"IMPACT ASPIRATION THROMBECTOMY DEVICE" VCU #12-091

Applications

- Used with aspiration systems to disrupt clots
- Ischemic Stroke
- Deep Vein Thrombosis

Advantages

- Provides dynamic, disruptive suction
- Removes the clot faster than with aspiration systems alone
- Is more effective at removing difficult clots than traditional aspiration
- Integrates easily with current suction thrombectomy devices

Inventors

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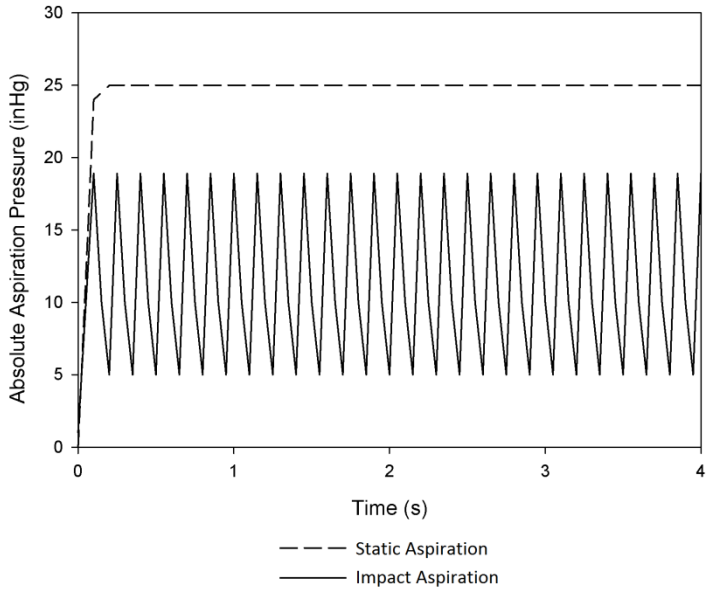
Market Need

Ischemic stroke is a medical condition where blood flow to the brain is cut off, typically by a blood clot. Thrombectomy is the primary treatment for this and involves removal of the occlusive clots that caused the stroke. Currently this is accomplished using either stents or static aspiration (suction) and is successful in only 85% of cases.



Technology Summary

This technology is a supplemental device designed to easily integrate into traditional suction thrombectomy systems and deliver controlled dynamic aspiration to the clot. The dynamic aspiration pressure profile described here (see figure) has been shown to significantly improve clot removal (both removal time and overall success rate) in a thrombectomy model (Simon, Grey, et al) while reducing peak mechanical load on the surrounding vasculature. At present, this technology has been shown in a thrombectomy model to clear a previously untreatable clot in less than 10 seconds.

Technology Status

Simon S, Grey CP, Massenzo T, Simpson DG, Longest PW. Exploring the efficacy of cyclic vs static aspiration in a cerebral thrombectomy model: an initial proof of concept study. *Journal of NeuroInterventional Surgery*. 2013 Nov; Available from: http://dx.doi.org/10.1136/neurintsurg-2013-010941.

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This technology is available for licensing to industry for further development and commercialization.