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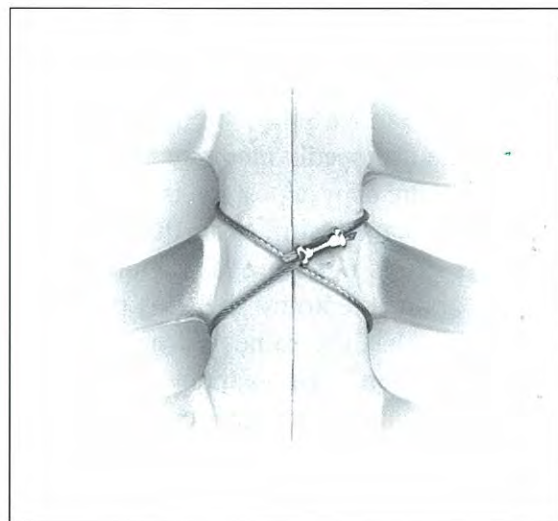
Pioneer Surgical Technology's Sternal Cable System[™]

Increased Stability and Fewer Complications

The median sternotomy has been the traditional approach for cardiothoracic procedures and the closure for this procedure is fairly straightforward.¹ The materials and technique used should provide a secure fixation of the sternum and prevent material migration through the bone.² The **Sternal Cable System** by **Pioneer Surgical Technology (Marquette, MI)**, offers superior performance, greater ease of use, and substantially less susceptibility to failure than monofilament wire due to the physical property of the cable as well as the crimp-style method of attachment. The patented tensioner/crimper instrumentation assures consistency among constructs. The tension gauge ensures that each cable is tensioned to the same degree, eliminating human variability by distributing pressure evenly and minimizing the chance of cutting into the bone. The cable, crimped in place, cannot slip or loosen. The results: a decreased risk of sternal non-union, dehiscence and infection, fewer rewiring operations, faster healing, less patient pain, shorter hospital stays, lowered costs, and overall greater patient satisfaction.

Robert G. Wiencek, Jr., MD, Cardiovascular Surgery Associates (Las Vegas, NV), is a long-term user of the Sternal Cable System. "We started using it about 10 years ago, at a time when we were having problems with our sternal wires fracturing, which was causing unstable sternal closures. We were exposed to the Pioneer Cable System and once we began using it, noticed immediately we no longer had any problems

with fracturing. We also felt that it gave us a much more stable closure and decreased our incidence of sternal dehiscence. I'm in a group of eight surgeons and we do about 1,000 hearts a year. We have been very happy with the stability of closure, the significant decrease in the development of sternal non-unions and sternal dehiscence, as well as the lack of infection."



Cable systems have replaced wire almost entirely in orthopedic and spinal surgery. In sternum closure, cable systems have been shown to be more flexible than wire, allowing the surgeon to easily utilize a figure-of-eight suturing construct while also allowing the cable to more uniformly hug the bone, decreasing chances of cutting into it. Cable systems are also stronger than wire, eliminating concern that larger patients may break wires. Thomas J. Vander Salm, MD, Chief of Cardiac Surgery, North Shore Medical Center (Salem, MA),

made the switch from standard sternal wires about seven years ago, and notes: "You can tell immediately that this system is far more stable than standard sternal wires. It distributes the load more evenly and because it's inserted as a figure-of-eight configuration, it gives longitudinal stability rather than just transverse stability. The end result is a far more rigid closure than you could normally achieve with the standard stainless steel wires."

Serious healing complications such as instability, infection and dehiscence occur in 0.3% to 5% of cases and can require up to several weeks of intensive treatment that can significantly increase morbidity, mortality, and hospital costs.³ According to Dr. Vander Salm, "we know from the orthopedic literature that rigid secure bony apposition is far more resistant to infection than when there is motion at a fracture site or an osteotomy site. It is probable that the same is true in the sternum." Dr. Vander Salm is convinced that the increased stability from the cable system has led to a far lower incidence of infection in his patients. "We have not detected a sternal infection in almost 650 patients since beginning a new cardiac surgery program in 2003, a rather unusual experience for most cardiac surgeons."

One study compared the effectiveness of the Pioneer Sternal Cable System (Cable Group) with the standard monofilament system (Wire Group) in sternum closures following cardiac surgery (CABG or valve replacement). When serious adverse event rates were contrasted, the Wire Group had an overall event rate of 5.1% compared to 2.2% for the Cable Group.⁴ Sternal instability, dehiscence, and deep infection rates for both groups were fairly low, although the serious adverse event rate for wire was higher for each event criterion. This study further reported a statistically significant difference in patient reported pain scores. Additionally, Physicians Assistants noted that cable patients tended to request fewer narcotics post-operatively, had improved inspiratory volumes, experienced faster mobilization, and improved bony fusion rates.⁴

G. Kimble Jett, MD, The Heart Hospital, Baylor Plano (Plano, TX), has been pleased with the Sternal Cable System and finds it is a more efficient and organized way to close the sternum. "I've tried every other system and this is the best way to seal the sternum. There is greater tensile strength as you are using a braided cable versus a monofilament wire. This should result in improved healing and less dehiscence. In

the two years that I've been using this cable system, I've had no sternal dehiscence and no sternal infection and, because you get better approximation of the sternal edges, the patients have less chest pain."

Pioneer Surgical Technology is a leading innovator in the design and manufacture of spinal and orthopedic implants. In 2005, Pioneer launched the following spinal implant systems in addition to receiving the CE mark for the NUBAC™ Intradiscal System: Quantum Spinal Rod, Pioneer Anterior Cervical Plate and its PEEK-Plus Vertebral Replacement Devices. 

For more information about the Pioneer Surgical Sternal Cable System, call 1-800-557-9909, visit the web site at www.pioneersurgical.com.

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