Matrix Heals Stubborn Lower-Extremity Wounds

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SCOTTSDALE, Ariz. — When a com-
plex lower-extremity wound is unrespon-
sive to conventional treatments and am-
putation looks as the only option, an ac-
cular regenerative tissue matrix can be
offered as a last resort. A. Liden, MD, said
at the annual meeting of the Wound
Healing Society.

“Bioengineered skin grafts have be-
come a promising alternative for the
treatment of chronic, nonhealing, full-
thickness lower-extremity wounds,” said
Dr. Liden, whose retrospective study eval-
uates the graft (Graftjacket, Wright Med-
ical Technology Inc.) human acellular
dermal matrix.

“The matrix maintains a moist wound
environment during the incorporation
phase of wound healing and provides a
barrier to the outside to reduce the chance
of infection, and granulation tissue forms
within 5–7 days, reducing the depth of
wounds,” explained Dr. Liden, a podiatrist
in Circleville, Ohio.

The double-layered membrane, which
prompts revascularization of the reticular
layer and wound closure, can be applied
over tendon and bone.

The regenerative tissue matrix was ap-
tached to 75 wounds on 13 patients under
a standard protocol, and wounds were as-
essed using the University of Texas dia-
abetic wound classifications. Dr. Liden said
that 12 of the wounds were classified as III-D
(infected to the bone) and had poor
blood supply.

The cohort’s average age was 62 years,
with women outnumbering men 3:2. Nearly
all patients had cardiac disease, while
78% were diabetic, 69% had infec-
tion on initial presentation, 65% had os-
terolyminals initially, and 91% had pe-
teral vascular disease. The average age of
-treated wounds was 17 weeks.

“This was not front-line defense,” ex-
plained Dr. Liden. “Everything else had
failed for these patients.” The defense
held, with all but two of the patients
achieving complete healing.

One exception was a woman who had
stepped on a nail, developed an abscess,
and required amputation.

The other was a noncompliant man
who was successfully treated on a second
attempt.

“The average time to graft incorpora-
tion, which is what I consider to be the
most important part of the treatment,
was about 1 week, and we averaged about
12 weeks to complete healing. The quick-
est we healed was 3 weeks and the slow-
est was 30 weeks,” Dr. Liden explained.

“This acellular tissue matrix is safe and ef-
icacious for complex lower-extremity
wounds and is universally applicable.

Graftjacket has several advantages over
conventional wound coverings. “It has an-
exreme high tensile strength, retains its
vascular channels, and incorporates and
converts in the host tissue. The collagen in
this product is utilized rather than re-
placed. Also, its acellular structure elimi-
nates worry about inflammation and re-
jection,” he said, adding that growth
factors FGF2 and VEGF are present in the
product upon application.

When the graft is used on a full-thick-
ness wound, he explained, it’s important
to remove as much necrotic tissue as pos-
sible and try to get down to the bleeding
wound bed.

“Make sure the graft doesn’t ‘tent,’
which occurs when you don’t make max-
imum contact with the wound. And
watch for bleeding, which can lift the
graft away from the wound bed,” Dr. Li-
den added. “This is because the matrix has
to be anchored down like a skin graft to
eliminate motion.”

“The more motion that occurs, the
higher the chance of failure,” he said, ad-
vising against this. You can lay this over
necrotic tissue, bone, or tendon—all of
which I’ve done without problems.”

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tainer, contribution to research funds, and
contribution to travel funds from Wright
Medical.