Philadelphia Collar – Sizing and Application

Pre-Procedure

General

- Philadelphia collars are an orthotic device that assists in immobilising the cervical vertebra by maintaining the patient’s head in a neutral position, whilst at the same time promoting patient comfort.
- The application and removal of the Philadelphia collar (or other immobilising orthotic device) has the potential to render the cervical spine unstable and as such ought to only be performed by appropriately trained staff as per the guidelines set out below.

Indications

- Full spinal precautions are implemented for patients with a suspected spinal injury until further orders are documented in the progress notes by the appropriate medical staff.
- The initial care of a patient with an actual or potential spinal injury is to stabilise the spine and prevent further neurological injury by maintaining straight alignment of the vertebrae.

Preparation

Staff

Initial Sizing and application of the Philadelphia Collar (+/-) removal of the
transport immobilisation device is to be attended only by:

- Orthopaedic Registrar or Consultant
- Emergency Department Medical and Nursing Staff who have been trained

Subsequent re-sizing of Philadelphia Collar to be attended by:

- Orthopaedic Registrar or Consultant
- Emergency Department Medical and Nursing Staff who have been trained
- A trained Orthotist after requisition for the appropriate equipment has been completed

Changing of a Philadelphia Collar, without changing the size of the collar, to be attended by:

- This would usually be done on the ward
- Appropriately trained Nursing Staff, to ensure hygiene and skin integrity are maintained

Sizing and application of a soft collar to be attended by:

- Appropriately trained Nursing Staff upon the written request of the Orthopaedic Team

Cessation of Cervical Immobilisation therapy to be attended by:

- Nursing staff upon the written request of the Orthopaedic Team

Procedure

Positioning and technique

- The correct sizing of the Philadelphia Collar is important for effective immobilisation and patient comfort
- The head is to be maintained in a neutral alignment
- Refer to the sizing chart for Philadelphia collars and select the collar based on the closest match to the measurements taken

Collar Height Measurement:

- Measure (in inches) from the tip of the patient’s chin to the top of the sternum in a straight line
- If this measurement falls between two sizes, select the smaller size first on the chart

X
Circumference Measurement:

- Measure (in inches) around the child’s neck
- If this measurement falls between two sizes, select the larger size first on the chart

Philadelphia Collar Sizing Chart:

<table>
<thead>
<tr>
<th>Size</th>
<th>Circumference</th>
<th>Height</th>
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<tbody>
<tr>
<td>Infant</td>
<td>6 – 8 inches</td>
<td>2 inches</td>
</tr>
<tr>
<td>Paediatric / Child</td>
<td>8 – 11 inches</td>
<td>2 1/4 inches</td>
</tr>
<tr>
<td>Small</td>
<td>10 – 13 inches</td>
<td>2 1/4 inches, 3 1/4 inches, 4 1/4 inches, 5 1/4 inches</td>
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<tr>
<td>Medium</td>
<td>13 – 16 inches</td>
<td>2 1/4 inches, 3 1/4 inches, 4 1/4 inches, 5 1/4 inches</td>
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<tr>
<td>Large</td>
<td>16 – 19 inches</td>
<td>2 1/4 inches, 3 1/4 inches, 4 1/4 inches, 5 1/4 inches</td>
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<tr>
<td>Extra Large</td>
<td>More than 19 inches</td>
<td>2 1/4 inches, 3 1/4 inches, 4 1/4 inches, 5 1/4 inches</td>
</tr>
</tbody>
</table>
Application of the Philadelphia Collar:

- The Philadelphia Collar is a two piece design consisting of a front and a back piece (packaged as a set, labelled front and back)
- Two people will be required: the first person to provide cervical spine immobilisation and a second person who is competent in fitting and positioning the collar
- When applying the collar, always maintain the child’s head in a neutral position
- The first person will be required to manually stabilise the child’s neck with a head hold:
  - Ensure the patient is lying in a supine position, arms by his side and head in a neutral position
  - Ensure the bed is at the correct height for the person holding the head
  - Hands are placed on lateral portions of the patient’s head, fingers spread around the mandible and back of neck, and thumbs on the patient’s cheek
  - The forearm is used to stabilise the lateral aspect of the head
  - Firm pressure must be applied to restrict possible neck movement
- The second person applies the collar:
  - Before applying the back half of collar, ensure “arrow” is positioned toward the top of the head
  - Gently slide the back of the collar in place under the patient’s neck (press gently on the mattress to create more room to manoeuvre the collar)
  - Always maintain neck stabilisation whilst positioning and securing the front of the collar
  - Ensure central placement with the front half of the collar overlapping the back half and mark the position of the Velcro straps for future applications
Post-Procedure

Confirm success

- Following placement of the semi-rigid collar, ensure the patient’s neck is in correct alignment

Aftercare

Removing a Cervical Collar (for checking of pressure or fitting/changing of collar)

- Requires two people
- The first person holds the patient’s head and maintains neck stabilisation to allow the front half of the collar to be removed while the patient is supine
- The second person gently slides the back half of the collar out from under the patient’s neck (press gently on the mattress to create more room to manoeuvre the collar
- The first person must always maintain neck stabilisation whilst the new collar is applied

More

Tags
cervical, cervical spine trauma, collar, head injury, log roll, philadelphia collar, spinal, spinal injury, spinal precautions, spine, trauma

References

• Ward 6A Surgical Manual Handling – Full Spinal Precautions (web page on the PMH Intranet) 2006 (cited 2006 April 7)
• University of North Carolina Hospital Nursing Procedure manual – Spinal Precautions (Web page) 2001 (cited 2006 April 7)
• Ossur Philadelphia Collars Sizing and Application Info (web page) (cited 2006 April 7)
• Trauma Service Guidelines, The Royal Melbourne Hospital Version 3.0, Revised May 2011

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<table>
<thead>
<tr>
<th>Reviewer / Team:</th>
<th>Kids Health WA Guidelines Team</th>
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<td>Medical Advisory Committee</td>
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