

Obtaining epidermal micro grafts using the CelluTome Skin Harvesting System

ABSTRACT

- Rationale** CelluTome is an epidermal harvesting system marketed by Kinetic Concepts Inc. (KCI) as a novel, relatively painless and quick way of collecting healthy skin grafts for transplant to wound and burn sites. It uses gentle heat and vacuum to disrupt the dermal-epithelial junction thereby raising “microdomes” of epithelial cells that are transferred to the graft site via an adhesive sheet. The proclaimed advantages of this process over traditional methods of harvesting dermal skin grafts include; no need for general or local anaesthetic (safer in elderly/diabetic/complex patients), donor site heals without any scarring, appropriate for use in the outpatient setting and minimal discomfort associated with harvest and donor site healing.
- Objectives** We decided to test the manufacturer’s claims regarding the harvesting process, viability of the harvested cells and donor site healing.
- Methods** A healthy volunteer underwent harvesting of epithelial “microdomes” according to the CelluTome product guideline. The volunteer rated their level of discomfort during the harvesting process. Donor site healing was monitored photographically until completely healed. The epithelial microdomes were examined histologically to determine the viability of the harvested cells.
- Results** Although the micro grafts contained a small number of live epithelial cells, these cells were of high quality and contained a significant proportion of keratinocyte stem cells. There was minimal discomfort and no pain associated with the harvesting procedure and the donor site healed without any scarring or discolouration.
- Conclusions** The CelluTome Skin Harvesting System provides a viable method for harvesting healthy epithelial tissue and is associated with minimal donor site discomfort and morbidity