

Skin Cell Gun

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Abstract—The skin cell gun is some of the newest technology that could change the way people with second degree burns are healed.

I. INTRODUCTION

MY BME 281 presentation is about using the skin

cell gun to help heal people with second degree burns. It was invented by Jörg C. Gerlach and other colleagues at the University of Pittsburgh's McGowan Institute for Regenerative Medicine. The skin cell gun only works on second degree burns, but doctors are hoping to further progress the technology so the skin cell gun can be used on third and possibly fourth degree burns.

II. METHODS

The skin cell gun is basically a sophisticated paint gun. This means that the skin cell gun uses an electronically controlled pneumatic device that doesn't injure the skin cells.



When a patient has second degree burns a biopsy is taken from the patient's undamaged cells. The healthy cells in the biopsy are then isolated and an aqueous solution of the skin cells is sprayed onto the burned area. The new layer of skin is then covered with new dressings that have tubes that run through it end to end. One of the tubes acts as an artery, while the other one acts as a vein, and these tubes are connected to an artificial vascular system. The new dressing keeps the wound sterile and provides electrolytes, glucose, amino acids, and antibiotics to the wound which provides the wound with nutrition. The process of biopsy takes up to two hours and the wound heals within a matter of days, instead of the traditional skin grafts which can take up to weeks or months to even heal.

III. RESULTS

The skin cell gun has been used to treat dozens of patients already. The skin cell gun has been proved to help regenerate skin and drastically cut healing time compared to grafting skin onto the burned area. The average healing time of a



second degree burn is three to four weeks, but with the use of the skin cell gun healing time is a matter of days.

IV. DISCUSSION

The new skin cell gun results has shown to have very promising results and seems to work very efficiently and effectively. Every machine has its limitations, the skin cell gun is no exception. The skin cell gun is not use for commercial use yet, and it is still in its testing phase. The skin cell gun will, hopefully, be upgraded and improved so it can be used for third degree burns. Despite all the limitations, the skin cell gun drastically cuts healing time, risk of infection, and is quick and painless for the patient. Since the skin cell gun uses your stem cells the skin that grows looks natural and causes a lot less scarring than traditional methods such as skin grafting. Skin grafting has a higher risk of infection and can take from three to four weeks to heal. The skin gun seems to be a safe and better alternative to traditional medicine.

REFERENCES

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