



Potential Savings and Clinical Impact on Health Care Facilities

Introducing Minne Ties Agile MMF

Minne Ties® Agile MMF is an innovative approach to achieving maxilla-mandibular fixation (MMF). Unlike other systems on the market, Minne Ties is a non-invasive solution that provides a steady force and secure bite to allow for closed reduction fracture management or stabilization for internal fixation.

The Minne Ties self-locking suture tie design resembles that of a zip tie — one end being a smooth clasp head and the other a blunt tip introducer — which minimizes the risks of wire sticks to the surgeon and decreases patient discomfort.

Mimicking the embrasure wire application technique, each tie is applied through the interdental space from posterior dentition to anterior dentition, which when finished creates a balanced series of bilateral sutures. And with the sleek design of Minne Ties, doctors are granted easy access to fractures for exposure, reduction, internal fixation and incision closure.

These reasons and many more are why Minne Ties Agile MMF is a **safe, simple and efficient** alternative to existing wire or hybrid devices.

Potential Savings and Clinical Impact on Health Care Facilities

When treating jaw fracture patients, the application of arch bars or hybrid systems are the standard method used to achieve MMF before either an open reduction internal fixation (ORIF) or a fracture stabilization is performed. Achieving MMF with these systems requires scheduled or emergency (add-on) operating room (OR) time, as well as the use of general anesthesia due to the intrusive and painful nature of their applications. Although they are the current standard of care to obtaining pre-injury occlusion, each shows significant drawbacks such as: application time⁶, impact on dentition/soft tissue⁷, risk of wire stick⁶, patient discomfort⁷ and tooth root damage⁵.

After an analysis of recent studies, Minne Ties show significant cost savings over arch bars and the potential for cost savings over hybrid systems. On average, arch bars take 54.3 minutes or longer to install¹ and screw based hybrid MMF systems take an average of 15 minutes². Minne Ties can be applied to achieve MMF in an average of 12 minutes⁹ without using sedation, but instead using a topical anesthetic. This is done to avoid the risks and cost associated with sedation and general anesthetics³. Minne Ties have also shown a reduction in OR time. Unlike arch bars and hybrid systems they

are installed in the interdental space with a blunt tip introducer and are non-invasive by design, sparing the soft tissue of unnecessary trauma. This also minimizes the risk of wire sticks and can show significant reductions in health care costs for treating jaw fracture patients.

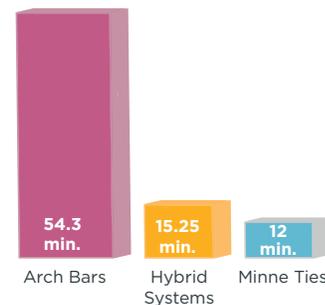
The removal of arch bars and hybrid systems is painful and requires sedation or general anesthesia — which also requires OR time. Often times mucosal growth must be cut away to remove screws and wires⁴ from hybrid systems. Minne Ties, though, after being cut, can be slid out of the interdental space. This potentially eliminates the need for general anesthetic and OR removal, which allows the removal procedure to be done in a clinic or doctor's office. Minne Ties can be removed in less than three minutes with a small pair of scissors and with little pain to the patient.

Minne Ties have shown during institutional review board (IRB) application to reduce OR time over both arch bars/wiring and hybrid systems of 3-42 minutes, resulting in savings from \$970 to \$1,340 per procedure. What is not illustrated is how Minne Ties can reduce scheduling conflicts through office application and removal.

Total Cost: OR Application Time & Product Cost

	ARCH BARS	HYBRID	MINNE TIES
LIST PRICE	\$420.00	\$2,470.00	\$1,950.00
OR TIME (minutes)	54.3 ¹	15.25 ²	12 ⁹
COST OF OR TIME	\$3,366.60	\$945.50	\$744.00
TOTAL COST of application	\$3,786.60	\$3,425.50	\$2,694.00
SAVINGS PER CASE with use of Minne Ties	\$1,342.60	\$971.50	

Total OR Application Time Average Time ^{1,9}



References:

- Kendrick, D. E., Park, C. M., Fa, J. M., Barber, J. S., & Indresano, A. T. (2016). Stryker SMARTLock Hybrid Maxillomandibular Fixation System. *Plastic and Reconstructive Surgery*, 137(1), 142-150.
- Stryker Corp. Early product surveillance. Available at <https://cmf.stryker.com/assets/files/d/hmmf-potential-cost-savings.pdf>. Accessed February 8, 2017.
- Cousin, G. (2009). Wire-free fixation of jaw fractures. *British Journal of Oral and Maxillofacial Surgery*, 47(7), 521-524.
- Ingole, P. D., Garg, A., Shenoi, S. R., Badjate, S. J., & Budhreja, N. (2014). Comparison of Intermaxillary Fixation Screw Versus Eyelet Interdental Wiring for Intermaxillary Fixation in Minimally Displaced Mandibular Fracture: A Randomized Clinical Study. *Journal of Oral and Maxillofacial Surgery*, 72(5), 958.
- Hashemi, H. M., & Parhiz, A. (2011). Complications Using Intermaxillary Fixation Screws. *Journal of Oral and Maxillofacial Surgery*, 69(5), 1411-1414.
- Ansari, K. (2011). A Comparison of Anterior vs Posterior Isolated Mandible Fractures Treated With Intermaxillary Fixation Screws. *Archives of Facial Plastic Surgery*, 13(4), 266-270.
- Ayoub, A. F., & Rowson, J. (2003). Comparative assessment of two methods used for interdental immobilization. *Journal of Cranio-Maxillofacial Surgery*, 31(3), 159-161.
- Macario, A. (2010). What does one minute of operating room time cost? *Journal of Clinical Anesthesia*, 22(4), 233-236.
- Early Product Surveillance data on file at Summit Medical

Disclaimer:

A surgeon must always rely on his or her own professional clinical judgment when deciding whether to use a particular product to treat a particular patient. Summit Medical, Inc. does not dispense medical advice and recommends that surgeons be trained in the use of any particular product before using it in surgery. The information presented is intended to demonstrate risks associated to wire and hybrid systems. A surgeon must always refer to the instruction for use and product labeling before using any Summit Medical Inc. product. Products may not be available in all markets because product availability is subject to the regulatory and/or medical practices in individual markets. Please contact Summit Medical, Inc. if you have questions about the availability of Summit Medical, Inc. products in your area. **Always refer to the instructions for use before using any Minne Ties products.**