MRSA treatment at Houston Northwest Medical Center

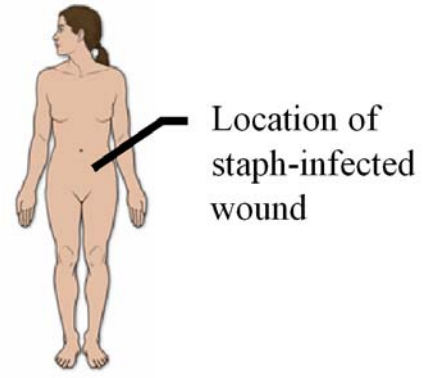
StaphWash and antibiotics used to successfully fight MRSA

The following account describes a case in which medical history was made. Prior to this, StaphWash was used primarily as a topical skin cleanser. In the treatment described here, StaphWash was used as a wound cleanser to treat a hospital patient for a deep abdominal wound which was diagnosed as a MRSA infection. Deep wound cleanser products normally require FDA approval. It is noted here that StaphWash is marketed as a topical skin cleanser with claims similar to the claims normally associated with anti-bacterial soap products; and the manufacturer of StaphWash does not represent it as an FDA approved medical treatment for deep wounds.

Carolyn Rodriguez, age 60, was diagnosed with diabetes 5 1/2 years before her bout with MRSA. Her struggle began when she felt a something on her abdomen while she was outside on Friday, July 27, 2007. She was wearing a loose blouse, not tucked in at the waist. The feeling may have been a spider bite, but this is speculation since no spider was seen. The area developed into an open skin lesion over the next several days and the opening continued to expand and grow deeper.

She was admitted to the hospital on Tuesday, August 7.

Houston Northwest Medical Center delivers safe, cost-effective care. The Nursing Excellence initiative is designed to make Houston Northwest Medical Center the hospital of choice in nursing through a series of targeted initiatives. Among the most significant has been developing new approaches to nursing care delivery designed to improve the practice, resourcing and leadership of nursing. This was the case during Carolyn's care as a hospital patient.



The wound is shown below, before medical treatment.

Prior to medical treatment

After being admitted to the hospital, Carolyn was seen by Dr. Luis Castillo, a board certified infectious disease specialist. He diagnosed the trauma as a MRSA infection. This diagnosis was confirmed later by the results of a culture test.

Wednesday, August 8

The black region in the center of the wound is necrotic (dead) tissue. The cleaning and removal (debridement) of necrotic tissue is a prerequisite for successful wound care and healing. If debridement is not done, wound repair is significantly impaired. Necrotic tissue in the wound becomes a breeding ground for bacteria and may lead to gangrene and septicemia that can result in death.

A cleaning procedure was done to remove black (dead) tissue from the wound.

Carolyn's surgeon was Dr. K. T. Matthew Nguyen.

Carolyn was treated with Vancomycin, a glycopeptide antibiotic used in the treatment of infections caused by Gram-positive bacteria including MRSA. Vancomycin has traditionally been reserved as a drug of last resort however it is usually effective for only about 40% of MRSA patients.

The flesh-eating bacteria continued to eat away at the tissue on her abdomen. Carolyn was treated with Vancomycin and other medications, including pain medication administered via an IV, until the drugs caused her blood pressure to drop to dangerously-low levels.

Thursday, August 9

Carolyn was told that the pain medication was the cause of the first indication of possible renal failure. IV-administered pain medication was suspended on Thursday, and not resumed during her stay in the hospital. Because the wound was in the fatty tissue, Carolyn did not experience intense levels of pain and discomfort although the lesion was both deep and infected.

Friday, August 10

Because of the adverse drug effects, antibiotic drug treatment was suspended on August 10, even though the lesion had grown to a width of 3 inches and a depth of 2.5 inches, as shown on the photographs below. The first photograph shows the wound dressing being removed on Friday afternoon.


Wound dressing being removed.

Wound showing inflamation

The photograph above shows the wound as an oval opening, 3 inches long, 1 inch wide and approximately 2.5 inches deep as measured by Q-tip probes. This photo was taken on Friday, August 10, fourteen days after the first indication of skin trauma and after the wound had become infected with MRSA.

Day 0 of StaphWash use, Saturday, August 11
The situation was clearly degrading and treatment options were needed.

The wound showed no signs of improvement. The drug of choice had been suspended because of undesirable side effects. The situation was becoming worse, and there was danger of the bacteria eating through the abdominal wall, causing a potentially life-threatening condition.

The character of the wound had taken a turn for the worse. A tunnel was detected during the examination of the wound. The tunnel extended from the primary opening toward the navel. The length of the tunnel, when probed, was 1/2 inch in length, indicating that the flesh-eating MRSA bacteria was advancing.

The situation was clearly degrading and treatment options were needed.

Following the family's request, Carolyn's physician allowed the use of StaphWash. There are no known side effects from the use of StaphWash; and there are no known interactions with drugs. StaphWash is not a drug, it is a bacteria-killing skin cleanser that kills 100% of the staph bacteria on contact when tested in-vitro under controlled laboratory conditions.

StaphWash had previously been used by many people as a topical application to kill staph bacteria, but Carolyn's skin lesion was different. In her case, the lesion was a deep lesion, and because of that, StaphWash was to be used as an experimental treatment.

Prior to StaphWash treatment, the lesion was cultured and lab results showed that thre was a “light growth of MRSA.”

Quest Diagnostics Incorporated

AUG 1 2 2007

QUEST DIAGNOSTICS INCORPORATED
CLIENT SERVICE 800.669.6605

SPECIMEN INFORMATION
SPECIMEN: HL182840V
REQUISITION: 5079657

COLLECTED: 08/06/2007
RECEIVED: 08/08/2007 05:05 CT
REPORTED: 08/13/2007 00:04 CT

PATIENT INFORMATION
RODRIGUEZ,CAROLYN

DOB: 03/03/1947 AGE: 60
GENDER: FASTING: Y

ID: 8390
PHONE: 281-807-1264

REPORT STATUS FI

ORDERING PHYSICI
LE,HUONG T

CLIENT INFORMATI
N16502
1960 FAMILY PRAC
ATTN: DR. QUE
837 FM 1960 RD W
HOUSTON, TX 7709

SCANNED

Test Name	In Range	Out of Range	Reference Range
TEST IN QUESTION - MICROBIOLOGY			
STATUS	FINAL		
SPECIMEN SUBMITTED	SW		
QUESTION/PROBLEM	VERIFY TEST		
TEST(S) ORDERED	4550		
PERSON CONTACT	DIANA Z		
FINAL RESOLUTION	ADD TEST		

CLINDAMYCIN RESISTANCE TEST, (D TEST)
SOURCE: W
STATUS: FINAL
RESULT: NEGATIVE FOR INDUCIBLE CLINDAMYCIN RESISTANCE.

CULTURE, AEROBIC BACTERIA
SOURCE: LEFT LOWER ABD
STATUS: FINAL
RESULT: LISTED BELOW
ISOLATE 1: LIGHT GROWTH OF METHICILLIN RESISTANT STAPHYLOCOCCUS AUREUS

RODRIGUEZ,CAROLYN - HL182840V

Page 1 Continu

Initials Date
( ) Send NL Letter to Patient
( ) ABN Send Letter RTC
( ) Call Patient To RTC
( ) Auto Review

First application of StaphWash

Note the red/purple color of much of the lesion in the photograph above. This tissue color indicates the presence of inflammation commonly seen at the site of bacterial infections.

The photograph above shows the first application of StaphWash at 5 p.m. on August 11. It can be seen as the blue liquid at the bottom of the lesion. StaphWash was sprayed on and into the wound by a hospital nurse using a Q-tip to apply the liquid to all accessible surfaces of the lesion.

Carolyn was asked to quantify the degree of tingle caused by the StaphWash application, with a scale of 0 to 10 being defined as 10 being the measure of strong pain. She reported that the tingle was perhaps 2 to 3 on that scale, and the discomfort was entirely manageable.

After the first application of StaphWash, the wound was packed with saline-solution-soaked gauze, and left that way for the following 12 hours.

Day 1 of StaphWash use, Sunday, August 12 -- 5 a.m.

The wound was dressed again at 5 a.m. on Sunday morning. The appearance of the wound is shown below. The dark area in the center of the wound is the blue color of the StaphWash that was applied by the nurse when the dressing was changed.

12 hours after StaphWash

The nurse, June Young, RN, noted that healing was indicated by a granulated ridge forming on the top layer of the wound. There was no observable black tissue. There was no blood draining from the any part of the wound.

She also noted the encouraging change in color of the wound during the 12 hours since the first application of StaphWash. As shown by a comparison of the actual photos, the color had changed from a red/purple look of inflamed tissue to a more pink color indicating much less inflammation.

Upon observing the wound and commenting on the change in characteristics during the 12 hours since the beginning of StaphWash cleansing, the nurse said, "This looks very, very good. Healing is beginning."

The most important observation was that the tunnel had closed, indicating the "turnaround" in the condition. "Turnaround" is defined here as a reversal in the progression of trauma followed by observable healing. The nurse was amazed that the tunnel was closed. The complete closure of the tunnel had obviously occured as a result of healing during the past 12 hours. The lesion was probed carefully to ensure that the tunnel was indeed closed.

Carolyn reported a tingling level of 2 to 3 on a scale of 0 to 10; essentially no change when compared to the sensation she felt 12 hours earlier during the first application of StaphWash.

Note the improvement in the color of the tissue. Since the first application of StaphWash, the red/purple color of the tissue had begun to change to a lighter color, indicating less inflammation of the tissue.

After the application of StaphWash, the wound was packed with saline-solution-soaked gauze, and left that way for the following 12 hours.

Day 1 of StaphWash use, Sunday, August 12 -- 4:45 p.m. to 5 p.m.

A new complication, not related to the use of StaphWash, was noted; first stage renal failure was evident. Urine output was sub-normal. A physician's assessment was that the first-stage renal failure was being caused by drugs, and prescription drug adjustments were made.

At about 4:45 p.m. on August 12, Carolyn was seen by Dr. _____ Go, an infectious disease specialist at the hospital. She pulled back the dressing, observed the healing progress of the wound, and said, "this looks very good."

The wound was dressed again at 5 p.m. on Sunday afternoon by Jerome _____, R.N. The appearance of the wound is shown below.

Rapid improvement

The most important observation was that the depth of the wound had decreased from 2.5 inches to approximately 1.5 inches. This remarkable change was documented, but remains unexplained. Under normal conditions, healing would not proceed this rapidly. In Carolyn's case, this rapid healing rate was very remarkable in view of her diabetic condition which normally would result in slower-than-average healing rates for any lesion.

Carolyn reported a tingling level of 2 to 2.5 on a scale of 0 to 10; a minor improvement when compared to the sensation she felt 24 hours earlier during the first application of StaphWash.

Because of the excellent healing that had been observed, and because no side effects had been observed due to the effects of StaphWash, the confidence levels of the patient, the family and the medical team had grown rapidly over a 36-hour period

since StaphWash was first used to treat the wound.

After the application of StaphWash, the wound was packed with StaphWash-soaked gauze, and left that way for the following 12 hours. Prior to this, the wound had been cleaned with saline-solution-soaked gauze, followed by an application of StaphWash. The wound was then packed with saline-solution-soaked gauze.

Day 2 of StaphWash use, Monday, August 13 -- 6:30 a.m.

Prescription drug adjustments to reverse the first-stage renal failure were successful. On Monday, Carolyn's urine output had resumed and renal failure was no longer a concern.

Her blood pressure had stabilized allowing antibiotic treatment to resume. She began taking Vivox (oral medication), a doxycycline from the tetracycline family of antibiotics.

The wound was dressed again at 5 a.m. on Monday morning. The appearance of the wound is shown in the next photograph. The dark area is not tissue; it is the blue color of the StaphWash.

Color looks better

Upon observation, the nurse said, "the color looks better than it appeared yesterday." No blood seepage, no puss and no black tissue was observed.

Carolyn reported no tingling during the application of StaphWash. This corresponded to a tingling level of ZERO on a scale of 0 to 10; an extremely strong improvement when compared to the sensation she felt 36 hours earlier during the first application of StaphWash.

"No tingling" was the most important change noted on Monday morning. This observation indicated that very significant healing had occurred. StaphWash causes no tingling when applied topically to healthy skin. The patient-reported reduction in tingling has consistently corresponded with increases in healing when StaphWash has been used to cleanse skin lesions.

Day 2 of StaphWash use, Monday, afternoon, 5 p.m.

When the dressing was changed, the hospital nurse observed the wound and no blood seepage, no puss and no black tissue was reported to the patient.

Carolyn reported no tingling during the application of StaphWash. This corresponded to a tingling level of ZERO on a scale of 0 to 10. This report is consistent with tissue healing.

Rapid healing progress was obvious, and there were no signs of residual or recurrent bacterial infection.

Dr. _____ Go (infectious disease specialist) said that the patient was a candidate for release from the hospital, but possible dismissal action was deferred to Dr. Nguyen D. Phan, Carolyn's family physician.

Day 3 of StaphWash use, Tuesday, August 14

The dressing was changed in the morning and again in the afternoon. A new nursing team began caring for Carolyn on Tuesday. Each time the dressing was changed, StaphWash was used to treat the wound.

The following photograph shows the wound in the morning. The blue color is the liquid StaphWash in the wound.

More improvement

When the dressing was changed, the hospital nurse observed the wound and no blood seepage, no puss and no black tissue was reported to the patient.

Carolyn reported no tingling during the application of StaphWash. This corresponded to a tingling level of ZERO on a scale of 0 to 10. This report is consistent with tissue healing.

Rapid healing progress was obvious, and there were no signs of residual or recurrent bacterial infection.

Carolyn's progress was deemed good enough that hospitalization was no longer required. She was discharged from the hospital at 8 p.m., and she returned to her home.

Day 4 of StaphWash use, Wednesday, August 15

On her first morning after returning to her home from the hospital, Carolyn's

husband, Frank, applied StaphWash and observed no complications when changing the wound dressing.

Carolyn was feeling good and she was “up and about.” She was walking from room to room and beginning to lead a normal life again.

The wound care was transferred to a team of visiting home-health nurses on Wednesday with a plan for scheduled visits twice each day for the purpose of changing the dressing on the wound and observing the healing progress.

Day 6 of StaphWash use, Friday, August 17

The dressing was changed in the morning and again in the afternoon. The following photograph shows the wound in the afternoon.

No more inflamed color

This photograph can be compared with the photographs of the wound taken on Day 0 to give a comparison over a 6-day interval during which StaphWash was being used as a wound cleanser. A precision measurement of normalized-demention photographs shows that the wound has decreased in length by 6.5% during the 6-day interval.

The granulation and healing progress is clearly evident in the photos. The clossure of the wound is clearly seen in the photograph above, as inflamed tissue turns to healthy-looking tissue at the edges of the wound during the healing progress.

On Day 6, Carolyn said, “I can tell that it has healed a lot, because it takes much less gauze to pack the wound. Now, when the nurse packs the wound, it takes only about 1/3 as much gauze compared to what was required when I was in the hospital.”

“I know I am better. I stopped taking oral pain medication on Thursday (Day 5). I was given another prescription for Vicadin, but I didn’t need it.”

Day 12 of StaphWash use, Thursday, August 23

Carolyn was seen by her surgeon, Dr. K. T. Matthew Nguyen. When examining the wound, he said, “Wow! That looks good!” The wound had healed from a 2.5 inch-deep wound to a 1/4 inch-deep wound in only 12 days.

Day 17 of StaphWash use, Tuesday, August 28

Carolyn was interviewed to learn her feelings about her progress. She was living a normal life -- cooking for her husband, Frank, and three grandchildren. She had been driving since returning home from the hospital.

Frank continued dressing the wound, but only once per day because of the degree of healing. She reported the “tingling and stretching” that often occurs during healing of the skin. She reported that the lesion had begun to heal and close from the ends toward the center.

Frank noted a very small amount of blood during the changing of the dressing, but noted that healing progress was being observed on a day-by-day basis. The lesion maintained a 1/4 inch depth as the healing progress continued from the sides and skin surface of the wound.

Photograph time sequence showing healing progress

August 10, before StaphWash cleansing began (left)
and August 11, the day StaphWash cleansing began (right)


August 11, August 12 and August 21, 2007



August 22, August 26 and Sepember 4, 2007



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