

Ostio

Company Overview

Ostio is developing a novel approach to correct skeletal deformities and deficiencies utilizing a fully implantable, magnetically-driven, bony distraction device.

Problem

Distraction is a form of temporary bony fixation that generates new bone at the site of a surgical bony cut through the gradual separation of the opposing bony fragments. This technique is used across the entire skeleton, and increasingly in cranio-maxillo-facial and spine surgery, to correct a variety of conditions that result in growth restriction or deformation. Though distraction represents a critical tool for surgeons, it has significant limitations and complications that have prevented its widespread adoption.

All currently available distractors have some external component that protrudes through the skin to allow for daily expansion of the distractor with a screwdriver. This external component predisposes patients to a variety of complications, including soft-tissue infections, increased pain and analgesic use, and scarring. Further complicating matters, distraction often occurs in the outpatient setting, with expansion dependent on patient / family compliance. The process can be very unpleasant and imprecise, often resulting in a resource-intensive post-operative course, with weekly clinic visits and x-rays to approximate the distance of expansion. These limitations of current distractors have remained unaddressed for decades, and present an opportunity for Ostio to bring a completely novel distractor to market and create value for patients, payers, hospital systems, and physicians.

Solution

Ostio is developing a novel distractor that can be fully buried under the patient's skin, and expanded wirelessly and with precision. By eliminating the external protruding component, our device will significantly reduce post-operative infection, pain, and the stigma of distraction. Ostio's distractor will be engaged magnetically through the use of a computerized external device with a built-in feedback loop to allow for more precise and predictable expansion than with currently available distractors. This design significantly reduces the level of patient / family engagement, and is likely to greatly reduce compliance failures and their sequelae. In bringing its device to market, Ostio plans to leverage the already favorable regulatory and reimbursement environments surrounding the distractor space.

Founder Information

Dr. Jesse Taylor (jataylor@gmail.com), co-founder of Ostio, is an Associate Professor of Surgery at the University of Pennsylvania and the Children's Hospital of Philadelphia. He is a thought-leader in the field of craniofacial surgery, with research focused on osteogenesis, craniofacial distraction osteogenesis, and craniofacial surgery.

Ari Wes (arimwes@gmail.com), co-founder of Ostio, is a medical student at the Perelman School of Medicine at the University of Pennsylvania. He has significant research experience across the field of plastic surgery, with emphasis on osteogenesis, craniofacial surgery, and the expanding role of distraction osteogenesis in surgery.