control dose distribution.

[» Therapeutics](#)

RELATED CASES

2010-775-0

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	9,028,499	05/12/2015	2010-775

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

[▶ Radioactive Bone Cement](#)

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