Additive printed biopolymer implants for treatment of tracheal stenosis

DESCRIPTION OF THE TECHNOLOGY

The present invention is aimed at solving the problems presented by the current tracheal patches, allowing the obtaining of personalised biopolymer patches for the treatment of tracheal stenosis. More specifically, the invention seeks to solve the problem of severe reduction of the tracheal lumen (subglottic stenosis) by means of the grafting of biocompatible and absorbable materials as a substitute for the current grafting of costal cartilage (the most common procedure that involves a double intervention on the patient to remove said cartilage).

The object of the invention lies both in the formulation of the materials so that they can be printed by 3D printing, for example with fused deposition modelling (FDM) technology, and in the design of the patch, which is adapted both to the treatment of tracheal stenosis and to the Monnier surgical technique.

MARKET APPLICATION SECTORS

The fields of application are public or private health care systems with paediatric thoracic surgery services. Trakeoplast takes the form of a horseshoe-shaped patch for patients to be treated.

TECHNICAL ADVANTAGES AND BUSINESS BENEFITS

- It offers easier and faster suturing, reducing surgical time.
- Reduces complications during surgery.
- Eliminates errors in the manual moulding of the patches.
- Reduces surgical time and costs.
- Offers customised biopolymer patches.

CURRENT STATE OF DEVELOPMENT

The invention is in TRL 6. The next step will be to generate a product or service that can be industrialised and marketed when collaboration with other companies and/or entities is established.

INTELLECTUAL PROPERTY RIGHTS

The product, co-owned by IIS La Fe and the Instituto Tecnológico del Plástico AIMPLAS, has been registered as National Patent P202131165, with an application date of 15 December 2021.

Patent title: Biopolymer implants printed by additive manufacturing for treatment of tracheal stenosis.

COLABORATION SOUGHT

We are looking for a company in the field of medical devices for the licensing of the patent and its development and commercialisation.

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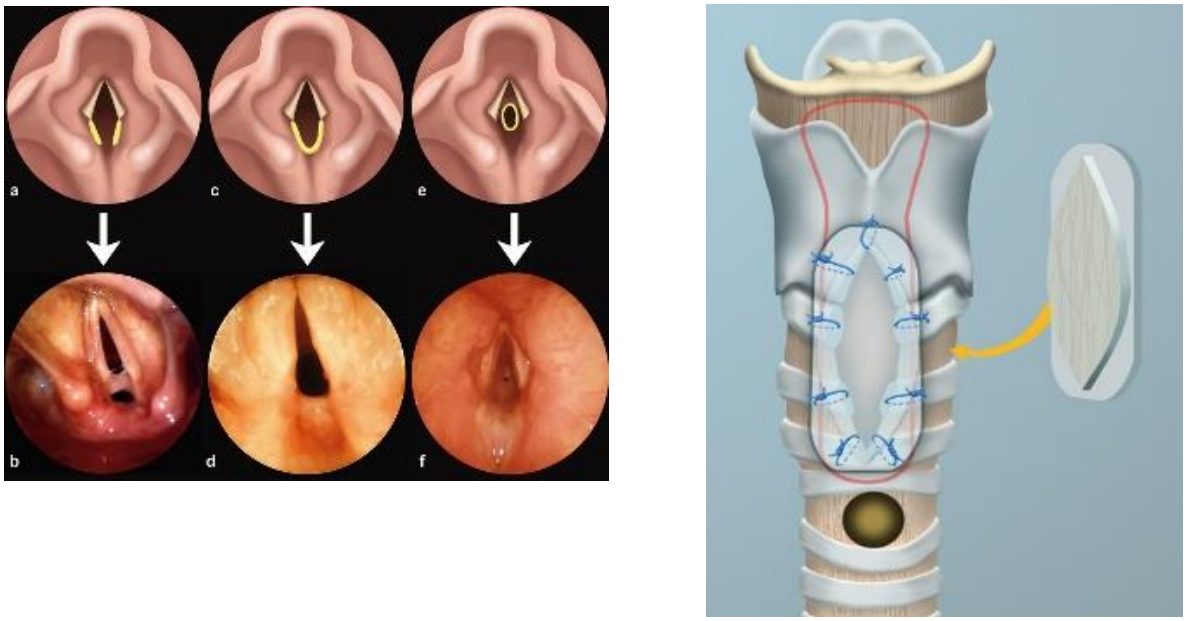

Image . Subglottic stenosis (left) and biopolymer patch (right).

CONTACT DETAILS

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