SAMPLE ABSTRACT

Serendipity, Super Glue and Surgery: Cyanoacrylates as Hemostatic Aids in the Vietnam War

By

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In 1942, H.W. Coover was working to develop a clear plastic for WWII machine gun sights. The compound he developed, cyanoacrylate, proved to be a complete failure. After setting the formula aside for many years, Coover was inspired to rethink the use of the compound and began to explore its potential as a strong, quick drying glue. In 1951, what we now know as "superglue" was first marketed as "Eastman 910". It was not long before Coover and his colleagues began exploring its potential as a biological adhesive.

In the early 1960s, Coover, in collaboration with Ethicon Co., applied for FDA approval of cyanoacrylate glues as tissue adhesives. The most dramatic and innovative medical application of cyanoacrylates was as a hemostatic agent during trauma surgery. This presentation will outline the aforementioned use of Coover's cyanoacrylates, discussing the promising outcomes of superglue in military surgery of the 1960s, and explain why it did not achieve widespread usage outside of the Vietnam conflict.

Using scientific journal articles, medical reviews and case studies of cyanoacrylate use in military casualties, this presentation will focus on the most extensive medico-surgical application of superglue: its use by American forces in Vietnam. Armed with Freon propelled n-butyl cyanoacrylate spray developed by the military, specially trained surgical teams achieved instant hemostasis in about thirty, otherwise fatal, cases of hemorrhage. Although not all patients survived, experts did not attribute the deaths to complications of cyanoacrylate use. Despite the dramatic results observed in Vietnam, further studies required for FDA approval of this "surgical superglue" were not economically feasible for Coover and Ethicon Co. and the project was reluctantly abandoned. It was not until 1998 that the FDA approved cyanoacrylates for medical use; Coover's dreams of saving countless lives with his tissue adhesive are finally being realized in modern surgery.

Oral platform presentation preferred.