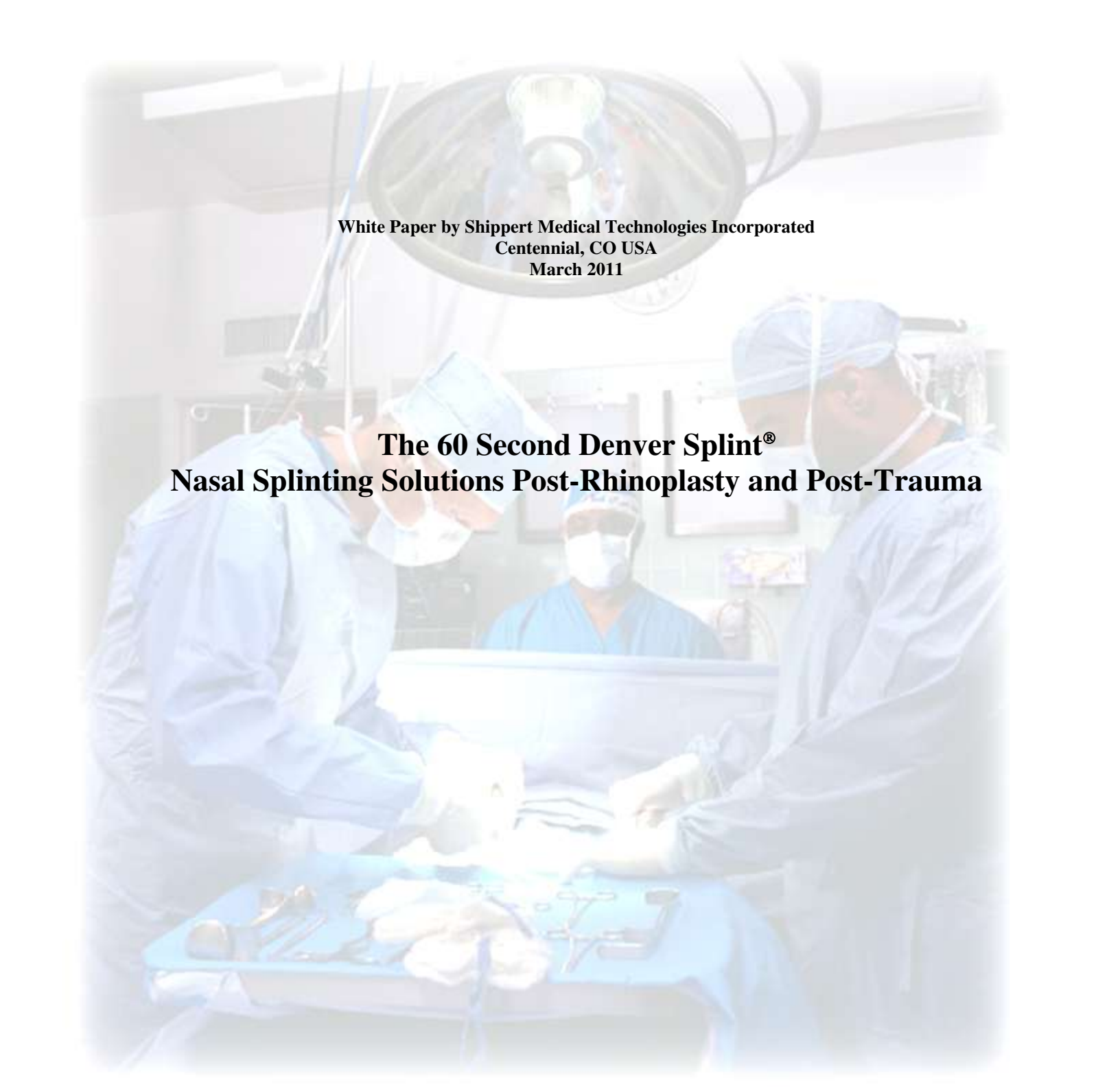




White Paper by Shippert Medical Technologies Incorporated
Centennial, CO USA
March 2011

The 60 Second Denver Splint® Nasal Splinting Solutions Post-Rhinoplasty and Post-Trauma

Shippert
+ Medical Technologies Incorporated

The 60 Second Denver Splint®

Nasal Splinting Solutions Post-Rhinoplasty and Post-Trauma

Shippert Medical Technologies Incorporated ~ March 2011

ABSTRACT:

The intent of this paper is to detail the history of nasal splinting and to outline the changes and advances in splinting materials. Complications from improper splinting are reviewed, as well as guidelines for an ideal nasal splint. An ideal nasal splint will provide the best coverage and protection of nasal bones while addressing physician application, and patient comfort and appearance. The culmination of this information resulted in the Denver Splint® over 30 years ago and the Denver Splint® has become an industry standard for quality nasal splinting.

INTRODUCTION

Historically, trauma and rhinoplasty necessitated the surgical reduction of nasal fractures. Protection of the delicate nasal bones and the surgeon's work necessitated some form of nasal splinting post-treatment. Thus, nasal splinting has evolved and has become an integral connection between good care and good results.

A quality nasal splint protects the nose from additional trauma and retains the bones in position. A firm and secure splint results in significant reduction of edema. Edema is recognized as the primary cause of both patient pain and poor surgical results, therefore it is critical that edema be avoided. There are several common complications of edema, which can occur when the nose is not splinted properly:

- Displacement of bony or cartilaginous segments cause deformity and airway blockage
- Subperiosteal hematoma, subsequent organization and connective tissue pad formation produces an irregular surface
- Polybeak deformity from scar tissue pad in supratip area
- Infection as a result of protein pooling
- Scar tissue contracture deformities
- Pain from tissue stretching

Keeping in mind the possible complications that can occur with improper splinting and edema, parameters have been established that define the ideal nasal splint.

1. Steady, even compression to stabilize bones
2. Manually malleable, yet resistant to swelling
3. Adhesive
4. Quick, easy and no mess to apply
5. Unstainable
6. Permeable to allow air circulation and skin to stay dry
7. Hard surface to resist minor impact
8. Inconspicuous
9. Waterproof
10. Smooth edges to prevent catching on clothing

Over the years, splinting has evolved to meet the ten qualities just listed. As shown below, some of the first methods were a bulky metal splint called the *Joseph Nasal Brace*, and a messy and obtrusive plaster cast. Some improvements were made with the Thermoplast splint, which requires hot water and molds similar to plaster, and finally the Denver Splint[®], which meets all ten parameters of an ideal nasal splint. The Denver Splint[®] offers the best protection, while being the simplest to apply and being the most inconspicuous.

Metal Splint



Plaster Cast



Thermoplast



Denver Splint[®]



DENVER SPLINTS

The Denver Splint[®] Series were developed by an ENT surgeon looking for the best in patient comfort and surgical results. Denver Splints[®] are made of moldable, yet firm aluminum that retains bones in position, provides stabilization of the nose, and reduces edema after nasal surgery or trauma. Features include:

- The Velcro or foam layers allow air ventilation and give cushioned pressure on subcutaneous tissue.
- The optional Dorsal pad reduces dead space and skin wrinkling, and reduces the possibility of polybeak.
- For patient convenience, Denver Splints[®] are waterproof, non-stainable, and inconspicuous.

Physician time and convenience was also addressed during the Denver Splint® development. The Denver Splint® can be applied in a minute or less. It is adhesive with no water or plaster mess. It is available in four sizes (pediatric to adult) with no cutting/shaping time. It is packaged in Kit form with no scrambling for extra components. Everything the surgeon needs to apply the splint in 60 seconds is at their fingertips in one package.

Denver Splint® Kits include:

- Alcohol Wipe
- Skin Prep
- Pre-Cut Adhesive Paper Tape
- Dorsal Pad (depending on model- either attached or separate in package)
- Denver Splint®



Denver Splints® are available in six different models, named by series number. The following charts distinguish the features of each series. It is purely physician preference on which model is used.

Two Piece Models	Moldable Aluminum	Adhesive	Sterile	Material	Approximate Length of Wear	Additional Features	Kit
Series 1500	X	X		Velcro	7-10 days		X
Series 5000	X	X		Velcro	7-10 days	Dorsal Pad Attached	X
Series 1800	X	X		Velfoam	7-10 days		X

One Piece Models	Moldable Aluminum	Adhesive	Sterile	Material	Approximate Length of Wear	Additional Features	Kit
Series 2000	X	X		1/8" Foam	5-7 days		X
Series 5500	X	X		1/8" Foam	5-7 days	Dorsal Pad Attached	X
Series 2200	X	X	X	Duoderm	3-4 days	Abraded Surfaces	

SUMMARY

Nasal splinting post-trauma and post-rhinoplasty is necessary to best protect surgical results, manage edema, and reduce patient pain. Over the years, design features of the ideal nasal splint were identified and splinting evolved. The Denver Splint® was created to meet physician and patient needs, and has become the preferred nasal splinting method. The simple application, combined with the convenience of sizes and Kit packaging, save the physician time and money in the operating room, while the design and features offer superior protection and patient comfort.

The Denver Splint® was invented and has been manufactured in Colorado since 1978. Detailed ordering information and additional instructions may be found online at www.shippertmedical.com or by calling 1-800-888-8663.