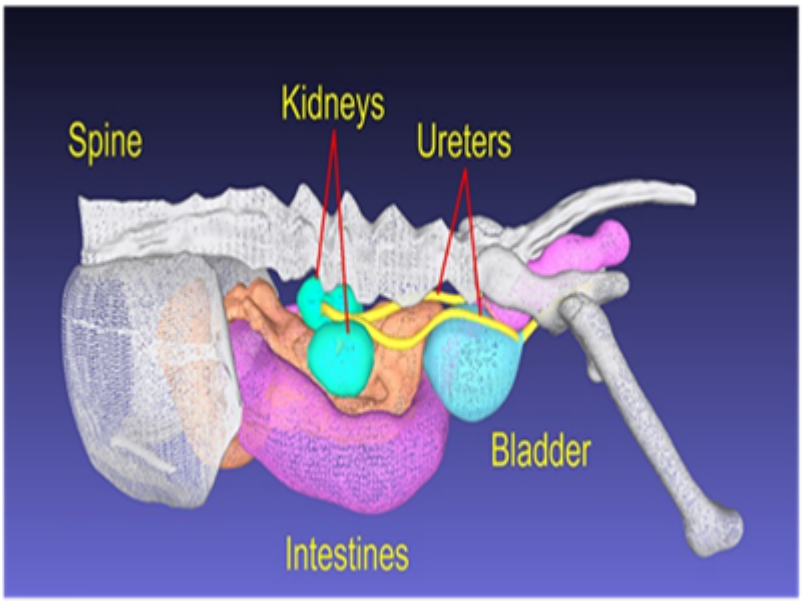
Device and Method to Non-invasively Treat Urinary Stones in Pets

A novel ultrasound-guided technology designed to noninvasively fragment urinary stones in pets, reducing the need for invasive surgery.



What is the Problem?

Upper urinary tract stones in pets are increasingly prevalent and pose significant health risks. Unlike humans, who endure pain while waiting for the stone to pass or undergo surgery, pets have it worse due to the lack of appropriately sized surgical tools and the fragility of their ureters, especially in cats. The scarcity of veterinary experts further complicates the situation, often leaving pet owners with the difficult choice between costly surgery or euthanasia. However, advancements in ultrasound technology offer a solution by enabling the detection and immediate breaking of stones, facilitating their passage and potentially alleviating the need for invasive surgery.

What is the Solution?

The burst wave lithotripsy system offers a non-invasive alternative for fragmenting ureteroliths in pets. This technology uses focused ultrasound waves to break down urinary stones into smaller fragments that can be naturally passed by the cat. The system is designed to account for the anatomical differences in pets, ensuring effective and safe stone fragmentation. Initial experiments have shown promising results, with a significant percentage of stone mass being

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Authors
Michael Bailey

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reduced to fragments less than 1 mm in size.

What is the Competitive Advantage?

Non-invasive: Reduces the need for surgical intervention, minimizing risks associated with surgery.

Effective Fragmentation: Achieves high rates of stone fragmentation, facilitating natural passage of stone fragments.

Safety: Demonstrated negligible injury in animal models, indicating a safe application for pets.

Cost-effective: Potentially lowers the financial burden on pet owners compared to traditional surgical options.

References

1. Maxwell, A. D., Kim, G. W., Furrow, E., Lulich, J. P., Torre, M., MacConaghy, B., Lynch, E., Leotta, D. F., Wang, Y. N., Borofsky, M. S., Bailey, M. R.(2023) , https://pmc.ncbi.nlm.nih.gov/articles/PMC10474658/, https://bmcvetres.biomedcentral.com/, 19, 141