Rare Synovitis Remits With Radiotherapy

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DENVER — Moderate-dose radiotherapy is highly effective in achieving sustained remission in patients with high-risk pigment- 
ed villonodular synovitis, Brian O’Sullivan, M.B., B.Ch., M.R.C.P., said at the an- 
nual meeting of the American Society for Therapeutic Radiolo- 
gy and Oncology.

Throughout 20 years of experi- 
ence in managing this pro- 
liferative disease, he has con- 
cluded that the best approach is surgical gross total removal of 
the lesion followed by radiotherapy (RT). But when surgery is likely to 
compromise func- 
tion, RT alone will 
achieve control of 
good disease, according to Dr. O’Sulli- 
van, a radiation oncologist at 
Princess Margaret Hospital and 
professor of radiation oncology 
at the University of Toronto.

Pigmented villonodular syno- 
vitis (PVSN) is a rare monoartic- 
ular proliferative process origi- 
nating in synovial membranes. 
Although it can affect any mobile joint, the knee is the most com- 
mon site. Lesions can also arise in bursae or tendon sheaths. PVSN can 
be a destrucive process in- 
volving invasion of cartilage, 
bone, and adjacent tissues, with 
resultant major loss of function 
and, occasionally, amputation. Its 
treatment poses technical chal- 
 lenges, especially in patients with 
large circumferential lesions of 
the knee, for which the goal is to 
deliver enough RT to control the 
disease while sparing some of 
the often limited quantity of nor- 
mal tissue.

“I get more calls about PVSN 
than any other disease I treat,” 
the physician said.

The classic PVSN scenario in- 
volves a swollen joint with 
episodes of painful acute swelling related to acute hemorrhage. “It 
often mimics the type of joint a 
hematologic patient has,” said 
Dr. O’Sullivan.

PVSN comes in two forms. 
Nodular PVSN consists of a pe- 
duced lesion surrounded by 
normal synovium. The diffuse 
form is far more problematic, 
with recurrence rates of 50%- 
90% quoted in various series. The 
arthroscopic appearance of dif- 
fuse PVSN typically features a 
shaggy “large beard” villous pro- 
liferation with a thickened, over- 
grown synovium, often accom- 
pa nied by bony scalloping or 
erosion.

Dr. O’Sullivan presented a se- 
ries of 41 patients with PVSN who 
were prospectively followed for 
a mean of 77 months after RT. 
Of these, 23 presented with re- 
current disease for which they 
had undergone a mean of two 
 prior surgical procedures. The 
other 18 had what he described as 
primary disease of prodigious 
proportions.” The lesion origi- 
nated in the knee in 15 patients, 
and in another joint in 21 others; 
in 5 patients the disease arose in 
more than one particular tissue. All 
patients had the poorer prognosis 
(diffuse) type of PVSN. All but 
one had both intra- and extra-
trochanteric disease. Three-quarters of 
the lesions were larger than 5 cm, 
and 17 were larger than 10 cm.

The RT regimen has evolved 
over time. Dr. O’Sullivan has set- 
toff to a dose of 40 Gy adminis- 
ted in 20 fractions over 3 weeks as 
ofimal. This is supplemented 
by a final 8-Gy boost to the area 
of fullest disease. Arthroscopic 
surgery port sites also get a bolus, 
because he has observed that 
PVSN preferentially spreads there. 
At a mean of 77 months, 40 of 
41 patients remain in good local 
control as defined either by 
an absence of clinical and imaging 
evidence of disease in patients 
free of overt disease at the time of 
RT, or by stable disease on se- 
rial follow-up imaging studies. One 
patient developed lesion 
growth starting 4 years post RT. 
Functional status was deemed 
good in 31 patients and adequate 
in 5. Both patients whose func- 
tional status was rated as poor 
had significant preexisting bone 
involveent. There have been no 
RT-induced neoplasias.

In response to audience ques- 
tions, Dr. O’Sullivan said he often 
holds off on RT until he can evalu- 
ate the tempo of the disease. 
But he tends to intervene early in 
large progressive knee and hip le- 
sions. “The problem is, if you let 
 this disease persist and it contin- 
ues to grow, it will destroy the 
joint,” he warned.

Spinal Disk Replacement Neck and Neck With Spinal Fusion

BY MITCHEL L. ZOLER
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PHILADELPHIA — Spinal disk replace- 
ment was at least as effective as conven- 
tional spinal fusion for treating patients 
with degenerative disk disease in results 
from several studies reported at the an- 
nual meeting of the North American 
Spine Society.

Although total disk replacement 
with a prosthesis is still in development—and so far initial studies have shown it to be no bet- 
ter than spinal fusion—experts believe that 
arthroplasty has several potential advan- 
tages that are fueling interest in this option.

There is the view that both types of re- 
pair will play a role. “You can’t categorize 
all patients together. Some patients will 
need fusion, but for the majority of pa- 
ients arthroplasty will be better in the long run,” said James J. Yue, M.D., an or- 
thopedic surgeon at New York University, and his 
associates reported in a poster.

The two trials comparing lumbar-disk 
replacement with spinal fusion also had a 
similar design. One study reported the 
outcomes of patients with two-level de- 
generative disk disease. Sixteen patients 
were randomized to total disk arthroplas- 
try with the ProDisc-L and 8 patients were 
randomized to circumferential spinal fu- 
sion. Another 12 patients with two-level 
disease were treated with arthroplasty on 
a nonrandomized basis.

After an average follow-up of 18 
months, pain and function were similar in 
the two groups of patients, who were as- 
sessed using a visual analog scale of pain, 
the Oswestry disability index, the short- 
form-36, a visual analog scale, and by 
range of motion.

During an average follow-up of 1 year, 
periodic assessments by the same mea- 
sures used in the two-level study showed 
no significant differences in response be- 
 tween the two groups, Dr. Petrizzo said 
during an oral presentation at the meeting.

A fifth study reviewed 22 patients aged 
60 or older who received a ProDisc-L to re- 
pair lumbar disk disease. The group in- 
cluded 17 patients with single-level disease; 
4 with two-level disk degeneration, and 
1 patient with three-level disease. Their 
average age was 63 years.

After a minimum follow-up of 2 years 
and an average follow-up of more than 14 
months, the patients had significant im- 
provements in their Oswestry disability in- 
dex and pain scores, Dr. Yue said. Signifi- 
cant improvements in the Oswestry score 
did not appear until patients were fol- 
lowed for at least 1 year. The rate of pa- 
tient satisfaction was 91%.

Four patients (18%) had complications. 
Two patients had neurologic complica- 
tions: one developed a partial foot drop 
and recovered, the other developed com- 
plete foot drop and did not recover. Two 
other patients had partial implant subsi- 
dence. No patients had vascular complica- 
tions.

Artificial disk replacement in the elderly 
is controversial and cannot be general- 
ly recommended at this time, especially in 
patients with circumferential spinal steno-
sis,” Dr. Yue said.