

BACKGROUND

Burn patients with a high total burn surface area (TBSA) percentage may have limited unburned skin for donor skin to be used as Split Thickness Skin Graft(STSG) to heal deep partial-thickness to full-thickness burn.

Cultured Epidermal Autograft (CEA) is a culture of the patient's unburnt skin, grown in a lab that is created to provide a permanent skin replacement **for patients with greater than 30% TBSA** when insufficient unburnt skin is available to be used for STSG.

Once surgically applied to the patient's burns, CEA's care requires a specific care protocol, specific dressing changes, and a limited choice of dressing supplies and medications that can be safely used without damaging the CEA. When following dressing orders, the dressing covering the CEA is removed and left open to air for up to 12 hours at a time. The CEA must not contact any objects, such as linens, to maintain integrity.

PURPOSE

This **quality improvement (QI) project** aims to identify patient needs for successful CEA results.

- Identify barriers specific to the patient receiving the CEA.
- Ensure that all supplies required are in sufficient supply.
- Identify any specific interventions that will assist in positioning and comfort.

METHODS

Many improvement areas were identified with the first patient who received CEA, including pain control and comfort during the dressing changes and with positioning.

Comfort aids such as pillows, wedges, and abductor pillows were discussed for positioning the patient, so the CEA could maintain open to air for up to 12 hours with nothing touching it.

Nurses discussed areas for improvement and made a **tip sheet** of what helped with patient positioning and comfort. The second patient had similar concerns before applying CEA, including pain control, comfort with positioning, and adequate supplies.

An **interprofessional meeting** with Nurses, Physician, Pharmacy, Physical Therapy, and the patient was conducted three days before the CEA application. The discussion included educating the patient on what to expect post-surgery, including; activity and positioning limitations, pain control, and comfort. Physical Therapy would work with the patient and trial positions to see the most effective and the most comfortable.



Example of a positioning aide made by Physical Therapy to suspend a patient's legs off the bed and maintain the CEA open to air.

RESULTS

Having the interprofessional team meet before applying the CEA was instrumental in the improved patient outcome, allowing the patient to take part in decisions.

Improvements with pain control, comfort, and positioning from first to the second patient were seen.

It was beneficial to do trial positioning before the CEA application to determine the best position with the most comfort.

Physical Therapy made positioning devices to maintain CEA open to air with no contact with any objects.

CONCLUSIONS

Ongoing feedback and evaluation after each CEA application and patient are imperative for success.

An interprofessional meeting before CEA application with Nursing, Physicians, Pharmacy, Respiratory, Occupational and Physical Therapy to discuss concerns, pain control, positioning trials is essential for success.

Make sure adequate supplies are available for dressing changes, and order pre-surgery as required.

Maintain a tip sheet for reference.

REFERENCES

References available upon request