A Cost-Effective External Splint Device For Nasal Fractures And Rhinoplasty: A Technical Note

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Abstract

Following manipulation of nasal bone fractures or osteotomies, some form of external nasal splinting is often needed. Although various types of splints include plaster of Paris, thermoplastic splints and padded metal splints are available in the market, they are cumbersome or costly. In this paper, we describe a simple, inexpensive but an effective method of splinting with a detailed step-by-step explanation of their use. We believe that this technique can be adapted for widespread use, but has a major application in developing countries where its cost-effectiveness combined with its effectiveness makes it an ideal method for nasal splinting.

INTRODUCTION

Following the reduction of nasal bone fractures, an external dressing is often used to provide stability to the bony nasal framework[1]. The external dressing keeps the nasal bridge in alignment for one to two weeks, while the fractured bones set in place. Common splinting methods include the use of Plaster of Paris (POP), thermoplastic splints[2],self-adhesive padded aluminium splints[3] and many other designs[4];[5]. All these methods have their proponents but may have one or more disadvantages in the way of being cumbersome, time-consuming, bulky, conspicuous and expensive.

We describe a splinting method for nasal fractures and rhinoplasty which is simple to use, inexpensive, well accepted and tolerated by patients. This method uses readily available materials which are easy to trim and tailor to individual patients' requirements.

MATERIALS AND METHODS

Pre-cut trapezoid shaped metal sheet splints and paper self-adhesive dressing tape (Micropore®) are required (fig1). The metal sheet for the splints is obtained from the packaging of a standard biscuit tin that measures 0.3 to 0.5mm in thickness. Using a template, the tin is pre-cut into trapezoid shapes in three sizes (S-M-L), using heavy dressing scissors, rounding corners and trimming sharp edges. The measurement for making templates is shown in figure 2.

Up to 15 to 20 splints can be cut out from a 20x30 cm sheet.

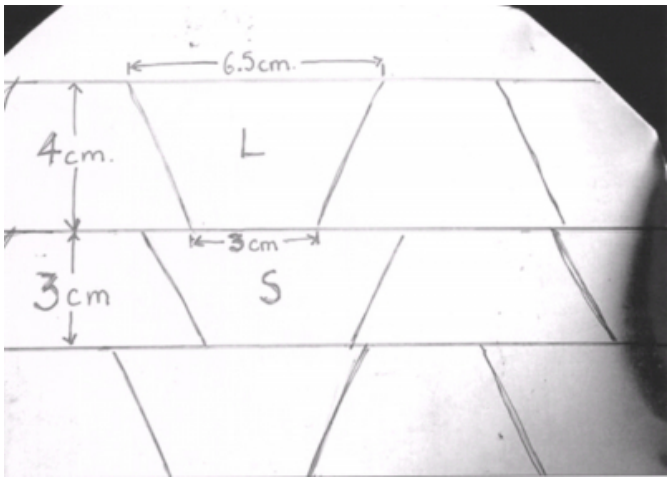
After reduction of the fracture or rhinoplasty with osteotomies, the skin over the nose is prepared with a thin layer of Friar's Balsam. This is left to dry for approximately one minute and a double layer of dressing tape is applied.

Figure 1

Figure 1: Sizes of nasal splints

Figure 2

Figure 2: Template and measurements



A metal splint is measured over the nose and trimmed to the required size. Gentle pressure is applied over the splint to fold it around the nasal bridge holding the bony framework aligned. The splint is fixed in place with a further double layer of dressing tape (fig 3). The dressing is left in place for seven to ten days; afterwards the splint can be removed and discarded.

Figure 3

Figure 3: The splint secured in place

During two year period (2002-2004), we have applied the custom made splint on total of 50 patients. The splints have been used on 28 patients after septorhinoplasty and on 22 patients after manipulation of fractured nasal bones. We reviewed all the patients at seven to ten day periods for removal of the splint. None had splint related complications and there were no complaints from the patients regarding the custom made splint.

DISCUSSION

Nasal splinting after reduction of nasal fracture or rhinoplasty osteotomies is often required. External dressing with POP is commonly used; it is inexpensive, readily available and easy to use. However, it is a cumbersome bulky dressing, and requires time before rigidity is obtained. Dry debris from the plaster can irritate the eyes.

Metal splinting cut from biscuit tin packaging has been used after reduction of nasal fractures and rhinoplasty for many years by one of the authors. The materials required are inexpensive and readily available. The metal alloy used in this packaging is firm to provide stability and malleable for trimming and folding closely around the nasal bridge. The double layer of paper dressing provides a good insulation and protection of the skin from abrasions and cuts by the metal itself. No complications directly related to the use of this dressing and splint has been noticed. The final result is a firm yet thin and fairly inconspicuous dressing, well tolerated by the patients that can be camouflaged further by using tan coloured rather than white dressing tape.

We consider this method of nasal external dressing inexpensive and easy to master.

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References

1. Rohrich RJ,.Adams WP, Jr. Nasal fracture management: minimizing secondary nasal deformities. Plast.Reconstr.Surg. 2000;106:266-73.
2. Drezner DA. Thermoplastic splint for use after nasal fracture. Otolaryngol.Head Neck Surg. 1994;111:146-7.
3. Ahn MS, Maas CS, Monhian N. A novel, conformable, rapidly setting nasal splint material: results of a prospective study. Arch.Facial.Plast.Surg. 2003;5:189-92.
4. Wurtele P. Fixing external nasal splint with Tegaderm i.v. dressing. J.Otolaryngol. 1990;19:79.
5. Matti BA,.Nicolle FV. Use of Orthoplast as nasal splint. Br.J.Plast.Surg. 1986;39:414-6.

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