

Improving Safety and Simplicity with Less Invasive Jaw Fixation

For the thousands of people who suffer a broken jaw each year – and the surgeons who repair them – speed and simplicity of treatment are better with the adoption of Minne Ties® Agile MMF (maxillomandibular fixation) device. Clint Humphrey, MD, FACS, is a board certified facial plastic and reconstructive surgeon who sees dozens of these cases each year and increasingly uses Minne Ties for intraoperative MMF. Minne Ties have cut his MMF application time by 40 minutes and decreased the risk of wire sticks.

As a fellowship-trained surgeon and co-director of the facial plastic and reconstructive surgery fellowship at the University of Kansas Medical Center, part of Dr. Clint Humphrey's job is to constantly evaluate how new technology might improve both patient care and efficiency.

New innovations must meet high standards of reliability, efficacy, safety and cost-effectiveness.

Two years ago, he found one such innovation in Minne Ties Agile MMF, a non-invasive, self-locking suture system for jaw fixation and stabilization needed for fracture management.

"I understood it and was excited about it as soon as I saw it," Humphrey said. "And I could see right away how it could make repairing mandible fractures easier."

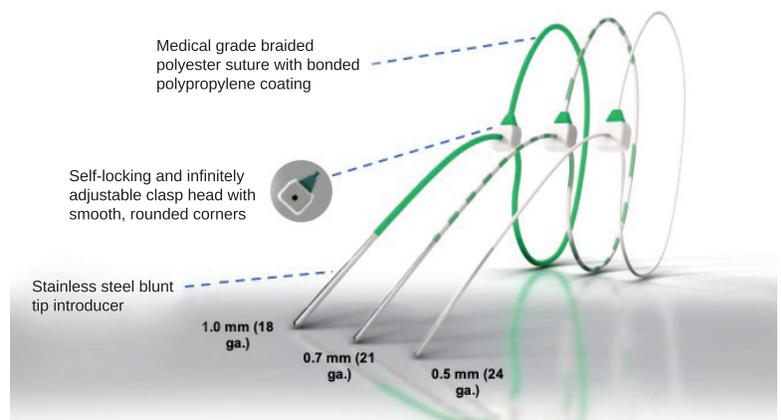
Placing the jaw into MMF during mandible fracture repair is essential to establish and maintain a patient's occlusion. Arch bars and wires have been the gold standard for decades, but passing wire that frequently kinks can be challenging and puts the surgeon at high risk for glove punctures, wire stick injuries, and blood-borne infections^{1,2}.

The Minne Ties design, however, makes MMF faster and safer for the surgeon, regardless of experience, from first year residents to department chairs. Minne Ties are like a household zip tie, but are engineered with rounded edges and blunt ends that decrease risk, but that still pass easily through the mucosa and interdental spaces.

Humphrey says the simplicity and reliability of Minne Ties are what won him over. They work and he trusts them in the operating room.

"If a patient has good dentition, Minne Ties are the first option I consider to place a patient into MMF to ensure occlusion," Humphrey said. "Minne Ties take only about 10 minutes to apply, instead of 50 minutes or more for arch bars and wires³. They maintain stable MMF during fracture fixation.

MINNE TIES AGILE MMF INNOVATIVE TECHNOLOGY



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A NEW STANDARD IN PATIENT CARE – AND COST SAVINGS

As an on-call surgeon for facial trauma at KU Medical Center, the largest Level I trauma center in the Kansas City area, Humphrey sees a steady stream of broken jaws from accidents and assaults.

Humphrey says most of the mandible fractures he sees require open reduction with internal fixation using plates and screws. While he used to regularly fixate a jaw with MMF screws, arch bars, wires, or expensive hybrid systems, he now preferentially uses Minne Ties intraoperatively to maintain MMF while the necessary repairs are made.

In a standard case when intra-operative fixation is needed, and elastics aren't indicated, Humphrey uses six of the heaviest gauge (1.0mm) or medium gauge

(0.7mm) Minne Ties, the mix of sizes depending on each individual patient's unique dentition.

“The fact that Minnie Ties are less invasive is one of the most appealing benefits for me,” Humphrey said. “There's no additional screw placement or threading of sharp wires which means less risk of tooth root damage and less time under anesthesia. Plus, they're just as secure as other devices.”

Humphrey also points to the practical cost savings of reduced O.R. time and lower device costs.

“Minne Ties enables the smarter use of time and resources for everyone,” Humphrey said. “With O.R. time costing \$60-\$100 per minute⁴, the hard dollar cost savings alone can be several thousand less. I'm more productive, too, if I can get through complex procedures more quickly.”

Humphrey says patient outcomes have been consistent when using Minne Ties compared with more traditional MMF techniques used on the appropriate patients.

“As a physician, the most important thing to me is the quality of the reduction and a successful long term functional outcome,” Humphrey said. “Minne Ties are easy to use and they help me to provide the best care for my patients. It's that simple.”



MINNE TIES AGILE MMF - WHEN, WHY AND HOW

Patient Selection

- Temporary intraoperative fixation
- Open reduction internal fixation using plates and screws
- Elastics are not needed
- Good patient dentition

Application and Removal

- Six of the heavy gauge (1.0mm) or medium gauge (0.7mm)
- Typically applied at the beginning of the case
- Application time: approx. 10 minutes
- Removal with suture scissors at the end of the case

Key Benefits

- Fixation as secure as arch bars
- Non-invasive – no additional drilling or sharp wires
- Less risk of tooth root damage
- Reduced application time: 10 minutes vs. 50 minutes for arch bars and wires
- Less time for patient under general anesthesia
- Reduced O.R. time
- Increased surgeon productivity

¹ Avery, C., Taylor, J., & Johnson, P. (1999). Double gloving and a system for identifying glove perforations in maxillofacial trauma surgery. *British Journal of Oral and Maxillofacial Surgery*, 37(4), 316-319.

² Carlton, J. E., Dodson, T. B., Cleveland, J. L., & Lockwood, S. A. (1997). Percutaneous injuries during oral and maxillofacial surgery procedures. *Journal of Oral and Maxillofacial Surgery*, 55(6), 553-556.

³ 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.

⁴ Shippert, R.D., (2005). A Study of Time-Dependent Operating Room Fees and How to save \$100 000 by Using Time-Saving Products. *American Journal of Cosmetic Surg* 2005;22[1]:25-34.

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