

Stephanie Bixler,
MSN, CANP, CWCN, AAPWCA
Wound Care Nurse Practitioner
Marshfield Clinic Rice Lake Center
Rice Lake, Wisconsin

Treatment of a Rheumatoid Nodule Surgical Wound with a Novel Powder Wound Dressing*

Introduction:

A rheumatoid nodule is a local swelling or tissue lump which occurs almost exclusively in association with rheumatoid arthritis. The nodules are usually subcutaneous especially over bony prominences such as the tip of the elbow or olecranon or over the finger knuckles. In some cases the nodules can be painful, especially if the overlying skin breaks down and patients opt to have the nodule removed surgically.

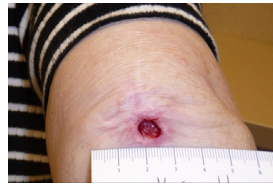
Background:

A 57 year old Caucasian female was referred to the wound care clinic for a non-healing surgical wound of the right elbow created during removal of a rheumatoid nodule. The surgical wound dehisced and remained open 5 weeks post surgery. The patient had a history of similar non-healing surgical wounds from nodule resections in the past complicated by osteomyelitis. The patient was on chronic steroids for rheumatoid arthritis. Treatment was complicated by difficulties in compliance with dressing changes. The wound had been treated with daily dressing changes using triple antibiotic and gauze.

Upon examination, the wound was present on the right arm at the elbow on the lateral olecranon measuring 9 mm in length and 6 mm in width. The depth was 2 mm and there was undermining from 10 to 12 o'clock of approximately 10 mm. The undermining tissue was fibrous and the remaining tissue was red and granulating. There was no evidence of infection. The patient complained of discomfort and pain while sleeping. The patient was treated with a woven hydrocolloid dressing that was covered with an adhesive secondary dressing which was to be changed every three days. Dressing changes were difficult due to discomfort and the wound location.

Treatment:

A novel powder dressing, was placed on the wound as treatment with an extended wear time based on the manufacturer claims. It was hoped that the ability of this dressing to stay in place for longer periods would allow the patient to have infrequent dressing changes between visits. The dressing is presented as a powder and was applied by pouring the powder directly onto the wound. The powder transforms into a solid, flexible dressing in the presence of exudate or normal saline. More powder was added alternating with saline until a plug formed filling the wound to the surface of the skin. The patient was sent home for one week prior to another dressing change and this procedure was repeated with each office visit until the wound completely healed.



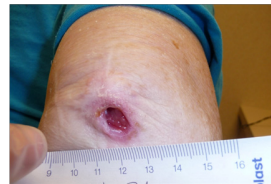
Day 0 of treatment



Day 4 of treatment



Day 11 of treatment



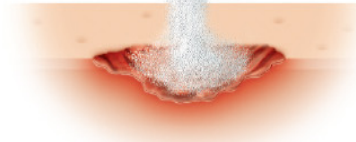
Day 21 of treatment



Day 40 of treatment



Day 47 of treatment



Day 61 of treatment
Wound Healed

Visit	Examination	Treatment	Patient Comments
1-Day 0 of treatment	Wound measures 0.9 x 0.6 cm with depth of 0.2 cm and undermining of 1 cm. No infection	Sharp debridement, irrigation, powder dressing applied	Dressing comfortable and in place
2-4 days of treatment	Wound measures 0.8 x 0.5 cm with depth of 0.2 cm and undermining of 0.8 cm. Granulation bed robust, some new epithelialization, and no infection present	Wound irrigated, powder dressing applied	Patient did not need to change the dressing, no strikethrough dressing noted, decrease in pain
3-12 days of treatment	Wound measures 0.7 x 0.5 cm with depth of 0.1 cm and undermining of 0.5 cm. Contracture and epithelialization present	Wound irrigated, powder dressing applied, contact layer used to cover powder, secured with tape.	Patient notes better sleep with decreased pain. Patient would like to extend periods between dressing changes.
4-21 days of treatment	Wound measures 0.5 x 0.6 cm with no depth and undermining of 0.8 cm.	Wound irrigated, powder dressing applied, contact layer used to cover powder, secured with tape	Patient did not change dressing, noted no drainage, and has been pain free
5-26 days of treatment	Wound measures 0.5 x 0.5 cm with no depth and undermining of 0.8 cm. New granulation tissue noted in undermining area	Wound irrigated, powder dressing applied, contact layer used to cover powder, secured with tape	patient noted no drainage and the dressing stayed in place. Patient did note some itching at wound margins
6-35 days of treatment	Wound measures 0.5 x 0.3 cm and undermining of between 0.2 and 0.4 cm. Undermining track filled with granulation tissue. Dressing was dry and some redness around the wound with crusting on cover dressing. Possible microbial contamination	Wound irrigated, powder dressing applied. Ag mesh applied fixed with tape.	Dressing remained in place. Patient reports some pain at wound site between visits.
8-47 days of treatment	Wound measures 0.3 x 0.4 cm with undermining of 0.4 cm. Wound is 50:50 granulating and epithelialized tissue.	Wound irrigated, powder dressing applied. Ag mesh applied fixed with tape.	Dressing is comfortable with no pain.
10-54 days of treatment	Wound is insignificant with small area of granulating bed. Remainder of wound epithelialized	Wound irrigated, powder dressing applied. Ag mesh applied fixed with tape.	Patient reports no pain and complete freedom of movement. Patient hopes this is last visit. Patient reports that this is faster healing than previous nodule surgical wounds
11-61 days of treatment	Wound healed	Wound healed. Skin washed and covered with gauze and tape. Patient agreed to protect new skin for 2-4 weeks.	Patient wound has remained healed for nearly four months post treatment.