



GAVIN CONFERENCES

2nd International Conference on **Surgery and Medicine**

November 19–20, 2018 Dubai, UAE

Suture lifesaving “thread”: An insight into past, present and future

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Suture is a necessary device during surgical procedures intended for ligation and tissue approximation. As human body consists of various organs and tissues, each one of them require different type and size of suture and needle. Hence Sutures are no ordinary threads but are medical device innovation “Threads on which LIFE may depend.” as quoted in a textbook. They have a prominent role among all other wound closure devices representing a market estimated to be currently around 1.3 billion annually. The first sutures use is recorded back to Egyptian and Greek Gladiator days. Numerous naturally available materials like dried animal gut, animal hair (e.g., horse hair), leather, silk, tree bark, and plant fibers (e.g., linen, cotton) were used in past as suture materials, while some of them like catgut and silk are still in use today.

Early 1970s saw natural sutures being replaced by synthetic sutures developed from polymers. Time witnessed the development of various synthetic biomaterials such as poly glycolic acid(PGA) followed by poly (lactic-co-glycolic acid) (PLGA), polydioxanone as suture materials. Recent pasts have observed development of sutures with additional properties like release of antibiotics or other therapeutic agents to enhance wound healing. Use of Triclosan coated suture has been one such successful innovation with clinical significance in reducing surgical site infections. Current trend shows adaptation of emerging knotless barbed sutures technology. Continuous research and innovation may yield a reusable laparoscopic suturing device in future. This clearly indicates space for more innovation in suture space.

Biography

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