

Innovations in Wound Care to Improve Patient Outcomes

09 October 2019 | Opinion | By Dr Ryan Nunley

Topical skin adhesives are increasingly getting wide acceptance globally continuing to adopt it as a standard of care



It is well recognized that we have an ageing population across the globe with this demographic requiring increased healthcare needs including joint replacement surgery. Globally there are 5.3 million joint replacement procedures performed per year and we are constantly looking for ways to improve outcomes and reduce the risk of complications. While the implants remain a substantial component and focus in joint replacement surgery, soft tissue management has a key role to play in achieving optimal patient outcomes.

On my last visit to Asia Pacific in October 2018, in Beijing, I met with a group of surgeons to discuss and agree through a modified Delphi panel the goals, challenges and strategies in soft tissue management in joint replacement surgery. This resulted in a consensus on strategies to optimize wound closure to reduce the risk of complications, improve surgical outcomes and guide future surgical education.

As I visit Asia Pacific in 2019 my focus is, as a passionate advocate of continual education, to share experiences, knowledge and the great outcomes that I'm getting since I changed my practice in joint procedures. My goal is raising awareness in the area wound closure and how we look at this and how we can teach others to gain better quality outcomes.

One of the concerns across the world is surgical site infection. According to the World Health organization more than 1 in 10 patients in low- and middle-income countries will get a surgical site infection.

For anyone who has had a family member or they themselves have had an infection, it is devastating. Surgical Site Infections can be catastrophic to patients, physically and mentally and add substantial additional costs to the healthcare system. The impact of SSI is even higher for joint replacement procedures and can cause permanent and significant physical impairment for patients. It is reported to increase the hospital stay by up to two weeks, increase care costs by up to 300%, and double the rehospitalization rates.

We have taken steps to address these risks and some centers of excellence have very low infection rates and readmission rates, but we have not been able to eliminate surgical site infections completely.

In my experience, most surgeons are likely to continue their approach to surgery as they were trained, particularly in wound closure. Today, there are new technologies which can provide more consistent and better patient outcomes and better infection protection.

Two of the biggest innovations I have experienced which can help make a difference in patient outcomes and infection prevention are in wound closure. These advanced wound closure technologies include knotless tissue control devices or barbed sutures with triclosan coating, and topical skin adhesives that combine a polyester mesh with a 2 octyl cyanoacrylate as a waterproof wound closure dressing.

In my practice the knotless tissue device has been a game-changing innovation. It is relatively inexpensive, particularly in relation to the total procedure. The one I use is a little different from other barbed sutures with robust anchors which are molded into the suture and therefore does not weaken the central core of the suture. I find it reduces operating time by ten minutes, provides even tension across the wound, gives a watertight closure, is strong, and coated with an antibacterial agent which stops bacterial colonization helping to prevent infection.

The topical adhesive has really made a difference for patients in my practice. Patients no longer need staples which create additional punctures in the skin, no longer require the patient to return to the hospital for painful staple removal, can be harder for the patient to manage their wound post operatively and staples provide additional entry points for bacteria around the incision. The topical skin adhesive provides easier wound care for the patients with no wound dressing changes required, enables them to shower almost immediately post-surgery, creates a microbial barrier reducing the risk of infection, and delivers better cosmetic outcomes. In my practice where patients have previously had a total knee reconstruction with staples on their first knee surgery, they are very happy to have Topical Skin Adhesive used on their second knee. Topical skin adhesives are increasingly getting wide acceptance globally continuing to adopt it as a standard of care.

Innovative wound closure technology is really evolving and helping to improve outcomes, reduce hospital length of stay, readmission rates and achieving better patient satisfaction.

Dr Ryan Nunley, Associate Professor, Washington University Orthopedics, Barnes Jewish Hospital.