Long-term Success
Myocutaneous Flap
Clinical Case Study

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There are 6,009 Medicare-certified home health agencies in the U.S. Each of these agencies provide care to patients who are at risk for developing or have pressure ulcers. The prevalence of Stage II pressure ulcers, or worse, among patients receiving care at home was reported to be 8.7 percent by Barbenel, Jordan, Nical, et al (1977) and 20 percent by Clarke and Kaddom (1988).\(^{1,2}\) Physicians, discharge planners, case managers and homecare nurses consider the needs of both the patient and the care giver in developing the strategies of treatment. Treatment plans developed for the patient in the acute care setting are often unrealistic for the patient at home. Home health nurses know all too well the frustration of dealing with limited resources in the home care setting. Even with good family support and the best equipment, patients sometime have to deal with discouragement when improvement is not realized or relapses occur.

The following case study illustrates an example of a patient that had to deal with numerous setbacks along the road to recovery. Multiple treatment failures led to the utilization of the ROHO\textsuperscript{TM} DRY FLOTATION\textsuperscript{TM} Mattress which proved to be an excellent product in managing this patient.

Background

Mrs. CB was a 78-year-old female with a history of heart disease, diabetes mellitus and severe peripheral vascular disease. During a femoral popliteal bypass on 02/08/90, she received spinal anesthesia and developed a postoperative epidural hematoma which subsequently developed into paraparesis of her lower extremities. Post hospitalization, the patient was admitted to a SNF for rehabilitation. A pressure ulcer developed on the right heel which resulted in an above-the-knee amputation on 06/21/90. During this time she also developed a pressure ulcer on the sacral region and on the ischial tuberosity. A debridement, partial resection of the sacrum, bilateral gluteal myocutaneous flap and advancement of fascia with cutaneous flap was performed on 07/18/90. The patient was discharged home to be followed by a home health agency.

On January 3, 1991, the Little Company of Mary Home Health Agency assumed home care services. At the time of assessment, the patient had a Stage III pressure ulcer on her coccyx measuring 10cm x 7.5cm x 2cm. Her cardiac and respiratory status was stable and diabetes was well controlled with a no added sugar diet and 12 units of Humulin\textsuperscript{R} N insulin daily.
Blood sugars ranged from 103-151mg. A Foley catheter was used to manage urinary incontinence.

The initial protocol for wound management consisted of a calcium alginate dressing which was changed daily by the client’s daughter. Both of the patient’s daughters were very involved in the patient’s care. Family/patient education stressed the need to reposition at least every two hours and the importance of utilizing pillows to keep bony prominences from direct contact. Eventually, when it became apparent that a more aggressive approach was needed, an air fluidized bed was placed in the home on 02/01/91.

Although there was improvement and granulation in the pressure ulcer, measuring 6cm x 5cm, the patient’s mental state was being affected by her confinement to the air fluidized bed. It was impossible for her family to get her out of bed, which led her to feel isolated from family activities. The bedroom utilized by the patient was small. It was difficult to arrange other equipment with the air fluidized bed in place. Inconveniences included increased warmth in the room, constant noise and expensive electrical needs to accommodate the system.

On 04/09/91, the patient underwent an extensive debridement of the sacrum, partial resection of the sacral bone, bilateral gluteal myocutaneous flap and advancement of perculanteous flap, wide excision of ulceration to the left ischial region and partial excision on the ischial bone. During hospitalization, the patient underwent the normal treatment course including IV therapy. Postoperatively, the patient returned home and was again placed on an air fluidized bed.

On 05/22/91, the flap was well healed; the air fluidized bed was discontinued. Despite frequent nursing visits by the home health agency and conscientious care by the family, the patient again developed a Stage III pressure ulcer on the right ischial tuberosity. Local wound care consisted of a variety of products including wet to dry dressings, absorption dressings, and hydrocolloids. On 07/03/91, the patient returned to surgery for debridement of fascia, cutaneous flap to sacral ulceration, and debridement of ischial bone and posterior thigh with myocutaneous flap to the right ischial region.

Upon discharge, the patient was returned home to receive home health nursing and an EHOB Waffle® mattress. Within one month, the patient developed a Stage III deep pressure ulcer on the right ischial tuberosity measuring 1.5cm x 1.5cm x 1.0cm and a Stage I on the right heel measuring 3.5cm x 3.4cm. The patient, family and nurses caring for the patient were discouraged with the continued development of skin problems.
Left heel - Stage I 3.5cm x 3.45cm, reddened but intact skin.

Left heel - Minimal redness

Left ischial tuberosity - State III 1.5cm x 1.5cm x 1.0cm.

Left ischial tuberosity.

Right ischial tuberosity - Stage II 1.0cm x 1.0cm.

Right ischial tuberosity - Stage III 1.5cm x 1.0cm x 2cm tunneling x 1cm depth.

Right upper thigh - State III 2.2cm x 1.5cm x 3cm tunneling x 1.25cm depth.
ROHO DRY
FLOATATION®
Intervention

It was decided to look at a support surface that would provide therapeutic cushioning and allow the family a more convenient and economical system within the home environment. A ROHO DRY FLOATATION Mattress and local wound management utilizing a Duoderm® (hydrocolloid) dressing were prescribed.

Although both areas healed quickly, the patient spontaneously opened on the right outer thigh and right ischial tuberosity on 10/29/91. The home health nurse observed a large amount of bloody drainage with pieces of calcium-like material. Surgical intervention on 11/01/91 resulted in debridement and closure of the right ischium and thigh with rhomboid flap. The patient again returned home utilizing the ROHO DRY FLOATATION System.

Five months later a 1.0cm x 1.5cm x 2cm deep area was noted on the right ischial tuberosity. A calcium alginate dressing with a Tegaderm® dressing covering was changed daily for two weeks. Complete closing of the wound occurred. The patient has continued to use the ROHO DRY FLOATATION Mattress System for over 1 year with no skin problems noted. The home health nurses continue to see the patient at scheduled intervals.
Conclusion

The team approach to managing complex patients such as Mrs. CB is essential to success. It is imperative that everyone involved - including the patient - be educated and work toward the same goals. Since Mrs. CB and her family understood and were compliant to the treatment protocols, it was very discouraging when flap sites failed repeatedly. They understood the serious consequences of an ischemic ulcer after the patient’s right leg was amputated as a result of an ulcer on the heel.

Debridement and muscle flap procedures have become a well accepted method in treating extensive pressure ulcers and the use of air fluidized beds have become the standard support surface in the postoperative period. According to Conway & Griffith, 1956, up to 16% of pressure ulcers will reoccur. With each recurrence, local tissue becomes more scarred and fibrotic, while the muscles available for flap coverage lessens. In Mrs. CB’s case, repeated flaps failed even with proper medical management and good nursing care. The home health nurses caring for the patient felt that the
ROHO DRY FLOATATION Mattress provided the correct environment for wound healing by applying enough pressure to the flap site to maximize the exchange of O₂ and nutrients to the skin level, but not enough pressure to cut off blood flow. The ROHO HIGH PROFILE® wheelchair cushion provided a therapeutic seating surface so that the patient could be transferred out of bed without concern for occlusion of blood flow to the flapped sites. This allowed her to participate in family activities and have a feeling of well being.

Use of the ROHO DRY FLOATATION System works well in the home environment. It can be used on a standard hospital bed, requires no electrical power and is a cost-effective therapeutic alternative to the air fluidized bed.

REFERENCES


Tegaderm is a trademark of 3M Medical-Surgical Division
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