

## **Evidence Based Practice Fellowship- B3**

### **Craniotomy Incision Care**

By Joy Ryan RN

The driving force behind this project was a lack of consistency in dressing change practices and lack of clear communication to our patients during their hospitalization and discharge teaching regarding the craniotomy dressing. The projects objectives were to discover if **there was Evidence or established Best Practices in post operative incision care for patients with craniotomies**, primarily to improve patient outcomes and increase patient satisfaction with their care.

Craniotomies are considered to be “clean wounds” with primary intent closure. The National infection rate is between 2-5%. A retrospective chart audit at Stanford showed our rate to be well below that benchmark.

Currently, there is a national emphasis on the reduction of surgical site infections (SSI) which accounts for 40% of all Hospital Acquired Infections (HAI) (1). These are preventable complications which unnecessarily increase the patient’s length of recovery, pain, and risk for further complications and in some cases death (2). The recommendations from the Institute for Healthcare Improvement’s 100,000 Lives Campaign have been included in the guidelines that follow.

The literature was searched regarding various aspects of care: the principles of incision healing, type of post-op dressings that enhance primary closure, the length of time which the primary surgical dressing remains, who should change the initial postoperative dressing, how the primary dressing should be removed and the issues of leaving the incision dry and open to air prior to the staple removal.

The recommendations that follow primarily come from the Center of Disease Control (CDC) guidelines from 1999 and several randomized control trials (RCT).

To complete this fellowship with the required 6 month time frame, I narrowed my focus to the patients of one of our neurosurgeons, the chair of the department, Dr Gary Steinberg and included only his elective craniotomy patients.

The current practice for craniotomy incision care is described in the OR Procedure Utilization cards and showed inconsistencies in the type of dressings used and in one circumstance it mentions to “Ask” the surgeon in regards to the dressing.

Patients often came from the ICU, less than 24 hours from the conclusion of their surgery, with the head dressing already removed. Other times the patients would have their crani dressings removed during morning rounds often prior to the patient being fully awake. Many confused or mentally altered patients would put their hands on their incision lines within the first few days after surgery. This was disconcerting to the staff and families and we wondered if this might lead to surgical site infections. Craniotomy incisions are left open to air after the first post op dressings are removed.

Patients desire to take a shower and wash their hair but the staff have instructed them to “keep their incision dry until the staples are removed” which takes place one week after surgery at their first clinic visit. The discharge teaching tools reflects these instructions.

**To bring the current practices to coincide with the Evidence the following recommendations are being made:**

<b>Key Aspect of Care</b>	<b>Recommendation</b>	<b>Rationale</b>
Type of Primary/Initial post-op Dressing	*Non-adherent over incision - <b>xeroform</b> *Absorbent for exudates- <b>dry gauze dressing</b> *Barrier to bacteria and water lowers infection rate improves patient comfort- <b>Transparent film</b>  <b>Post op dressing would include all three of the above</b>	( Gould 2001) ( Phillips 2001) (Wiklad & Anderson 1995) (Cosker 2005)  ( Cosker 2005) (Holm 1998)  (Sharp 2004) (Wynne 2004) (Watret & White 2001)
Primary Dressing	<b>*Remains on for 48-72 hrs after conclusion of surgery</b>	*Re-epithelization takes place within 48-72 hrs. Dressing provides protection from injury/infection (Gould 2001) (Baxter 2003) *Early removal of dressing increases risk of patient contamination into healing incision.(Griffith-Jones 1991) (Baxter 2003) *CDC recommendation 24-48 hrs. (1999) *Less patient pain/use of analgesia at 72hrs when dressing remained on (Holm 1998)(Briggs 1997)
RN to remove dressing	<b>* Nursing to perform sterile dressing removal within the time designation of 48-72hrs</b>	*CDC (1999) recommends sterile dressing change, wash hands before and after.
Leave incision open to air, kept dry until suture removal	<b>* No change from previous practice</b> <b>* Patients may shower, avoiding direct contact of water on incision. Blot dry</b>	*CDC (1999) addresses this unresolved issue and makes no recommendations

The IHI 100K lives campaign also recommends the following practices be adopted to further reduce the risk for SSI.

**\*Prophylactic use of Antibiotics-**

Appropriate drug selection

Timing of first dose within the first hour prior to surgery

Discontinue use of antibiotics after 24 hours (even if drains or catheters are in place)

**\*Appropriate Hair removal**

Use of clippers in the OR just prior to skin prep

**\*Normothermic**

Postoperatively

**\*Glycemic Control**

Adapting the range of 80-110 mg/dl

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