

Care of Cervical Orthosis Devices and Collar Care

Neurosurgery Education
and Outreach Network



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Disclosure Statement

- The Neurosurgery Education and Outreach Network (NEON) and Critical Care Services Ontario (CCSO) have no financial interest or affiliation concerning material discussed in this presentation.
- This presentation provides direction for cervical collar use for patients to ensure consistency within and across organizations. It was developed by a sub-group of clinical neurosurgical nurses and neurosurgical educators for Registered Nurses (RN) across Ontario. This presentation is not meant to be exhaustive and its contents are recommended but not mandated for use. RNs should use their clinical judgment and utilize other assessment parameters if determined necessary.



Learning Objectives

- The learner will be able to:
 - Identify indications for cervical collar use
 - Describe the different types of cervical collars
 - Summarize complications of cervical collars
 - Explain principles for cervical collar use and maintenance
 - List patient and family/partner in care education
 - Recall the considerations when caring for a patient with a cervical collar



Definition

- A cervical collar is an orthosis that fits the neck, anywhere from the jaw to the chest. It is used to restrict movement and support the neck to allow healing when treating a cervical injury, fracture, or surgical procedure.



Aspen Vista Collar picture
retrieved from
http://www.kneedabraces.com/back-neck-braces-cervical-collars-c-25_69.html



Miami J Collar picture retrieved from
<http://www.sourceortho.net/ossur-miami-j-cervical-collar/>



Philadelphia Collar picture
retrieved from
<http://www.alimed.com/philadelphia-collar-and-stabilizer.html>

Indications

- Non-acute injuries:
 - e.g., strained cervical injuries
- Chronic conditions:
 - e.g., arthritis or cervical metastasis
- Prevention of cervical spine fracture or spinal cord injury after an acute injury



Purpose

- Keep the neck centrally aligned with the chin slightly elevated
- Immobilize the c-spine to limit motion.
 - Restricts neck flexion, extension, and lateral tilt (bending & rotation);
 - However, *does NOT* restrict axial loading
- Provides support to stabilize injured area prevent further injury
- Decreases muscle spasms
- Reduces or controls pain – e.g., controls pain for degenerative disease that affects neck strength; after a spinal injury; or post-op surgery

Picture retrieved from www.dme-direct.com



Cervical Collar Types

- Cervical collars can be soft or rigid
- Soft cervical collars are made from thick foam rubber covered in cotton
- The soft support helps in the treatment of minor neck strains and is used to support the neck and control pain after an injury (e.g., whiplash)



Picture retrieved from
<http://www.spineuniverse.com/treatments/bracing/neck-braces-type-spinal-brace>

Rigid Cervical Collars

- Rigid cervical collars are made from molded plastic with a removable padded liner in two pieces (a front and back piece) and fastened with Velcro. When applied and secured snug, the collar creates a rigid orthosis to support the head and neck.



Picture retrieved from <http://www.dme-direct.com/aspen-vista-collar-cervical>

Common Rigid Collars

- The Aspen® collar
- The Philadelphia® collar
- The Miami J® collar



Miami- J Collar



Aspen Collar



Philadelphia Collar

Pictures retrieved from <http://morphopedics.wikidot.com/broken-neck>

Complications

- Skin Damage.
 - At risk for pressure ulcers
 - Specific areas of concern are the occiput, chin and mandible, ears, shoulders, laryngeal prominence, sternum, and macerated neck skin
- Swallowing, coughing, breathing, and vomiting limitations, potentially causing aspiration
- Additional injuries to the spinal cord occurring during hospitalization that may be caused by ineffective cervical immobilization
- Marginal mandibular nerve palsy (cranial nerve VII) with long-term sensory compromise

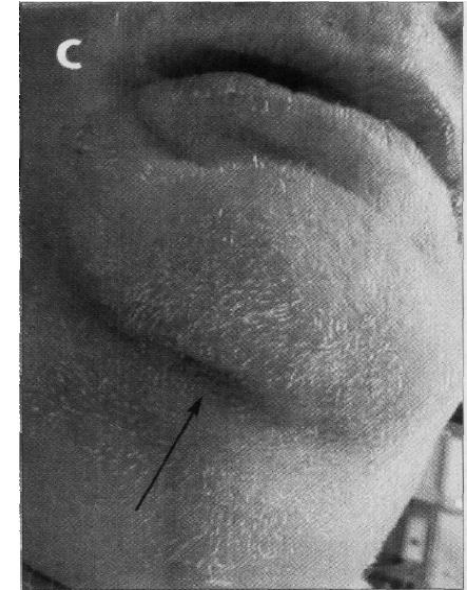
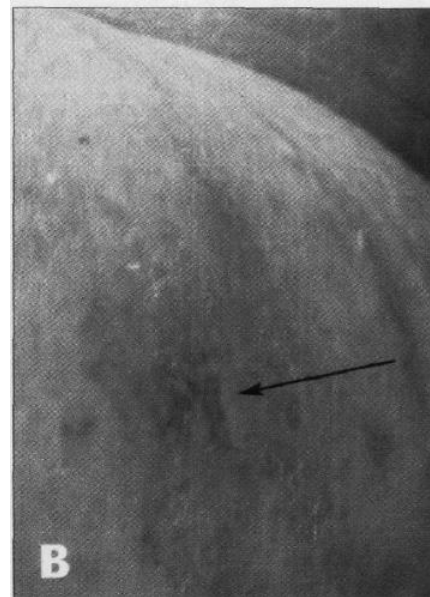
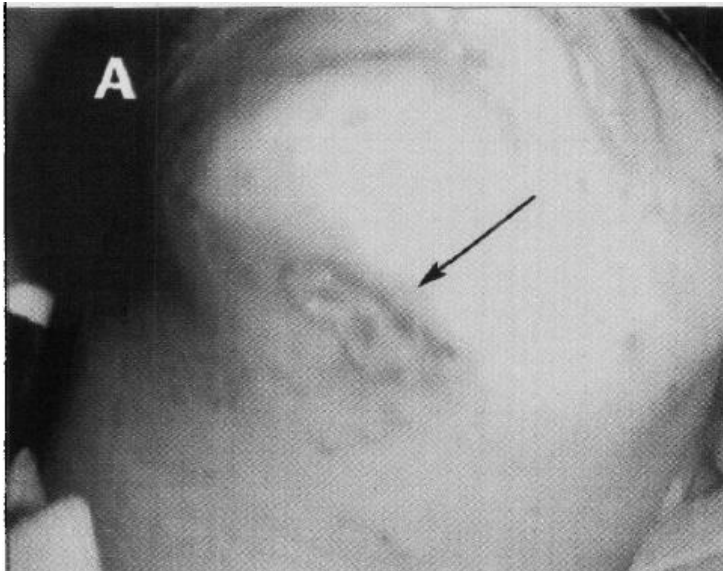


Complications

- A potential increase in intracranial pressure
- A possible delayed extubation or difficulty weaning from the ventilator
- Potential exposure to transmission of blood-borne diseases
- General immobility that can lead to sacral pressure points, heel and elbow breakdown, risks of deep vein thrombosis (DVT), pneumonia, ileus, etc.



Examples of Complications

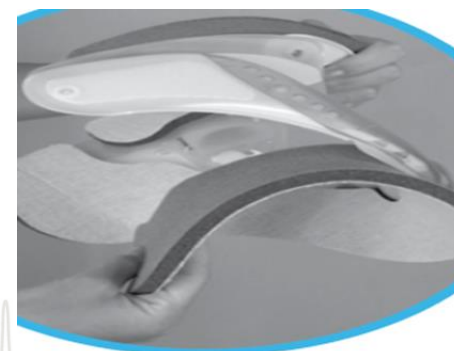


- A. Chin pressure ulcer
- B. Shoulder pressure ulcer
- C. Chin pressure area
- D. Cervical collar induced healing chin pressure ulcer

Picture retrieved from Webber-Jones, JE, et.al. The Management and Prevention of Rigid Cervical Collar Complications. Orthopaedic Nursing, (4), 21, 19-26.

Principles for Cervical Collar Use and Maintenance

- Must be worn moderately snug to limit motion
- Must be worn according to specifics based on type of collar used
- May be washed and/or liners may be changed



Photos retrieved from booklet: Opcare – Patient Information: The Aspen Vista Cervical Collar (website retrieval – opcare.co.uk/patient-information)

Principles for Cervical Collar Use and Maintenance

- Must be kept clean and dry to protect skin integrity - wash with a mild soap and damp cloth every day, and padded liners are left to air dry
- Duration of time wearing the collar and amount of time during the day wearing the collar, are always patient specific, and will be determined by the physician



Photo retrieved from booklet:
Opicare – Patient Information:
The Aspen Vista Cervical
Collar (website retrieval –
opcare.co.uk/patient-information)



Retrieved from Lippincott
Procedures – Cervical
collar application policy
and procedure – revised
January 08, 2016

Principles for Cervical Collar Use and Maintenance

- After surgery, patients wear the collar all the time, even during sleep or unless otherwise instructed by the physician, and until the spine has healed or fused. This duration of time may be as short as 4 weeks or as long as 4 to 6 months.



Photo retrieved from <https://www.healthtap.com/topics/cervical-spine>

Patient and Family/Partner In Care Education

- Must follow physician's specific instructions for when and how to wear the collar, especially when sleeping, showering, and during certain activities
- Should not drive. When riding in a car, they should not ride in the front seat with an air bag



Patient and Family/Partner In Care Education

- Must take care when walking as they will not be able to see their feet
- Must avoid extreme bending and twisting of the spine. When moving from a lying to a standing position, they must use their arm and leg muscles to keep their spine in proper alignment



Picture retrieved from <http://www.aspenmp.com/products/upper-spine/aspen-collar/>

Patient and Family/Partner In Care Education

- Must follow physician's instructions for when they may shower and wash their hair with the collar on (e.g., until incision has healed), and when they can remove the collar to shave
- After showering, patients must lie on a bed and have someone remove the brace, replace the padded liner with a dry one, and reapply the brace. It is important that the patient not move while the brace is off



<https://www.youtube.com/watch?v=jgxv4L9CZbg> – Vista Cervical Collar In-Service Training video



<https://www.amazon.com/Aspen-Vista%C2%AE-Collar-Replacement-984020/dp/B005DZX2I0>

Patient and Family/Partner In Care Education

- Watch for reddened or broken skin under the brace. Skin breakdown can be caused by rubbing, pressure, or moisture. This may indicate that the brace does not fit properly or is not being worn properly and the collar needs to be adjusted to fit and provide comfort and proper wear
- If the collar fits loose, keeps riding up, is painful, or the patient has reddened or broken skin under the brace, the collar must be adjusted

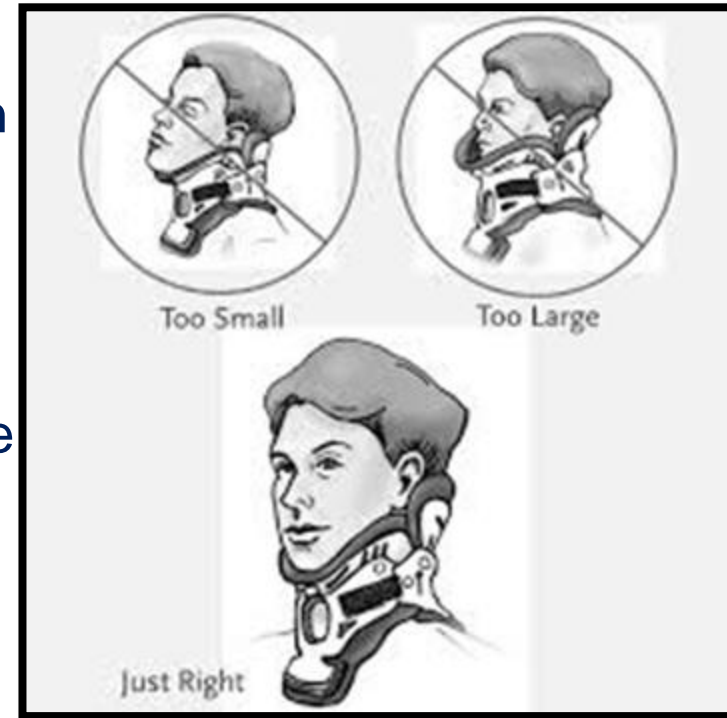


Photo retrieved from <http://www.dme-direct.com/ossur-miami-j-cervical-collar>

Skin Care Considerations

- Unless otherwise instructed by the physician or your organization's policies and procedures, remove the collar with the help of another person and ***wash the patient's face and neck at least once per day!***
- Unless otherwise instructed by the physician or your organization's policies and procedures, the patient can shower or bathe with the collar on. After the wash, take the collar off, wash the neck, dry the area, clean the collar, and change the pads



Skin Care Considerations

- Always assess skin integrity, especially over bony prominences, for signs of redness and irritation.
 - **Inspect patient's skin under and around the cervical collar at least twice a day!**
 - Conduct more frequent skin assessments in patients vulnerable to fluid shifts or who are exhibiting signs of localized or generalized edema.



Dressing Considerations

- Use a hospital gown while in hospital
- If a patient would like to wear regular clothes, preferably use shirts/hoodies/ sweaters that are zippered or button-up instead of pullovers
- If wearing a pullover top, be sure the neck opening is large enough so it can easily slip over the head without moving the neck
- Make sure when you fit the collar, that there is not any thick clothing/linen between the collar and skin. The collar should be flush against the skin as much as possible to ensure proper fit



Safety Considerations

- Remind the patient to inform you (if able) and/or physician if he/she experiences any sudden neck or back pain, and/or numbness or tingling
- Encourage ambulation as tolerated. Supervise the patient when ambulating if necessary. Make sure patient wears non-skid shoes and ambulates in non-cluttered areas
- If patient is sitting, ensure he/she is using a good upright posture. Avoid sitting for prolonged periods of time. Sit in a firm chair; avoid soft low chairs



Safety Considerations

- Ensure the bed used has good firm support; not too soft
- Patient should avoid strenuous activities (e.g., heavy lifting or exercise)
- Instruct patient not to drive or operate equipment while in the collar



Documentation

- Note the type and size of the cervical collar
 - For Aspen® Vistas, note the height setting used since the collar comes in one size
- Note the time and date of application
- Record the results of neurovascular checks, vital signs, neuro & respiratory status, skin integrity, etc.



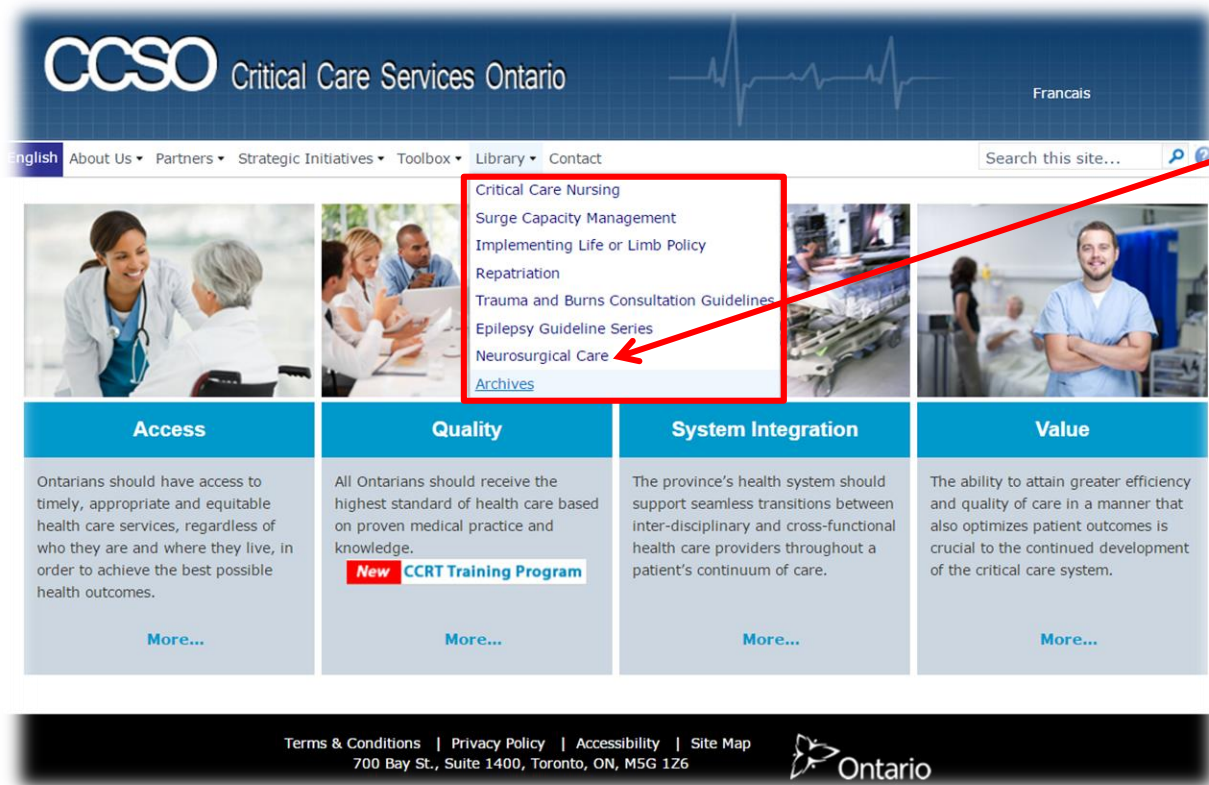
Documentation

- Document patient pain status/comfort, use of any nonpharmacological and pharmacological interventions
- Document collar fit and snugness
- Document method of application/ removal/positioning, etc.
- Document all patient teaching/instructions provided



Web-links

- Critical Care Services Ontario
 - www.criticalcareontario.ca



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Questions and Answers

THANK YOU!



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