ORIGINAL ARTICLE

Conservative Management of Post Debridement Necrotizing Fasciitis Wounds in Infants with Normal Saline Dressing

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ABSTRACT

Background: Necrotizing fasciitis is rapidly progressive infection of the subcutaneous tissue and fascia with secondary necrosis. Spread of progressiveness depends upon thickness of subcutaneous layer, and immunological response. Common methods of treating adults includes aggressive debridement, immunoglobulin therapy, and split thickness skin graft. We followed 25 infants having post debridement large surface area of necrotizing fasciitis.
Methods: 25 Patients with Necrotic fasciitis referred from neonatology, pediatric medicine and Pediatric surgery were included in our study from January 2016 till June 2019. In all cases, the presentation was rapidly progressive with necrotic patches developing within 8-12 hours mostly on limbs and trunk area. These patients were managed by aggressive fluid resuscitation, analgesia, broad-spectrum antibiotics, by primary units.
Results: Twenty five Patients up to one year with large surface wounds (15%) were included, 9 from neonatology, 7 from pediatric surgery while 9 were from pediatric medicine and allied. Wound cultures after debridement was done in all cases. 14 patients had polymicrobial bugs while 11 had single bugs. All patients had wound healed by secondary intensions. Wound healing along with patients vitals were observed on weekly basis on outdoor basis.
Conclusion: Conservative treatment in infants with large surface wounds after proper debridement has advantage of cost effectiveness, no donor site morbidity, lesser hospital stay and easy to carry out.
Keywords: Fasciitis, debridement, normal saline dressing

INTRODUCTION

Necrotising fasciitis (flash eater) is rapidly progressive infection of fascia. It can also be called as hemolytic streptococcal gangrene, synergistic necrotizing. Most common cause of disease is Group A streptococcus but E Coli, Clostridium, Klebsiella can also cause. Bacteria enter body through any breakage in skin like abrasion, cuts. Insect bite, surgical wounds. Initially symptoms start with red, warm or swollen area of skin. Other symptoms of progressive disease are fever with chills, fatigue, and dizziness. Diagnosis is mostly clinically. Treatment begins with strong antibiotics and wound management.

MATERIAL AND METHODS

We conducted this study in the department of pediatric plastic surgery at The Children's Hospital and Institute of Child Health Lahore from January 2016 to June 2019. We included twenty five patients in our study having age less than one year and post debridement surface area of wound more than 15%. Infant data like age, gender, address, mode of initiation of NF, associated and preexisting illness and socio economic history recorded at time of presentation. All patients were included to the study after initial debridement and deep culture of wound. Infants having Hb < 8 g/dl were transfused according to weight. Wound surface area was recorded as size, site, and joint mobility. Normal saline dressing was advised twice daily and infants were followed on weekly basis in outdoor department. Attendants were counseled regarding warning signs like reduce appetite, weight loss, erythema, initiation and progression of necrosis, emergence of purulent discharge. They were also advised regarding infant nutrition, supplements, and wound hygiene. Progress of wound healing was recorded as wound contraction. Out Of 25 patients, 14 grew group type 1 polymicrobial wound cultures while rest of patients had different single strain of bacteria growths.

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RESULTS

In our study all patients were included after initial resuscitation, debridement and stabilization of vitals by the primary units. Twenty five Patients up to one year with large surface wounds (>15% of TBSA) were included, 9 from neonatology, 7 from pediatric surgery while 9 were from pediatric medicine and allied. Wound cultures after debridement was done in all cases. 14 patients had polymicrobial growths while 11 had single bacteria. All patients had wound healed by secondary intensions. Culture of wound showed mostly streptococci, staphylococci and pseudomonas, no unusual bacteria found in cultures[12]. Common site of necrotizing fasciitis was back (60 %), loin, abdominal wall, perineum 30%, and rest had extremities and scalp involvement.

The average time of wound healing was 26 days. The maximum time of wound healing noted was 48 days. Cosmetic disfigurement was noted in larger wounds. No restrictions of range of movements were noted. Our conservative management model involved no need of hospitalization, anesthesia. No donor site complication. It was cost effective.

Necrotizing fasciitis wound back. A) Post debridement B) two weeks later C) at 6 weeks

Age	Gender	Mean Wound size (cm^2)	Mean wound size %TBSA
0 - 28 days	M=8,F=6	81.2	16.5
28 days to 3months	M=4,F=3	110.0	18.8
3 months to 1 year	M=2,F=2	197.5	17.3
Total	25		

DISCUSSION

Necrotizing fasciitis is rapidly progressive infection of the subcutaneous tissue and fascia with secondary necrosis. Spread of progressiveness depends upon thickness of subcutaneous layer, and immunological response. The common cause of NF in children is polymicrobial, associated with immunocomromised state, poor nutrition, and surgical history, and NSAIDs.[11] Increased evidence has been noted in juvenile diabetes mellitus, low birth weight, preexisting malignancy and malnutrition.[3] The common cause of death multiorgan failure secondary to sepsis.[5,8] Diagnosis is mostly clinical with development of small necrotic patches over skin, associated with erythema and rise in body temperature.[3] The necrotic patch is an iceberg and disease aggressively progress to subcutaneous tissue and fascia underneath. Patient loses appetite, gets lethargic and ill looking. Radiology has limited role. Culture sensitivity is mostly polymicrobial, having b- hemolytic streptococci and anaerobic bacteria. Initial management includes aggressive fluid resuscitation, extensive early surgical debridement and intensive care.[2] Patient frequently requires repeat debridement and monitoring through labs[13]. Here Infants were discharged after stabilization by primary units and referred to us for further wound management. Attendants' counselling regarding current disease status, available treatment options and outcome was done. Attendants who opted conservative management were educated regarding infant's nutrition, hygiene, dressing and need of close follow up. Normal saline wet to dry dressing was done twice daily in the first week and daily afterwards. Monitoring of granulation and wound contraction was done weekly on outdoor basis. Follow up interval progressively increased with healing after 3-4 weeks. After complete wound healing emollient massage and gentle physiotherapy was initiated.

CONCLUSION

Conservative treatment in infants with large surface wounds , normal saline dressing has advantage of cost effectiveness, no donor site morbidity, lesser hospital stay and easy to carry out. This mode of management can be easily applied to patients with co morbidities and limited donor site.

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