FASTENING AND PROTECTION DEVICE FOR EXTERNAL VENTRICULAR DRAINAGE

DESCRIPTION OF THE TECHNOLOGY

Ventriculitis associated with external ventricular drainage (EVD) is one of the most important complications associated with the use of these devices, with an incidence ranging between 5% and 20% depending on series and high mortality and morbidity, increased hospital stay, health care costs and treatment of the associated sequelae.

In recent years, coated catheters have been designed with different materials (silver, antibiotics), but high manufacturing costs or changes in the epidemiology infections associated with these devices as well as difficulty maintaining proper hygiene at the entry point into the skin surface, make it necessary to seek for new fastening systems.

Researchers of the Medical Research Institute Hospital La Fe and the Biomechanics Institute of Valencia have developed a new safety and protection device for external ventricular drainage, Drenaven, based on a structure capable of holding inside the DVE that insulates the scalp and, in turn fixed so it prevents unintentional removal.

Likewise, its bactericidal coating or composition prevents bacterial nesting and biofilm formation on the EVD associated with the possible occurrence of ventriculitis episodes.

MARKET APPLICATION SECTORS

The expected field of application of the device is the hospital market in those centers where neurosurgical activity takes place. The system could be used not only for EVD fixation but also for small size filaments in epilepsy and even in locations other than the head.

TECHNICAL ADVANTAGES AND BUSINESS BENEFITS

Technical Advantages:

•Holds correctly the EVD avoiding accidental removal.
•Protects the EVD by isolating the drainage from the skin and surgical wound (common sources of microorganisms that colonizes the EVD and cause ventriculitis).
•Enables proper cleaning of the skin and the surgical wound, thanks to the separation achieved between the skin and the EVD.

Social benefits:

Avoiding ventriculitis episodes associated with DVE has a high economic and social impact (care costs, hospital stays and treatment of associated complications). Besides appearance of ventriculitis increases the chances of permanent neurological sequelae with the consequent human and social deleterious effect.

The system's potential market for a licensee would be 300,000 patients / year only in Europe, estimating a market share of 10% in the third year and therefore 30,000 units/year sales, assuming a sale price of 24 € and manufacturing cost of 4 €. The annual benefits for the company would reach € 600,000 in the third year. It is assumed that the first two years sales were lower, but the return on investment is assured.

CURRENT STATE OF DEVELOPMENT

A prototype at a laboratory stage is been developed. Currently, validation of efficacy and safety in animal rabbit model is being performed.

INTELLECTUAL PROPERTY RIGHTS

Patent pending with registration number: P201630427
Priority Date: April 7, 2016

COLABORATION SOUGHT

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Company interested in signing a licence agreement for the commercial exploitation of the system.

RELATED IMAGES

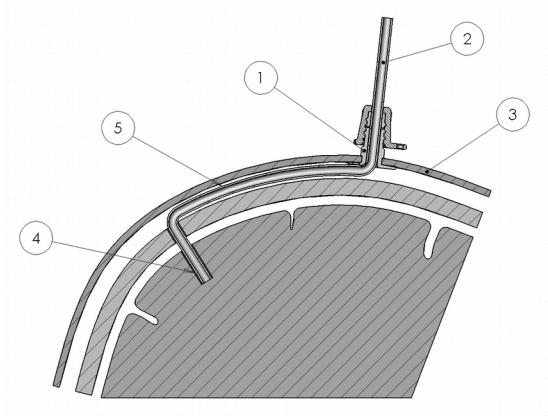

Figure 1. The anchoring of the fastener and protection device (1) to the scalp (3) will be held on the catheter (2), used for ventricular drainage, at the point wherein said catheter has its output to the outside after ventricular insertion (4) and subsequent subcutaneous tunneling (5).

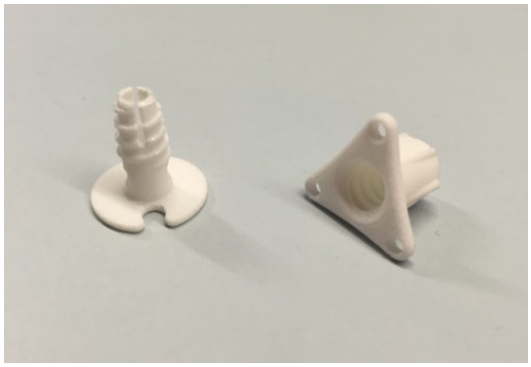

Figure 2. System prototype.

CONTACT

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