The first UK experience with Posthorax® vest - Prophylactic use results in reduced sternal wound complications following sternotomy.

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Deep Sternal Wound Complication DSWC

- Sternal instability
- Drainage
- ± Fever / Septic Shock
Increased mortality and morbidity

Depression
Poor quality of life
Long term illness

DSWC Implications

>400% length of stay
Longer occupancy of beds and repeated use of theatres
Loss of new admissions

Abx, Vac Pump
HDU/ITU-RRT

DSWC

Pre operative
- Hygiene
- MRSA screen
- Hair removal
- Antibiotics
- Skin preparation

Operative
- Type/Length of Operation
- Laminar air flow
- OR traffic
- Sterilisation
- Closure technique
- TDC/Electrocautery

Post operative
- Ward cleanliness
- Dressings care
- Glycaemic control
- Blood transfusion
- Personal Hygiene
- Sternum Stability¹²

Prevention

POSTHORAX®

- The Posthorax Vest is a post-operative jacket for patients who have undergone heart surgery via sternotomy
- Provides support for the chest without restricting breathing

Function of Posthorax®

- Anteroposterior stabilization of the sternum (2 front cushions)
- Different sizes
- Ergonomical fit for males and females
- Lateral straps for optimum fit and stop mechanism which allows normal breathing but stops hyperextension of the thorax
- Individual sizing at the shoulder straps to prevent vertical malposition
Function of Posthorax®

- Anteroposterior stabilization of the sternum (2 front cushions)
- Different sizes
- Ergonomical fit for males and females
- Lateral straps for optimum fit and stop mechanism which allows normal breathing but stops over expansion of the thorax
- Individual sizing at the shoulder straps to prevent vertical malposition
Selection process/ Data collection

- Pre operative decision (clinic or in hospital)
- Documentation in the notes (suitability, reason, size)
- Application by trained staff
- Ideally, application immediately after extubation
- Recommended use for up to 6 weeks
- 1<sup>st</sup> year Prospective collection
- 2<sup>nd</sup> year Retrospective collection

Indications (prophylactic use)

- High BMI (>30)
- Diabetes
- Steroids
- Reduced Lung Function
- Re operation
- Severe osteoporosis (Intraoperative finding)
Indications (therapeutic use)

- Clicky sternum
- Severe Cough/ chest infection
- Superficial infection
- Delirium/agitation
- DSWC (on Vac Pump or post rewiring)

Postthorax vs Non Postthorax

![Graph showing comparison between Postthorax and Non Postthorax with values 2492 and 240]
**Risk Factors**

<table>
<thead>
<tr>
<th></th>
<th>Non Posthorax group</th>
<th>Posthorax group</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>69.3±11.7</td>
<td>69.2±11.4</td>
<td>p=ns</td>
</tr>
<tr>
<td>BMI</td>
<td>27.8±4.9</td>
<td>31.3±5.9</td>
<td>p&lt;0.001</td>
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<tr>
<td>COPD</td>
<td>12%</td>
<td>17.3%</td>
<td>p=0.03</td>
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<tr>
<td>Diabetes</td>
<td>19.4%</td>
<td>25.6%</td>
<td>p=0.05</td>
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<td>Previous operation</td>
<td>11.5%</td>
<td>16.3%</td>
<td>p=0.07</td>
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<tr>
<td>Logistic EuroSCORE</td>
<td>8.6%</td>
<td>8.1%</td>
<td>p=ns</td>
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<tr>
<td>X clamp time</td>
<td>68.4±32.2</td>
<td>67.7±32.9</td>
<td>p=ns</td>
</tr>
<tr>
<td>CPB time</td>
<td>105.1±46.3</td>
<td>101.2±42</td>
<td>p=ns</td>
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<tr>
<td>Urgency</td>
<td>38.8%</td>
<td>32.2%</td>
<td>p=ns</td>
</tr>
</tbody>
</table>
Time spent wearing jacket

Hospital

Follow up

Patients pain with jacket fitted

Hospital

Follow up
Conclusion

- Reduction of infection incidence
- Contributes to faster recovery
- Reassurance for the patient
- Cost effective