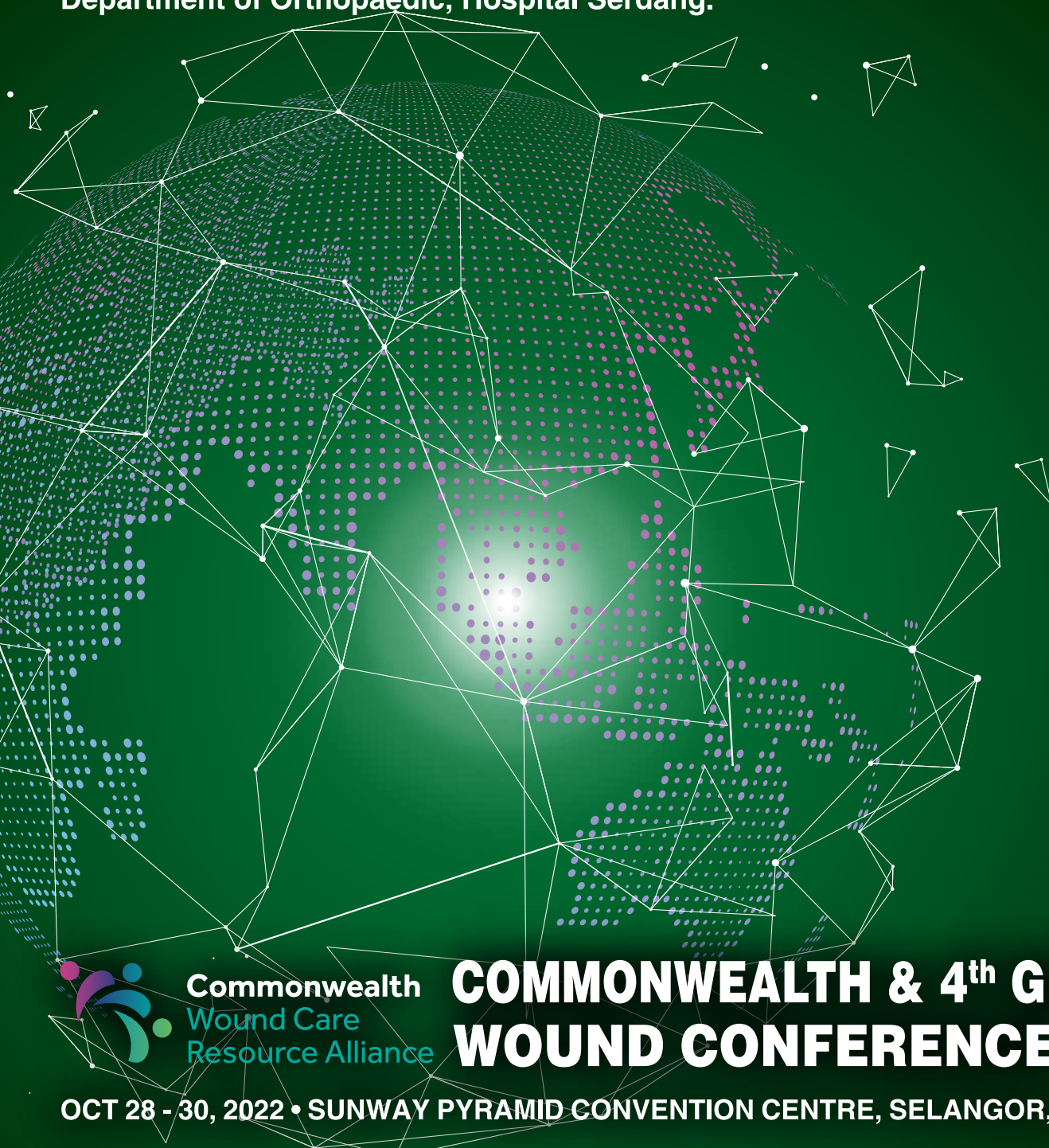




BIOBURDEN CONTROL IN A COMPLEX WOUND USING STAGED PROTOCOL WITH NEGATIVE PRESSURE WOUND THERAPY AND FOAM DRESSING; A CASE REPORT

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INTRODUCTION

Wound healing is a complex, highly regulated process that is critical in maintaining the barrier function of the skin. Chronic non-healing wound subjects to significant discomfort and distress while draining the medical facilities and patient financially. Multidirectional approach based on the wound decision tree for complex wound management should be performed by a dedicated wound care team.

We are reporting a case of complex chronic wound secondary to necrotising soft tissue infection (NSTI) which was managed with staged protocol with negative pressure wound therapy (NPWT) and foam dressing (Retrotech Dressing-RTD).

CASE STUDY

A 44-year-old gentleman with diabetes mellitus (DM) was treated for bilateral leg NSTI. He presented to us with a large area of ruptured bullous lesion over both legs (Figure A). He underwent emergent wound debridement followed by 3 cycles of NPWT with pressure set between 80 to 125 mmHg. After completion of intravenous antibiotics for two weeks he was discharged home with regular dressing at our wound clinic as outpatient.

Wound progression and bioburden were monitored with wound swab culture and sensitivity (C&S). Initially, the wound was cleaned with super oxide solution and saline gauze packing, however the C&S grew mixed pathogens. Thus, we changed the dressing method with the use of RTD foam dressing. This was repeated 3 times per week for 2 months. The wound was showing good progress in healing with healthy granulation tissue formation (Figure D). Repeat swab was done at 3 months showed no growth, thus he was subsequently referred to plastic surgery team for definite wound coverage with split skin graft (SSG).

Time	Method	Swab C + S
Day 1	NPWT	Pseudomonas aeruginosa and streptococcus dysgalactiae
Day 25	Saline Gauze Dressing	Heavy mixed growth
Day 60	RTD Foam Dressing	No recognized pathogen seen

DISCUSSION

When dealing with chronic wound, bioburden have always been controlled with regular debridement. This could result in extensive loss of tissue which result in large wound and slower wound healing process. NPWT uses the negative pressure to prepare a good wound bed for subsequent healing. Foam dressing provides an effective dressing for large exudative wound area as in our patient. The absorbency and permeability of its dressing have an impact in fluid-handling capacity.

RTD foam dressing has 3 main composition with specific functions. Methylene blue and silver ions are antimicrobial while Gentian Violet have additional properties of antifungal integrated in the foam creating a microenvironment that control the amount of exudates via the foam matrix, meanwhile able to maintain moist wound bed via capillary suction therapy which result in neovascularisation and granulation. Overall, there are compelling evidences that these 3 properties are able to reduce the bioburden via the foam matrix and inhibits conducive environment for bacterial growth.

CONCLUSION

A staged protocol for chronic wound management is essential for a better wound outcome. NPWT and foam dressing (RTD) have demonstrated their abilities to significantly reduce wound exudate and bioburden thus preparing a healthy wound bed for subsequent definitive and safe wound coverage.

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Figure A: On admission

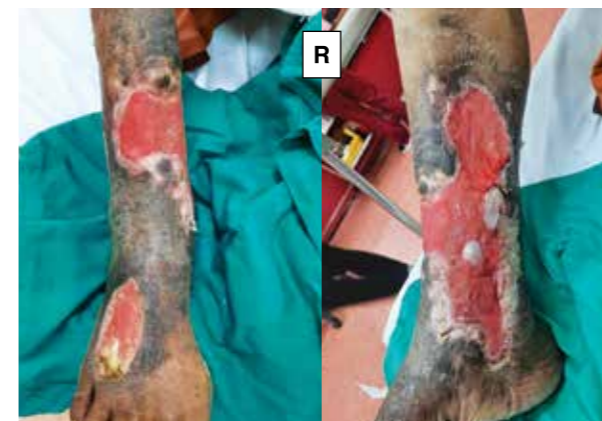


Figure B: 2 weeks post operation

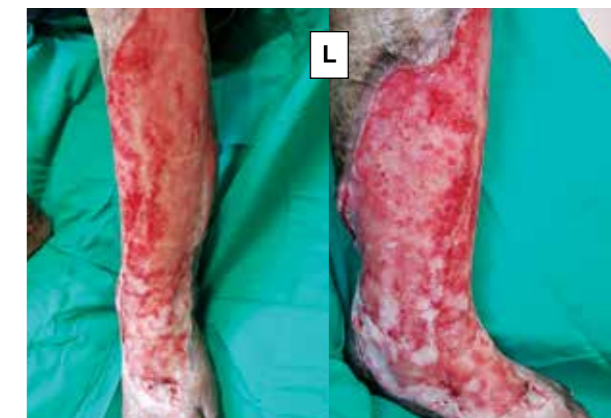


Figure C: On saline dressing

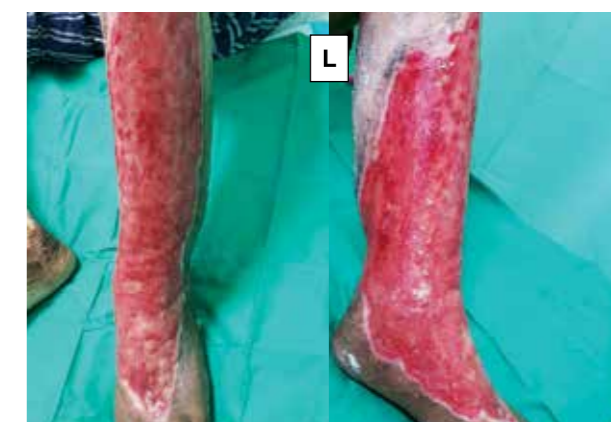
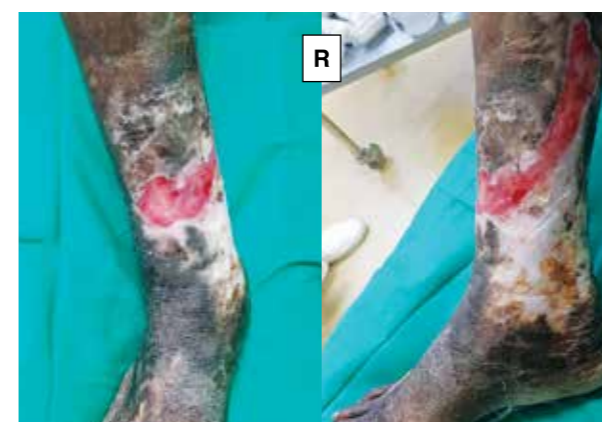


Figure D: Post RTD Dressing



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