

Flexible Cavity-Filling Device with Fiducial Markers for Patients Undergoing Lumpectomy

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Background & Unmet Need

- Patients with breast cancer often undergo a lumpectomy procedure to remove cancerous tissue prior to additional radiotherapy or chemotherapy
- Resection of tumor and a margin of healthy tissue can create a cavity in the breast tissue
- Implants are often used to demark the cavity for future radiation therapy, and to help maintain the shape of the breast
- However, current implant designs (such as Biozorb) may lead to patient discomfort due to the stiff, rigid design
- In addition, current implants sometimes break apart into sharp fragments prior to being fully absorbed, requiring surgical intervention
- **Unmet Need:** Flexible implants to fill space and provide markers following lumpectomy

Technology Overview

- **The Technology:** A flexible ribbon-like implant comprising a hydrogel material imbedded with a radiopaque marker
- The hydrogel material may be either bioresorbable or non-bioresorbable, and is intended to match the density and elasticity of human subcutaneous breast tissue
- The radiopaque marker may be configured as a wire that runs the length of the ribbon, and may be used to demark the cavity for future radiotherapy
- Unlike rigid implant designs, the flexibility of the implant is expected to reduce patient anxiety and increase patient comfort
- Furthermore, the flexibility of the implant reduces the possibility of fragmentation into sharp pieces that require removal
- The small thickness of the ribbon may accelerate reabsorption compared to current implant designs

Inventors:

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Patents:

US Patent [11,406,489](#)

Publications:

N/A

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Technology Applications

- Demarcation of resected cancerous tissue following lumpectomy to guide radiotherapy
- Flexible implant to fill cavity following resection for the maintenance of normal breast appearance and feel

Technology Advantages

- Flexible design improves patient comfort
- Hydrogel composition emulates the density and elasticity of normal breast tissue
- Small thickness of the ribbon enables rapid reabsorption
- Includes radiopaque markers to guide subsequent radiotherapy

Supporting Data / Figures

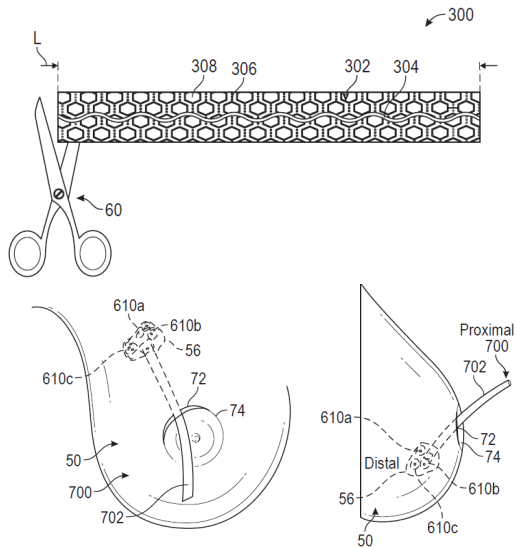


Figure 1: Illustrations of the disclosed flexible implant and the lumpectomy procedure.

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