Revolutionizing Major Burns Management with Micrografting – Improved Healthcare Costs, Time and Burns Resources

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Abstract Text:

Aims

For major burns (>30% Total Body Surface Area (TBSA) burns), the conundrum of inadequate donor sites and morbidity with conventional repeated split skin grafts (SSG) exist. Micrografting, a different skin coverage method, may improve morbidity. To assess micrografting, we compared important clinical parameters such as patient cost and length of stay between the two.

Methods

From January to October 2014, we had a prospective cohort of 8 patients with >30 % TBSA burns admitted to the SGH Burns Center. The first 4 patients (control group) were managed with meshed SSG. The subsequent 4 patients (study group) were managed using micrografts. Micrografting is the application of autologous 3x3mm split skin grafts on an allograft carrier immediately after burns excision.

We analysed age, extent of burns, total surface area of allografts used and its cost, the number of surgeries and the length of hospital stay between the 2 patient groups. Statistical significance were analysed using the Student's t-test.

Results

Compared to the control SSG group, the study micrograft group had much lesser surgeries (10 vs 19.75), shorter average length of hospital stay (51 vs 120.5 days), and less allograft used for each TBSA percent of burns (115.72 cm^2 vs 356.51cm^2) with overall lower patient costs. These >50% improvement results are statistically significant ($p<0.05$) and represent an amazing clinical improvement milestone. Age and extent of burns are similar between study and control ($p<005$).

Micrografting has higher success on poor beds due to low metabolic demands and greater skin coverage expansion ratio (1:12). Disadvantages include "polka dot" appearance on healing and that the initial surgeries are relatively labour intensive in creating the micrograft squares.

Conclusions

Micrografting is a lifesaving method that revolutionizes major burn care with >50% improvement in healthcare costs, time and burn resources. We have adopted micrografting as part of the major burns protocol as it positively affect patient care and operations.