

“BIOHEMOSTAT™: ACUTE TREATMENT MODALITY FOR HIGH PRESSURE BLEEDING” VCU #00-047

Applications

- Device to stop high pressure bleeding without impeding collateral blood flow
- Applied for treatment of penetrating wounds for both civilian and military medical purposes

Advantages

- Removable and/or biodegradable
- Reduces risk for amputation due to ability to sustain collateral blood flow
- Produces a back pressure to ensure high pressure bleeding stops
- Promotes blood clotting, through embedded hemostatic agents, to treat the wounded area

Inventors

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Market Need

Even though deaths from high pressure bleeding have decreased in the past few decades, there exists a need for a treatment that can both stop high pressure bleeding and allow collateral blood flow. Using a tourniquet helps stop bleeding, but contributes to the chance of amputation due to the limitation of blood flow throughout the region of the wound. Other disadvantages associated with the use of tourniquets include nerve damage, post-tourniquet syndrome, intraoperative bleeding, and limb ischemia. Other treatments include the use of fibrin glue, fibrin sealant and dry fibrin to stop venous bleeding. The problems with these treatments are increased risk to viral exposure, high prices compared to other treatments, and high tendencies to be washed away from the wound site.

Technology Summary

The BioHemostat™ device solves these problems of other technologies by providing a simple and easy to apply tool to ensure that the wound stops high pressure bleeding while sustaining blood flow throughout the wound and restricting viral components from contaminating the site. Due to its swelling nature, this technology produces a back pressure in the wound and results in the impedance of high pressure blood flow through the wound. This device can produce a back pressure at 60 mmHg within three (3) minutes of placement on the site. As the device swells, it releases blood clotting agents as well as antibiotics and analgesics to heal the wound while it is increasing back pressure.

Technology Status

This technology has been prototyped and tested

Issued Patent (No. 8,497,408)

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