Prevention of Introduction of Foreign Objects into the Sarns Series 5000 Arterial Pumphead

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Abstract

This paper describes a very simple, inexpensive, easily manufactured and quickly installed device which prevents inadvertent introduction of foreign objects into the Sarns series 5000 roller pump raceway.

Introduction

After a near catastrophe some years ago involving a loose syringe during blood gas sampling while on cardiopulmonary bypass, we, at Mississippi Baptist Medical Center, arrived at a solution to the possible introduction of foreign objects into the Sarns series 5000 roller pump heads. The proposed modification is for the Sarns 5000's which have tubing inserts attached by threaded screws to tubing clamp arms. (Figure 1.)

Materials and Methods

A simple shield was fabricated from sheet aluminum and attached to the outside of the right and left tubing clamp arms with shortened 4/40 inch screws in the pre-existing threaded holes. (Figure 2.) This prevents objects from entering between the tubing clamp arms and the pumphead raceway with resultant possible obstruction of roller rotation and/or arterial line damage. Our device was manu...

FIGURE 1. Sarns 5000 roller head showing obvious avenue for inadvertent entry of foreign objects.

FIGURE 2. Shield and shortened 4/40 attachment screws.

FIGURE 3. Sarns series 5000 pumphead with shield in place, covering opening.
factured at a local sheet metal shop in minutes at nominal cost.

**Results**

This modification has been used for more than eight years on over 3000 pump runs, at two different institutions, with total success and at no inconvenience. The shield moves with the tubing clamp assemblies as they open and close and has not hindered insertion, removal, manipulation or inspection of the tubing in our experience. (see Figure 3.) Incidentally noted was easier clean-up of the pumps with less blood and dust accumulation within the roller heads.

**Conclusion**

This shield has worked extremely well for us and has been found to prevent foreign objects from entering the rollerhead mechanism, and averting any serious complications.