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Early Excision And Grafting In Burns In A Tertiary Care Centre

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Abstract
Burns injury continues to be major health burden in the world. Early excision increases survival rate with early return to daily life.
Aim: to compare morbidity in patients managed by early excision and grafting within 7 days of burns injury and those patients who were conservatively managed.
Methodology: details of number of surgeries and type of surgery, blood transfusion (units) needed, aba criteria, length of hospital stay and incidence of sepsis are collected.
Conclusion: early excision and grafting in burns has clear advantages and the treatment ends faster, however due to poor availability of skin substitutes, early excision is restricted to less than 20%. With availability of cadaveric allograft excision can be done upto 30% tbsa burns
Keywords: *burns, early excision, cadaveric allograft, skin substitutes, tertiary care center*

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I. Introduction

Burns injury continues to be major health burden in the world .In deep burns, the injured dermis defends itself poorly[1] .Prone to infection, sepsis leading to mortality. Burns survivors need prolonged hospital stay and are prone to hypertrophic scar and contractures.Early excision causes decrease in release of inflammatory mediators and bacterial colonization of wounds by prevention and control of infection.
-Early closure of all wounds.
-Early rehabilitation.
-Decrease in mortality and reduced length of stay.

II. Aim

To compare morbidity in patients with second degree burns / third degree burns who were managed by early excision and grafting within 7 days of burns injury and those patients who were conservatively managed with respect to following parameters
Length of stay
Number of surgeries
Incidence of Sepsis - ABA criteria
Need of blood product

III. Methodology

Inclusion Criteria

1.Patients with 15-40 % total body surface area burns with majority areas being second degree deep or third degree.
2.Age more than 5 years.

Exclusion Criteria

1. Patients with less than 15 % or more than 40% total body surface area burns
2. Superficial burns
3. Extremes of ages
4. Associated injuries

Materials

In both groups following details collected
Number of surgeries and type of surgery.
Blood transfusion (units) needed.
ABA criteria.
Length of hospital stay.
American Burn Association (ABA) sepsis criteria
Temperature (>39°C or <36°C),
Progressive tachycardia (>110/min),
Progressive tachypnea (>25 /min or >12 L/minute ventilated),
Thrombocytopenia (<100,000/µl; after 3 days),
Hyperglycemia (>200 mg/dl, >7 units insulin/hr or >25% increase in insulin requirements -24 hrs),
Feed intolerance >24 hours (abdominal distension, diarrhea).
Meeting >3 of these criteria should "trigger" concern for infection.
Documented infection - culture positive, tissue pathology positive, response to antibiotics.

IV. Methodology

On admission all patients were resuscitated and antibiotics, analgesics given and dressing done regularly.Early excision done within 7 days of burns injury. Under anaesthesia under tumescent infiltration. Burns excision was done with tumescent control / tranexemic acid infiltration and using graft handle or hydro surgery(versa jet). Deep burns were excised till viable wound bed is attained, dermal bleed or moist white dermis or bright yellow fat is exposed. Post excision the wound was grafted with split thickness graft. Autograft was harvested under tumescent control .

In cases in whom, donor site was less or the attempted burns excised was more than 20% and in elderly patient, allograft was done. In patients whom allograft was done, within period of 7 to 10 days , rejected allograft was debrided and autograft was done

In conservatively managed cases, dressing was done on alternate days with silver sulfadiazine or papain urease according to wound status, till eschar separates and wound debridement done. Autograft was done after wound is fit.

All patients routine blood investigations including complete blood count and rapid blood sugar were done routinely until discharge and supported with albumin /fresh frozen plasma when serum albumin <2.5 g/dl.

All patients transfused with packed cell when haemoglobin is less than 10 g/dl. Patients discharged when second look of graft take is more than 70% and followed up outpatient department.

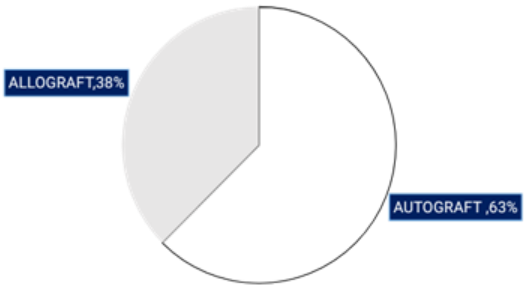

CASE 2 1.7 YRS /FEMALE CHILD
31 % FLAME BURNS ON POST BURN DAY 4
2.EXCISION DONE
3.ALLOGRAFT DONE
Pod 10
Cadaveric graft
4..WOUND DEBRIDEMENT AND AUTOGRAFT DONE ON POST BURN DAY 14
5.WOUND DEBRIDEMENT DONE
6.GRAFTING DONE
7. POST BURN DAY 3 WEEKS
CASE 3 1. 20/MALE 18% FLAME BURNS ON POST BURN DAY 4
2.EXCISION AND AUTOGRAFT DONE
3.POST BURN DAY 36
1.35 YEARS FEMALE - 15 % FLAME BURNS POST BURN DAY 6
2.EXCISION DONE AND AUTOGRAFT DONE
3.POST BURN DAY 6 WEEKS
Lt

V. Results

Day Of Early Excision

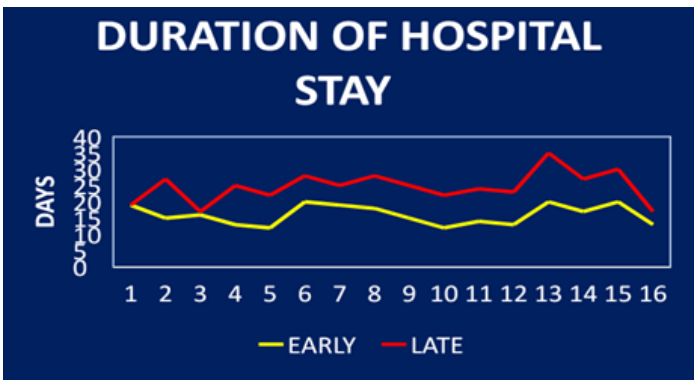
PBD (DAYS)	NUMBER OF PATIENTS
3	1
4	5
5	4
6	5
7	1

Type Of Surgery In Early Excision And Grafting



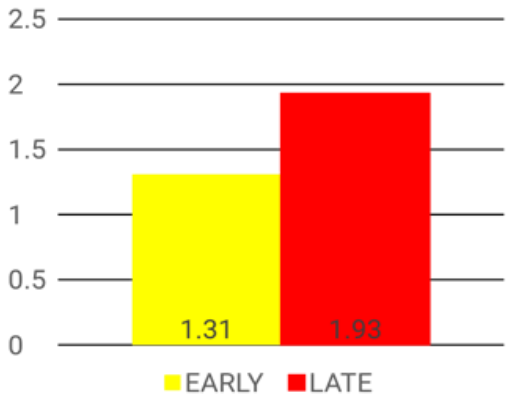
Duration Of Hospital Stay

The duration of hospital stay was comparatively less in early excision (mean – 16 days) when compared to late grafting group mean (24.6 days)



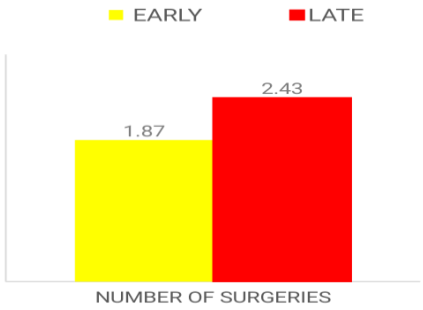
Blood Transfusion

The blood transfusion need was less in early group (mean of 1.31) compared to late grafting (1.93)
MEAN OF NUMBER OF PACKED CELL



Number Of Surgeries

There is significant difference in number of surgeries required by both groups. Late group 2.43 and early group 1.87.



Incidence Of Sepsis

In early excision group, 2 patients had positive sepsis score according to ABA criteria - but were salvaged
60 years female
40 years male
In conservatively managed group 4 patients had positive sepsis score according to the ABA criteria

VI. Discussion

From the time early excision and grafting of burns were introduced, numerous studies have been done to study its advantages. Study done by Puri et al[2]., compared the transfusion requirement in the early excision group and delayed grafting group and found no significant statistical difference in between them. In this study we found the need of blood transfusion was more in the early excision group in only the early treatment phase .
The overall need was more in the conservative group.

The applicability of early excision and grafting is considered to be limited due to various factors like pre-existent malnutrition and anaemia, inadequate primary resuscitation before arrival at the burn center, decreased ability of the patient to tolerate major surgery and blood loss, limited availability of skin substitutes, which limits the ability to excise large areas.

We faced same factors restricting early excision but we were able to extend the percentage upto 30% due to availability of allograft. Puri et al[2] also concluded that early excision and grafting decreases the hospital stay of burn patients.In another study [3], there was no significant survival benefit in the early excision group, but there was significant reduction in the length of stay and the cost of treatment.

There is a paucity of studies comparing timings of burn surgeries. We were able to compare the number of surgeries. Long-term studies will be required to establish the outcome in larger sample sizes and to establish the difference in the quality of life after early and late excision surgeries.[4]

VII. Conclusion

Early excision and grafting in burns has clear advantages and the treatment ends faster, however due to poor availability of skin substitutes, early excision is restricted to less than 20%.
With availability of cadaveric allograft excision can be done upto 30% TBSA burns.

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