Clearsight MicroPuncture

The solution is a novel micro puncture balloon catheter system that makes the Transjugular Intrahepatic Portosystemic Shunt (TIPS) procedure safer, easier, and more accessible.

What is the Problem?

Decompensated cirrhosis is a life-threatening complication of advanced liver disease and caused more than 1.48 million deaths globally in 2019 and 56,585 deaths in the US in 2021. A fatal complication in patients with decompensated liver cirrhosis is acute variceal bleeding (AVB), one of the major causes of death in patients with cirrhosis. The most effective life-saving procedure to stop AVB is a transjugular intrahepatic portosystemic shunt (TIPS), an artificial shunt created between the hepatic vein and the portal vein. The TIPS procedure involves an intrahepatic puncture, which remains one of the most challenging procedures and is associated with high risks of complications in up to 20% of cases even in the hands of experienced Interventional Radiologists. As a result, there is a need to develop alternative methods for TIPS creation with lower technical failure rates and complications.

What is the Solution?

The solution is a medical device that incorporates a more pliable fine needle tip that is less likely to inadvertently puncture non-target tissue than the currently used devices, and in-plane intravascular ultrasound (IVUS) and fiber optical borescope for visualization of the area where the shunt is needed.

What is the Competitive Advantage?

The competitive advantage of this technology lies in its ability to significantly decrease the procedure time, the number of medical staff, consumption of x-ray contrast agent, and prevent the prolonged hospital stay due to complications which will accordingly lower the overall medical cost. The fine needle makes the procedure much less invasive, reduces the high incidence rate of major complications, and significantly lowers the technical challenges of the blind puncture in TIPS procedure, ultimately increasing the availability of TIPS treatment.

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Category

Device/Imaging
Selection of Available Technologies

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