Recalcitrant peripheral spondyloarthritis treated with radiotherapy
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A 28-year-old woman was referred for consideration of radiotherapy to her right knee, affected by persistent enthesitis secondary to spondyloarthritis. She presented with recurrent episodes of severe debilitating right knee pain on weight-bearing and movement, necessitating her to wear a leg brace and crutches to walk. She had been admitted multiple times for management of her pain and these episodes recur every 2–3 months.

The pain was located on the lateral aspect of her right knee. The area was swollen, excruciatingly tender, with a degree of dysesthesia. She also developed significant valgus angulation at the right knee with consequent valgus angulation at the ankle, forefoot pronation and clawing of the toes, secondary to pain.

During flare-up, the CRP was raised and on MRI, enthesitis of the biceps femoris with associated reactive synovitis was seen. The enthesitis was also evident on nuclear medicine scan.

She was managed with multiple therapies, which include local steroid injection, methotrexate, sulphasalazine, mesalamine, leflunomide, IV methylprednisolone, physiotherapy and acupuncture. Unfortunately, none of this was consistently helpful in improving her symptoms.

She had two courses of radiotherapy to the same area; 15Gy in 10 fractions over 2 weeks. With the first course, she was symptom-free for a period of 8 months. A second course was given after relapse and she was again symptom-free for several months, enabling her to be mobile for her wedding day.

At the end of the second course, her only side effect was mild erythema of the irradiated skin.

Discussion
Spondyloarthritis is a relatively common condition with prevalence of 0.4 to 1.9%. In this case report, radiotherapy was utilised to palliate the patient’s pain to good effect. Radiotherapy was a mainstay treatment for spondyloarthritis in the 1930s to 1950s but it was soon abandoned due to its association with secondary leukaemia.

Increased leukaemia risk is a late complication of spinal irradiation with significant volumes of haematopoeitically active bone marrow receiving large mean radiation doses. Theoretically, localised radiotherapy to peripheral spondyloarthritis should not have the same risk, as the volume of irradiated bone marrow is minimal and the bone marrow in the distal long bones in an adult is not usually haematopoeitically active. Also, it should be noted that the radiotherapy given in the period when radiation was routinely used was orthovoltage radiation, which is absorbed unequally by bone and soft tissues. Modern megavoltage
radiotherapy has the advantage of being absorbed equally by bone and soft tissues and advancements in technology especially with the implementation of CT planning, radiation delivery allows greater precision with minimal doses to normal tissues. We believe the main secondary malignancy risk in localised radiotherapy is basal cell carcinoma, with an absolute lifetime risk of approximately $1 \times 10^{-5}$ for $1 \text{cm}^2$ per Gy.\(^4\) In the literature, evidence for localised radiotherapy for peripheral spondyloarthritis is old, but was shown to be effective in relieving pain.\(^3,5\) The dose reported in those papers were 10–20Gy course in 1–2Gy fractions.\(^3,5\) Our case is a recent experience and has showed that localised radiotherapy is effective for recalcitrant peripheral spondyloarthritis and in selected cases, we believe it should be considered as a valid option for palliation.

**Figure 1:** Three-dimensional CT images of plan

**Competing interests:** Nil

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