Barbed Suture For Wound Closure And Healing

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I think it’s clear when you look at the history of wound closure that we’ve made huge strides in terms of defining, developing and changing utilization for suture in the last couple of decades. One of the great achievements more recently has been the exploration of barbed suture.

Our understanding of the physiologic basis for wound healing and wound closure has changed over the last decade. We’ve come to comprehend what happens when you use interrupted, knotted suture as opposed to a running suture along a suture line, and how tension is distributed along the suture line. A running suture is time saving but tends to migrate toward the middle of the incision where the tension is greatest. An improvement could be made if the tension was more evenly distributed in smaller intervals along the suture line. This is how barbed suture was developed. It takes separate bits of tension and distributes it at very, very small intervals, say 1 mm apart, with even and predictable tissue bites. You therefore have no accumulated tension in any single place.

In addition, these barbed sutures are knot-free. This eliminates the amount of foreign body material in the suture line, resulting in a decreased inflammatory response where there would have been a knot. This will not only improve healing right at the suture line, but decreases the risk of a separation from knot breakage or disruption.

Surgeons who are now familiar with barbed suture are coming to understand its broader surgical applications beyond wound closure. Beyond cutaneous skin closure, the same rules apply related to even distribution of tensile strength. Over the course of the next several years, we will gain better understanding of possible cosmetic advantages. We can also expect to see a broader utilization of barbed suture in closure of deeper layers of the abdominal wall and other procedures requiring soft tissue approximation.

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