Novel Shunt Catheter System with Inline Filter

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Technology description

Our inventors have proposed improvements to the proximal shunt catheter design that will address these common problems that could cause the shunt to fail. Unlike conventional catheter systems that have close-tube configurations with small drainage holes on the distal end, this invention has a unique open-tube structure with significantly enlarged drainage holes. It also incorporates the use of safety valves built within the catheter to allow influx of fluid if the drainage holes become occluded. An open ended structure significantly increases the surface area for drainage while allowing a user to flush the catheter clean, when needed. To prevent brain matter from entering the tube during insertion, a stylet is included that occludes the open distal end and can be withdrawn once the catheter is in the appropriate position. Additionally, an inline filter is included to keep large particles from blocking the shunt valve, while acting as a pumping reservoir. These enhancements provide a more efficient shunt catheter that allows for better flow without occlusion while still maintaining a filtration system to prevent the valve from being obstructed. Notably, this device is compatible with all systems currently in use and offers improved treatment options in the management of hydrocephalous.
At the University of South Florida we have developed a novel proximal shunt design that has the potential to reduce the malfunction rate of ventricular shunts to zero.

Application area

medical device,critical care medical devices for hydrocephalous

Advantages

Inline filter to keep large particles from occluding the shunt valve Open-tube shunt with built-in stylet for controlled drainage Provides the ability to flush the system transcutaneously Compatible with all systems currently in use

Institution

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