BioSpectrum
the business of Bio & Health Sciences
ASIA EDITION

Singapore makes ground-breaking innovation in facial fracture fixation

January 6, 2021 | News

Magloy Tech has invented OrthoMag, a first-of-its-kind bone implant that dissolves naturally in the body as the bone heals



The National University of Singapore (NUS) Graduate Research Innovation Programme (GRIP) has borne fruit in a young company, poised to take off in the medical technology (medtech) industry with its ground-breaking innovation in facial fracture fixation.

Founded by NUS Mechanical Engineering Associate Professor Manoj Gupta and his former PhD supervisees, Dr Vyasaraj Badarinath Manakari and Dr Gururaj Parande, Magloy Tech has invented OrthoMag, a first-of-its-kind bone implant that dissolves naturally in the body as the bone heals.

OrthoMag addresses the caveats of prevailing permanent metallic implants, which require a second revision surgery for removal after bone recovery. The novel implant was developed using a biocompatible, non-toxic magnesium alloy that lends it a strength equivalent to titanium to provide superior mechanical stability and bone support to facilitate the healing process. More importantly, the implant dissolves completely into carbon dioxide and water in the body over time.

OrthoMag significantly reduces post-surgery complications, and can potentially render revision operations obsolete in the trauma fixation sector hence reducing the long-term physical, financial and emotional burden on patients.

“Revision surgeries for permanent metallic implants today will typically cost an additional S$5,000 to S$10,000 to the patients, and in some cases cause a risk for post-operative infections, wound healing problems, refractures, nerve damage, and long-term pain. OrthoMag can potentially save the overall healthcare system several billions of dollars a year by avoiding a second surgical intervention,” shared NUS Dentistry Assistant Professor Raymond Wong, who is also an oral and maxillofacial surgeon.

Magloy Tech has secured $200,000 worth of funding from NUS GRIP and Origgin Ventures, as well as a $500,000 Startup SG Tech Grant by Enterprise Singapore.

Image caption- The Magloy Tech team comprising (from left) Venture Development Manager David Sher, Dr Manakari, Dr Parande, and Assoc Prof Gupta