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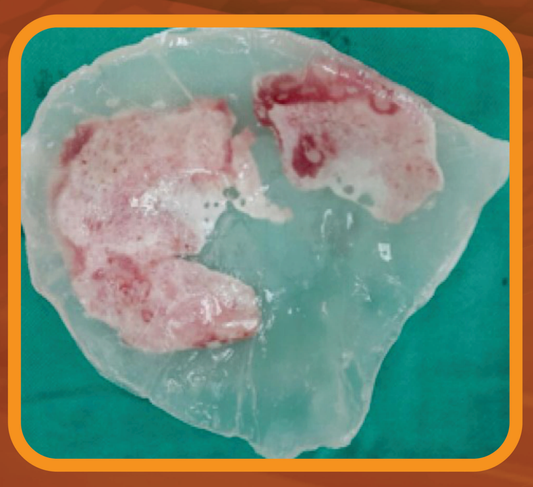
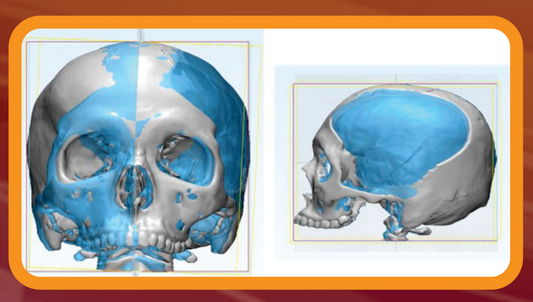
INTELLECTUAL PROPERTY:
- COPYRIGHT (LY2019000404)
- PATENT

Patient Specific Implant Hybrid Cranioplasty





Introduction
- This invention developed a patient-specific implant hybrid cranioplasty.
- Cranioplasty is an elective procedure after recovery of life saving procedure of decompressive craniectomy.
- This reconstructive surgery is carried out to protect the underlying brain to help ensure the potential for recovery of the injured brain.

Problem Statement
- Current method of cranioplasty based on the skills of the surgeon whereby most of the small to medium size defect was topped up with alloplastic material on a free hand basis intra-operatively which often resulted in inaccurate implant approximation with unsatisfactory cosmetic result.

Inventiveness and Novelty
- Generating virtual 3D implant by mirror imaging, 3D print and form a mould by using a 3D printed model.
- Placement of autologous bone in a mould and topped up with alloplastic material to form hybrid cranioplasty implant.

Intellectual Property Status
- Copyright
- Filed for patent

Usefulness and Application
- Reduce operating time
- Aesthetic
- Applicable to patient with cranial defect

Status of Invention
- Already applied to 13 patients at HUSM

Commercial Potential
- 10 cases/month (HUSM alone)
- All hospitals included general and private hospitals

Potential Partners
- USAINS and 3D Gens

Knowledge Management (Grant/Publication/etc)
- Research University Grant (RUT 1001/PPSG/852004) and (RUI 1001/PPSG/8012241)
- Publications: 1 Scopus, 1 submitted to Journal of Craniofacial Surgery
- Students: 1 Graduated MMed Neurosurgeon

Impact of the Product
- Computer assisted modelling lead to high dimensional accuracy resulted to an aesthetical implant
- Reduce rejection and donor site morbidity by using patient's own bone
- Patient regain self confidence
- Affordable

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