062 The use of a new Chitosan gelling fibre primary dressing (Kytocel®) in two patients with deep bone infections following orthopaedic surgery

Lead Contact/Author - Julie Bennett - Tissue Viability Sister
The Royal Orthopaedic Hospital NHS Foundation Trust, Bristol Road, Northfield, Birmingham, B31 2AP
Tel: +44 (0)1216 854000 Ext. 55872

Co-Author - Jody Thompson - Tissue Viability Clinical Nurse Specialist
The Royal Orthopaedic Hospital NHS Foundation Trust, Bristol Road, Northfield, Birmingham, B31 2AP
Tel: +44 (0)1216 854000 Ext. 55872

The Royal Orthopaedic Hospital NHS
NHS Foundation Trust

Introduction

The increasing number of orthopaedic operations being performed means that the absolute number of osteomyelitis infections remains significant. Diagnosis may be challenging and delaying appropriate treatment can lead to reduced joint function and the need for more complex, perhaps multiple, procedures.(Moran et al 2010) Early diagnosis, selection of an appropriate surgical strategy, accurate identification of the responsible microorganisms and construction of an appropriate antibiotic and wound care regimen are essential elements of any management strategy. The Royal Orthopaedic Hospital has a specialist bone infection unit which provides a multidisciplinary model of care, between orthopaedic surgeons with specific expertise in infection and limb reconstruction and microbiologists, along with specialist nurses including tissue viability, and dietetics. This poster presents two case studies that presented with a history of deep bone infections that had failed to respond to treatment.

Method

Case Study 1 - This 66 year old gentleman had a complex history of haemophilia, osteoarthritis, HIV positive and hepatitis B +. He presented to the orthopaedic team 20 years ago following bleeds resulting in the need for a total knee replacement. He later fractured his femur 2004 required an endo-prosthetic replacement of his hip. April 2013 he had loosening and instability of his knee joint and received multiple surgical interventions and revisions as this patient had a long standing multi-resistant pseudomonas osteomyelitis. He was under the care of the Bone infection unit from December 2013 but despite extensive intravenous antibiotics he failed to improve. Therefore in April 2014 he underwent a disarticulation of his hip, this wound then dehisced and was problematic. On 30th May the wound measured 13cm length, lateral depth 7.5cm and medial depth 3.5cm. He was not suitable for topical negative pressure due to his haemophilia. He commenced primary dressing of Kytocel® ribbon that was packed into the wound this was supported by a secondary product Sorbextra® a superabsorbent dressing. He was revised on a twice weekly basis over a period of 15 days. The patient and tissue viability team were surprised by the rapid improvement in the wound during this time.

Case Study 2 - A 49 year old female had a left fractured femur following road traffic accident 2013. She had a past medical history of osteoarthritis and depression. She was referred to the orthopaedic hospital for revision of hemi- pelvis replacement and proximal femoral replacement left hip 2014. This wound failed to heal, despite open surgical reduction, washout with antibiotics and debridement of devitalised tissue. Following surgery on 22nd April full thickness skin necrosis was noted, she had a further wound debridement and closure with abdominal skin advancement on 19th May 2014. This wound failed to progress with topical negative pressure and she developed a multi resistant osteomyelitis with purulent exudate and erythema. The primary dressing was changed to Kytocel® with secondary dressings Sorbextra was applied. Initially these were changed daily, within a week the exudate levels decreased and her dressing were changed every third day. She has now been discharged with the support of our outreach team and continues to make good progress.

Discussion

In both cases the wound progress was vastly superior to previous methods used. The early findings of these two complex case studies are encouraging. The reduction in purulent pus and rapid reduction in wound size and depth was a clear indictor in the absence of any other changes in their treatment that these wounds may go on to heal. It was beyond the remit of the authors to observe complete healing in the time frame observed.

Case Study 1 Results



Fig. 1 Wound on 30.05.14



Fig. 2 Wound on 30.05.14



Fig. 3 Wound on 04.07.14

Case Study 1 Results Continued.....

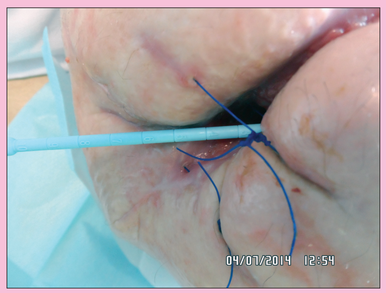


Fig. 4 Wound on 04.07.14



Fig. 5 Wound on 08.08.14

Case Study 2 Results



Fig. 6 Wound on 03.06.14



Fig. 7 Wound on 03.06.14



Fig. 8 Wound on 19.06.14



Fig. 9 Wound on 19.06.14



Fig. 10 Wound on 03.07.14



Fig. 11 Wound on 09.07.14

Conclusion

The royal orthopaedic hospital has agreed to undertake a more robust study in the use of Kytocel® as we believe it can offer an alternative solution for the patients with deep seated bone infections.

References

1. Foda NH, El-laithy HM, Tadros MI (2007) Implantable biodegradable sponges: effect of interpolymer complex formationof chitosan with gelatin on the release behavior of tramadol hydrochloride. Drug Dev Ind Pharm 33(1): 7–17.
2. Khor E, Lim LY (2003) Implantable applications of chitin and chitosan. Biomaterials 24(13): 2339–49.
3. Moran E, Byren I and Atkins BL (2010) The diagnosis and management of prosthetic joint infections J Antimicrob Chemother 2010; 65 Suppl 3: iii45–54 http://jac.oxfordjournals.org/content/65/suppl_3/iii45.full.pdf+html access 14th August 2014.
4. Stephen- Haynes J, Gibson E, Greenwood M (2014) Chitosan: a natural solution for wound healing Journal of community Nursing (JCN), Vol 28, No 1pp 48-53.

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