

A Smart, Fully-Implantable Craniomaxillofacial Distractor



Ari M Wes, MD, MSc
Ostio LLC

“Ostio is trying to alleviate the stress felt by parents of children undergoing CMF distraction, while giving control back to the surgeon.”

<http://pennhealthx.com/ostio>

Clinical Need

Distraction osteogenesis (DO) is a technique used to generate new bone at the site of a surgical cut by slowly separating plates attached to two opposing fragments. While the procedure is increasingly used in the treatment of various congenital craniomaxillofacial (CMF) deformities including undergrowth of the mandible in patients with disease such as, craniosynostosis or hemifacial microsomia, limitations exist in its current form, including the component that protrudes through the skin for manual engagement of the device.

Solution

Ostio is developing a fully-buried, remote-controlled DO system for the craniomaxillofacial skeleton. This device is intended to be applicable to all patients who would be treated with traditional DO systems, but is completely implanted under the soft tissue, without any external components protruding through the skin. The distraction is actuated through a magnetically driven external controller that can implement physician-defined distraction protocols.

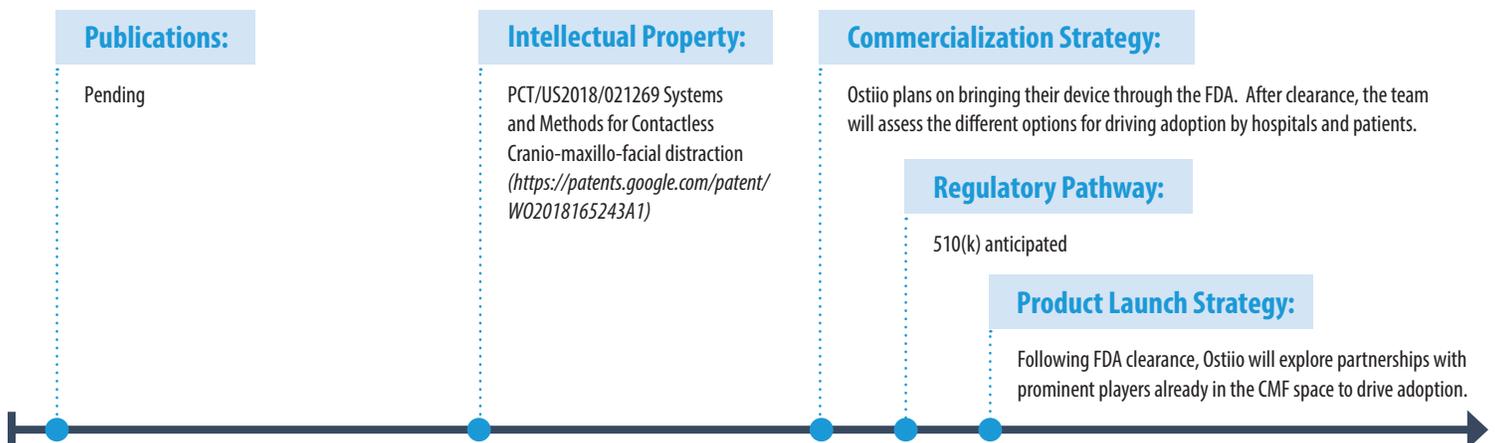
Competitive Advantage

As the device has no parts protruding the skin, it is expected to decrease morbidity such as soft tissue infection and scarring associated with the current device form factor. In addition, as the manipulation will be remotely-controlled and software-driven, patient non-compliance and inaccuracies are also expected to be decreased.

How the ITP Program Supports this Project

With support from the ITP program, Ostio will be developing device prototypes and performing mechanical and biocompatibility testing.

Clinical Translation Pathway



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