

A Better Cervical Collar: Old Myths and New Realities

Cervical immobilization has long been considered an essential first step in addressing trauma patients. For forty years, there has been controversy over risk/benefits of a semi-rigid collar. Some studies have even suggested that collars can be omitted as long as patients are immobilized until arrival at an ER or trauma center.

Because radiologists have the final say in diagnosing normal vs fracture of cervical spine, we were asked to undertake a study to find the best solution for cervical immobilization. To address this controversy, we used state of the art radiology techniques in assessing jugular venous return and spinal curvature with and without various collars.

A new vacuum cervical splint has become available that we are now comparing to semi-rigid collars. This SIPQuik™ “Stabilize In Place” vacuum cervical splint (Care2 Innovations of Newport Beach, CA) has multiple advantages in our initial evaluation. It can be placed by a single EMT. One size fits all, including pediatric patients. This permits rapid application, without the time delay of fitting. We have initiated a study comparing the SIPQuik vacuum cervical splint to a standard semi-rigid collar. The comparison collar was the Ambu® Perfit ACE (Ambu Inc, Columbia, MD.), simply because of local preference.

The first parameter studied was a comparison of jugular venous Doppler flow and diameter of internal jugular with no collar, semi-rigid collar and the SIPQuik (vacuum cervical splint). This is felt to be a surrogate of unintentional effect on intracranial pressure. The second parameter studied was any possible distraction of the cervical spine. Unintended straightening of the cervical spine has the potential of displacing an unsuspected cervical fracture. For this parameter, a lateral radiograph was obtained with and without the collar in place.

Preliminary results show that the SIPQuik vacuum cervical splint does not increase jugular venous distension (a surrogate for possible block of venous return) compared to the semi-rigid collar. Measurements of normal cervical lordosis remained unchanged with the SIPQuik cervical splint, but undesirable straightening of the cervical spine (as a measure of distraction) was seen with the semi-rigid collar.

Our clinical colleagues agree that the SIPQuik vacuum cervical splint is a “one size fits all” solution for rapid application in trauma patients. This could end the endless debate of collar, no collar, soft collar, or rigid collar. More thorough testing and confirmation by other groups with all available semi-rigid collars is underway. A future peer reviewed paper will contain all of the methodology used in our study.

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