SYSTEMS AND METHODS FOR FLUSHING EXTERNAL VENTRICULAR DRAINS

BACKGROUND

Field

[0001] Systems and methods for flushing external ventricular drains.

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[0002] External ventricular drains (EVDs) are used to transport body fluids from one region of the body to an external reservoir. Such systems are used, for example, in the treatment of hydrocephalus use tubes to drain excess cerebrospinal fluid from a patient tissue site, such as the ventricles of the brain, to an external reservoir, such as a drainage bag, to relieve fluid pressure on the brain. Common EVD systems have components that connect to ventricular catheters that have been implanted in the brain to drain fluid out of the brain via patient line. However, after a period of use, solids, and components within the fluid, such as blood (including coagulated blood), cellular, and proteinaceous components, can adhere to the tubes and accumulate, thereby restricting or obstructing flow of fluid into and through the catheter member, necessitating removal and replacement of the EVD, exposing the patient to unnecessary risks associated with such surgery, and increasing the cost of treatments using EVDs.

SUMMARY

[0003] In general, the present disclosure provides a flush assembly for an external ventricular drain (EVD) system comprising a collapsible upper body and a base, the flush assembly connected to the EVD using a connector proximate a bottom end of the flush assembly, a bonding tube surrounding the connector, wherein the base is intersected by the connector, and wherein the flush assembly stores a fluid in an internal fluid

WHAT IS CLAIMED:

We claim:

1. A flush assembly for an external ventricular drain (EVD) system, comprising:

a collapsible upper body and a base, the flush assembly connected to the EVD using a connector proximate a bottom end of the flush assembly;

a bonding tube surrounding the connector, wherein the base is intersected by the connector; and

wherein the flush assembly stores a fluid in an internal fluid reservoir and when the flush assembly is activated, the collapsible upper body pushes the fluid from the internal fluid reservoir to a flushing site to perform a flush of the EVD.

2. The flush assembly according to claim 1, wherein the flushing site is at least one of a tissue site and a drainage site allowing the fluid to be forced from the flush assembly to remove blockages in a catheter or a drainage line.

3. The flush assembly according to claim 1, further comprising a stop cock valve, wherein the flush assembly can be turned on and off depending on an orientation of the stop cock valve.

4. The flush assembly according to claim 1, wherein the connector is attached with a luer lock connector.

5. The flush assembly according to claim 1, wherein the connector is

manufactured from a plastic or urethane.

6. The flush assembly according to claim 1, wherein the bonding tube is manufactured from a flexible material and provides a surface for chemical bonding to other similar materials.

7. The flush assembly according to claim 1, wherein a fluid flow is bidirectional.

8. The flush assembly according to claim 1, wherein the fluid is expelled in at least one of even amounts and non-even amounts in each direction.

9. The flush assembly according to claim 1, wherein the amount of fluid expelled in in each direction is adjustable.

10. The flush assembly according to claim 1, wherein the collapsible upper body is manufactured from a flexible material and the base is manufactured from at least one of a flexible material and a hard material, and when assembled form the collapsible upper body and the base form the internal fluid reservoir.

11. The flush assembly according to claim 10, wherein the flexible material comprises at least one of silicone or a thermoplastic elastomer and the hard material comprises at least one of ABS, polycarbonate, PEEK, polyurethane and plastic.

12. The flush assembly according to claim 1, further comprising a tactile

feature.

13. The flush assembly according to claim 1, wherein at least one of the collapsible upper body and the base comprise a hemi-spherical structure.

14. The flush assembly according to claim 13, wherein the hemi-spherical structure has a flat top.

15. The flush assembly according to claim 14, wherein the flat top has a tactile feature.

16. The flush assembly according to claim 1, wherein the collapsible upper body and the base comprise two hemi-spherical structures.

17. The flush assembly according to claim 1, wherein the flush assembly is connected to the EVD system in-line, and wherein the connector is connected to an externalized ventricular catheter while drainage line is connected to the EVD system.