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Singapore invents fully bioresorbable facial bone fixation solution

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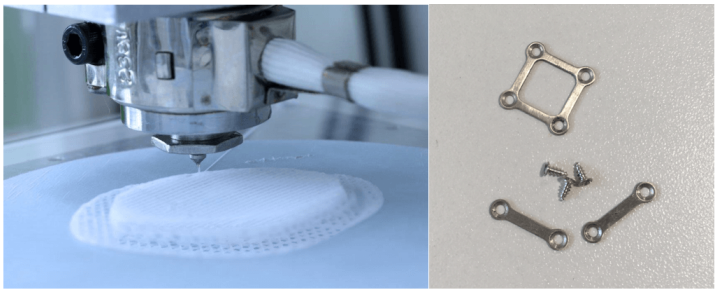
Partners with Osteopore International to commercialize a first-of-its-kind that significantly reduces surgical risks and complications



Singapore-based and a 100% subsidiary of Australian Securities Exchange listed medical device company Osteopore Ltd, **Osteopore International**, announces their partnership with National University of Singapore (NUS) startup, **Magloy Tech**, to commercialise a first-of-its-kind fully degradable facial bone fixation solution consisting of dissolvable magnesium plates and screws.

Currently, Osteopore specialises in the 3D printing of bioresorbable polymer bone implants, which dissolve into carbon dioxide and water in the body within 18 - 24 months. This new solution in collaboration with Magloy Tech will further help facilitate the natural healing for bone fractures, defects and leave zero residue after the wound is restored. It will also significantly reduce post-surgery complication rates and eliminate revision surgeries that are typically associated with permanent bone implants and metal fixtures.

A Step Forward For Current Regenerative Bone Implant Solutions

Current bone implants for fracture fixation procedures utilised in the market are mostly made of titanium or steel, which require removal through surgery after healing. Hardware removal surgery has potential risks and negative side effects, such as infections and pain. Furthermore, as permanent metallic implants have greater stiffness than bones, this could result in further complications if the hardware remains permanently in the body, such as infection, exposure, pain, and hardware malfunction, among others. This brings a physical, financial and emotional burden to the patient.

Although Osteopore's products significantly reduce post-surgical complications, these patients still require metal screws for their implants to be fitted. To alleviate this problem, Magloy Tech has developed **OrthoMag**, a stable implant product made of magnesium alloy that dissolves naturally and completely, as soon as the bone is strong enough to support itself. It can take the form of screws and plates to assist with implant fittings, and is also designed to facilitate natural bone healing, creating an all-round bioresorbable bone implant solution that renders revision surgery completely unnecessary for patients.

As magnesium is an abundant mineral that already exists in the human body, OrthoMag would present remarkable advantages over commercially available metal fixtures. This avoids pain and discomfort, while significantly reducing post-surgery complications commonly associated with permanent bone implants. Patients can experience natural bone regrowth, improved surgery outcomes, reduced healthcare costs, and a better quality of life.

Strengthening the Singapore Medical Devices Sector With Locally Grown Startups

Singapore prides itself in being a leader in the region for medical technologies startups, offering a vibrant and open innovation ecosystem for industry players. With the Singapore Together Alliances for Action (AfAs), MedTech has also been identified as a key industry that is reshaping the global economy. Despite this, the sector remains a highly regulated industry, and MedTech startups tend to face many different challenges even before their commercialisation journey begins.

As foreign manufacturers dominate the medical devices market, this collaboration aims to serve as an example of how local startups can jointly establish themselves in the medical technology market in Southeast Asia. Osteopore is also expanding globally, and has built distribution channels for new products, which can help to elevate new medical device companies within the sector. Moving forward, Magloy Tech and Osteopore will explore the design and co-development of second-generation products and complementary technologies that support potential future business growth in reconstructive surgery.

“As our product directly complements Osteopore’s technology, we are proud to be the first to join them in presenting a complete bone implant solution for surgeons and patients. With Osteopore’s expertise, research data, and manpower, we aim to follow in their footsteps to commercialise our product and contribute to Singapore’s medical device sector,” said Dr Gururaj Parande and Dr Vyasaraj Manakari, Co-Founders of Magloy Tech.

Along the same vein, Mr Goh Khoon Seng, CEO of Osteopore International, added, “In line with government funding, we aim to provide new opportunities to new talents in the sector and ensure that Magloy Tech will be adequately set up in the healthcare market.”

Image Caption:

(Left) Osteopore 3D printed bioresorbable implant, Osteoplug

(Right) Magloy Tech bioresorbable magnesium alloy implant, OrthoMag