Temporomandibular Joint Replacement (Tmjr) Prosthesis For Dogs And Cats

Tech ID: 33434 / UC Case 2022-628-0

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ABSTRACT

Researchers at the University of California, Davis, have developed a 3D-printed implant for dogs and cats for treating TMJ ankylosis. The device can accommodate any sized animal and is produced with biocompatible materials with high stress/strain resistance.

FULL DESCRIPTION

Temporomandibular joint (TMJ) ankylosis and pseudo ankylosis are rare but severely debilitating conditions in dogs and cats. These conditions present with the progressive inability to open the mouth, commonly caused by maxillofacial trauma. Ankylosis of the TMJs prevents essential functions such as eating, grooming, vocalization, thermoregulation, adequate water intake, and many others. While replacement is common in humans, treatment in animals is limited to various surgical procedures with limited long-term durability.

Researchers at the University of California, Davis, have developed a TMJR prosthesis designed for cats and dogs. The device implant comprises two components connecting to the mandibular fossa, the zygomatic arch, and the mandible. It's designed with biocompatible materials and can be 3D printed for small, medium, and large animals. Laboratory-grade prototypes of the various parts of the implant have been generated.

APPLICATIONS

- Treatment of TMJ ankylosis in dogs and cats.

FEATURES/BENEFITS

- The first implant replacement for TMJ ankylosis specifically indicated for dogs and cats.
- Comprised of biocompatible materials that are wear and fatigue-resistant.
- Multiple sizes can be easily generated for different anatomies of dogs and cats through a 3D printing process.

PATENT STATUS

Country	Type	Number	Dated	Case
Patent Cooperation Treaty	Reference for National Filings	WO 2024/076761	04/11/2024	2022-628

Patent Pending

INVENTORS

- Arzi, Boaz
- Garcia-Nolen, Tanya
- Marcellin-Little, Denis

OTHER INFORMATION

KEYWORDS

TMJ, veterinary, agriculture, implant, medical device, treatment

CATEGORIZED AS

- **Veterinary**
  - Companion Animal
  - Other

RELATED CASES

2022-628-0

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Stem Cell Treatment for Oral Inflammatory Disease and Biomarker to Predict Response

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