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Case Report

General Surgery

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ABSTRACT:

Introduction: Foot ulcers are the most common complication in patients with diabetes mellitus, the lifetime incidence of foot ulcers has been estimated to be 15 to 25% [1], and one of the challenges is the correct dressing, having many different types to choose.

We present a 53-year-old male with history of diabetes mellitus 2 since 15 years ago with poor adherence to treatment, which was evaluated with a Texas III-D foot ulcer extended in the lateral border to the plant sized 10x8 cm in its maximum measures. We used Aquacel® Ag+ Extra which is an amorphous bordered hydrogel dressing and a fibrous dressing made from modified carboxymethyl cellulose with silver added. [2]

The objective in this paper is to show a complex diabetic foot ulcer and the following at 8 weeks using silver hydrocolloid alginate dressings and surgical debridement.

Keywords: Diabetic foot ulcers, alginate dressings.

Introduction

Diabetic foot ulcers (DFU) are the most common complications of diabetes mellitus with significant morbidity and mortality. The risk of death in patients with DFU at 5 years is 2.5 times higher than people with diabetes but without foot ulcers [1]. The probability in diabetic patients to be affected with DFU it is estimated within 19-34% more than a half will be infected in a moderated or severe grade and 20% of those lead to some level of amputation with a recurrence of as high as 40% in one year after healed and 65% within five years. [3,4]

The factors involved in the development of foot ulcers includes those by the proper ill: sympathethic neuropathy peripheral neuropathy and peripheral vascular disease, but also the medical follow-up and the many types of healing material to choose.

The bases in the treatment of DFU include off-loading of pressure, infection control, removal of dead cellular material both surgically or the use of wound dressings. Other strategies are: patient education, optimization of blood glucose control, and surgical interventions (drainage of pus, revascularization, amputation) [5]

The British National Formulary 2010 [6] that makes easier to understand and compare the different types of alginates, it is important to note the names and manufacturers vary from country to country.

According to this paper Aquacel® Ag+ Extra can be categorized as antimicrobial dressing, which is

composed of amorphous bordered hydrogel dressing and a fibrous dressing made from modified carboxymethyl cellulose with silver added [2,7].

Case report

A 53-year-old male with history of diabetes mellitus 2 since 15 years ago with poor adherence to treatment, no insulin user, which was evaluated with a Texas III-D foot ulcer (Figure 1-A) extended in the lateral border to the plant, sized 10x8 cm in its maximum measures, peripheral erythema and fetid exudate; he is hospitalized to make a surgical debridement and antimicrobial therapy. In his first 36 hours postoperative we observed necrotic areas in the base and borders so we decided to extend the debridement surface (Figure 1-B) and begin using silver hydrocolloid alginate dressing to keep the ulcer moist.

The follow-up was each week to change the dressing and remodeling the lesion; at the fifth week abundant granulation tissue is observed filling 80% of the surface (Figure 1-C), at the eighth week the 40% of the surface was re-epithelized (Figure 1-D)

During the 8 week follow-up the patient completed two antibiotic scheme with clindamycin, first at the beginning of the treatment and the second at the fourth week because clinically site infection occurred, also at the weekly check up, we made sharp surgical debridement at the office; appropriate asepsis



Figure 1. A. The first evaluation Texas III-D diabetic foot ulcer. B. 36 hour post operative with necrotic areas in the base and borders. C. 5 weeks after with granulation tissue in the 80% of the ulcer surface. D. 8 weeks after re-epithelized on the 40% of the ulcer surface.

and antiseptic technique was used, simple lidocaine 1% and chlorhexidine. The patient agreed to keep the ulcer as clean as possible, changing gauzes even sometimes the whole dressing as necessary.

Discussion

Diabetic foot ulcer is consider a challenge for physicians because of the slowly healing process, in these days we try to make it faster using topical devices. Necrotic tissue, excessive bacterial burden and senescent cells can inhibit wound healing. [5] One of the level I recommendation by Wound Healing Society in its 2016 update [5], it is to select a dressing that will manage the wound exudates and protect the skin surrounding the ulcer but says nothing about the best option between alginate or basic dressings. Dumville, et al [7] found no evidence that alginate dressings promote the healing of diabetic foot ulcers compared with the basic ones, it is important to note that most included participants in those reviews cursed with non-complex diabetic foot ulcer.

The silver hydrocolloid alginate dressing fulfills the requirements of the international recommendations, has the ability to facilitate debridement, provide a barrier to infection and absorb excess fluid.

Conclusion

There is no strong evidence in the treatment of complex DFU using silver hydrocolloid alginate dressing.

Experts recommend use more than one debridement method in the treatment of DFU including surgical, enzymatic, mechanical, biological or autolytic, but at the beginning of treatment it is recommend sharp surgical debridement to maintain the appearance and readiness of the wound bed for healing.

In our experience we conclude that silver hydrocolloid alginate dressings are a good option to

improve the treatment in DFUs letting us make a follow-up outpatient considering that a patient who fail to show a reduction in the ulcer size by 50% or more after 4 weeks, other treatments should be considered.

However with the lack of information a consensus of international experts is necessary to make a strong recommendation of the better dressing option for complex ulcers.

Conflicts of Interests

There was no conflict of interest during the study, and it was not funded by any organization.

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