The Hierarchy of Evidence

The Hierarchy of evidence is based on summaries from the National Health and Medical Research Council (2009), the Oxford Centre for Evidence-based Medicine Levels of Evidence (2011) and Melynyk and Fineout-Overholt (2011).

I Evidence obtained from a systematic review of all relevant randomised control trials.

II Evidence obtained from at least one well designed randomised control trial.

III Evidence obtained from well-designed controlled trials without randomisation.

IV Evidence obtained from well designed cohort studies, case control studies, interrupted time series with a control group, historically controlled studies, interrupted time series without a control group or with case-series

V Evidence obtained from systematic reviews of descriptive and qualitative studies

VI Evidence obtained from single descriptive and qualitative studies

VII Expert opinion from clinicians, authorities and/or reports of expert committees or based on physiology


<table>
<thead>
<tr>
<th>Reference (include title, author, journal title, year of publication, volume and issue, pages)</th>
<th>Evidence level (I-VII)</th>
<th>Key findings, outcomes or recommendations</th>
</tr>
</thead>
</table>
Frequency of cleaning varies from 4 times per day to weekly  
Care should be cost effective, minimise skin irritation, be effective in preventing infection  
Each hospital should work within agreed governance. |
No study compared dressing versus no dressing  
Fewer infections with 1% silver sulphadiazine / 5% chlorhex compared with 5% chlorhexidine  
Daily versus weekly made no difference  
Pin care should be done daily in first 48 - 72 hours, then weekly  
Dressing type & frequency can change according to clinical condition  
Recommends multi centre studies to compare outcomes and products in use |
Consensus approach provides guidance in absence of strong evidence  
Discusses different cleaning solutions as per others eg saline, chlorhexidine, povidine iodine (not recommended) - suggest chlorhexidine  
Dress with a non-shedding material  
No chlorhex if allergy, eczema, psoriasis - use saline instead  
Frequency recommended at 7 day intervals  
Change dressing earlier if concerned  
Dressings should start 48 - 72 hours post op  
Should have compression applied to reduce risk of haematoma and then tenting, excessive movement of skin around site  
Showering - agreement that can be done on day of dressings, but keep fixator dry on other days  
Crusts - leave intact unless infection present, then to be removed  
Highlights need for further research into the area of pin site care  
Highlights development of validated tools to assist in diagnosis and audit of infection |
<table>
<thead>
<tr>
<th>Reference</th>
<th>Level</th>
<th>Notes</th>
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<tbody>
<tr>
<td></td>
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<td>In absence of skin sensitivity then pin sites should be cleaned weekly using alc chlorhexidine and non shedding dressing (gauze)</td>
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<td>Cover with wound dressing that keeps exudate away from the wound</td>
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<td>Use of compression with a bung, stopper or clip</td>
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<td>Change if becomes saturated</td>
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<td>On day of dressing change - pt may bathe or swim (not immerse)</td>
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<td>Pt to be key member in diagnosis of pinsite infection</td>
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<td>Lack of high quality randomised controlled trials to demonstrate best</td>
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<td>Need for large multi centre trials</td>
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<td>No validated outcome measure for pin site infection</td>
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<td>Frank discharge of pus, increasing pain at the pin / wire site and decreased movement or weight bearing with increasing redness and increased swelling and discharge are indicators of infection</td>
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<td>Further work needed in area of dressings to be used</td>
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<td>Clarification of role of crusts / scabs</td>
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<td>No real consensus as to when to begin dressings</td>
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Discussed cleansing with many different solutions  
Reduction in infection rate with Alcoholic chlorhexidaine and reduced pain  
Mentions reaction to chlorhexidine  
Discusses the role of crusts and debate as to whether to remove or not  
Use of compression advocated to prevent tenting  
If dressing uses, then should be a non shedding material eg sponge type dressing, non shedding gauze, soaked in alcoholic chlorhexidine due to its antimicrobial properties |