

Paradigm Surgical



Company Overview

Paradigm Surgical is developing technologies to prevent incisional hernia from occurring in patients that undergo abdominal surgery. The device can repeatedly apply prophylactic mesh faster than current techniques, and has the potential to save billions of dollars in healthcare costs and improve patient quality-of-life.

Problem

More than 2 million patients undergo abdominal surgery in the US annually, with upwards of 15% experiencing incisional hernia that necessitates surgical treatment. Patients suffering from hernia develop a substantial deterioration in quality-of-life, including disability, pain, and long-term dysfunction. Recurrence rates can approach 70% in high risk populations, and each subsequent reoperation is less successful and more costly, further underscoring the inefficiencies of the current treatment paradigms. It is estimated that hernias generate a healthcare expenditure burden in excess of \$7B per year.

Prophylactic mesh augmentation (PMA) has proven to be an effective, safe technique to improve fascial closure and prevent IH. PMA is cost-effective, particularly when used in patients with risk factors such as obesity, smoking, colorectal surgery and re-operative surgery. However, PMA techniques have not become widely adopted, in part due to the added operative time – approximately 45-60 minutes per surgery. Technical challenges related to mesh placement and biomechanical variability also pose significant barriers.

Solution

Paradigm Surgical is developing a simple, automated, mesh affixation device for PMA that can be applied quickly with improved and consistent biomechanical stability relative to current techniques. The device is a hand-held, disposable onlay mesh affixing system that obviates the need for time-consuming hand sewing of mesh, standardizes mesh delivery, and eliminates many of the technical intra-operative challenges of mesh placement. By addressing these barriers to surgeon use, the device will foster more widespread utilization of PMA for IH prevention, potentially improving patient outcomes and reducing healthcare expenditure.

Team Information

Dr. John P. Fischer, founder of Paradigm Surgical, is an Assistant Professor of Surgery at the University of Pennsylvania. He's an expert in reconstructive surgery, with a research focus on clinical and economic outcomes in abdominal surgery and incisional hernia.

Marc-Alan Levine, CEO of Paradigm Surgical, has over 23 years of technical and managerial experience in the medical device field. He has previously served as VP of R&D at Velano Vascular, founded Bay Street Medical and VascularFx (licensed/acquired by Micrus), and worked at several other device companies with successful exits.

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