Talar fractures and avascular necrosis. Are we underestimating the risk?

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Dear Sirs,

We have read the article, “Delayed surgical treatment for neglected or mal-reduced talar fractures” by Huang and Cheng with great interest [2].

In that study, all of the patients had been previously treated either surgically or conservatively. However, one patient had avascular necrosis, six patients had osteoarthritic changes, one patient had delayed wound healing, and one patient had tarsal tunnel syndrome after the operation. Therefore, the authors concluded that restoration of the talus architecture could produce a favourable outcome, even in the long-term (neglected or mal-reduced) cases [2]. In contrast to another author, they assert that, if proper restoration is achieved, the risk of avascular necrosis was not as high.

We know that talar fractures are relatively rare injuries, with potentially serious long-term morbidity, and that avascular necrosis of the talus has always been a surgical challenge because the talus is hidden by its anatomical location and has a precarious blood supply. This causes collapse of the talar dome and leads to degenerative changes and pain and disability of the ankle and subtalar joints.

A recent study shows that the risk of subtalar osteoarthritis is 53.3%, ankle osteoarthritis is 25%, and avascular necrosis is 16.6% following talar fractures [1]. Avascular necrosis is not necessarily preventable by proper surgical techniques, but it occurs mostly after Hawkins Type 3 and 2 fractures of the talar neck, regardless of the anatomical reduction [1].

However, the authors found that one patient was excellent and five were good after operation [2]. The functional outcome varied and was most dependent upon the development of complications [3].

In another study, 23 (88%) of 26 patients had radiographic evidence of osteonecrosis and/or posttraumatic arthritis. Worse outcomes were noted in association with comminuted and open fractures. Also, it was seen that osteonecrosis and post-traumatic arthritis adversely affected the outcome scores [4].

We agree that secondary reconstruction with joint preservation leads to considerable functional improvement in painful talar malunions and nonunions in many patients, but we do not believe that anatomical reduction and stable fixation prevents subsequent avascular necrosis and osteoarthritic changes, as Huang and Cheng stated [2].

In conclusion, in common with the statements of other authors, open reduction and internal fixation is recommended for the treatment of displaced talar fractures. But the patients with a displaced fracture of the talus should be informed and counselled that post-traumatic arthritis and chronic pain are expected outcomes, even after anatomical reduction and stable fixation.

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