NHS England

Patient Safety Alert

Stage One: Warning

Risk of using vacuum and suction drains when not clinically indicated

6 June 2014

Alert reference number:	NHS/PSA/W/2014/009
Alert stage:	One - Warning

A serious incident has been reported to the NRLS in which a vacuum drain, in this case a Redivac™ drain, was placed after spinal surgery with the intention that no suction be applied. However, staff were not made aware of the planned management of the drain and, acting in accordance with what would normally be required if the vacuum effect in a Redivac™ bottle had decreased, changed the bottle to one that was vacuumed. The drain rapidly filled with blood-stained fluid, and the patient deteriorated and later died. It is likely that the fluid drained was cerebrospinal fluid (CSF).

Two further almost identical incidents had been reported to the NRLS previously; these cases also relate to patients with a CSF leak following spinal surgery but they resulted in no harm to the patient.
An incident report reads:

> *'This patient had a revision spinal decompression. An accidental dural tear occurred and thus a drain was placed to provide a conduit for CSF to allow the wound to heal. This was a de vacuumed Redivac drain which in the post op notes was written not to be vacuumed and I personally spoke to the HDU nurse on Friday pm to confirm this and explain why this was to happen . The drain was vacuumed over the weekend and a significant amount of CSF was drained...'*

Using a proprietary vacuum drain when vacuum drainage is strongly contraindicated clearly creates the possibility of significant patient risk through inadvertent human error, as described above. The Trust in which the trigger incident occurred is currently investigating alternative drains to which vacuumed bottles cannot be attached, and the labelling of drains to specify that they are not to be vacuumed.

Although these three incidents related to neurosurgery, this alert is being disseminated more widely, as the practice may have relevance to other surgical specialties.

Actions

Who: All acute hospitals where surgery is performed

When: As soon as possible but no later than 4 July 2014

1. Establish if vacuum or suction drains are being used when a vacuum is not clinically indicated, and if incidents have occurred as a result.
2. Consider if immediate action needs to be taken locally and develop an action plan, if required, to decrease the risk of the occurrence of a similar incident.
3. Disseminate the information from this Alert to all staff involved in placing and managing drains after surgery.
4. Share any learning from local investigations or locally developed good practice resources by emailing: patientsafety.enquiries@nhs.net.

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Technical notes

NRLS search dates and terms
The NRLS was searched on 29th April 2014 for the keywords 'Redivac' and 'spinal', and 23 incidents were identified. In addition to the trigger incident, two further reports were found describing that a vacuum drain was placed with the intention of NO suction being applied. However, in both cases, suction was applied.

Stakeholder engagement
This Patient Safety Alert was developed with advice from the NHS England Surgical Patient Safety Expert Group (see www.england.nhs.uk/patientsafety for membership details) who fully supported the publication of this Alert.

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