RUNNER'S HEEL

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In modern track and field athletics rising standards of competition and training have imposed increasing strains on the limbs of athletes. Following Corrigan's (1968) classification into trauma and overuse injuries we find that in runners overuse injuries are becoming the biggest single barrier to the pursuit of a successful career. In a series of 150 consecutive sports injuries seen at King's College Hospital, 32% of all sports injuries were classified as overuse injuries but in track and field athletes these injuries accounted for no less than 64.3% of new attendances (Sperryn, unpublished data).

There is a difference in the running action of sprinters and long distance runners. Sprinters have a more active quadriceps-hamstrings action and tend to run on the ball of the foot, whereas in long distance runners the limb carriage is lower and there is more grounding of the heel. Comparison of the incidence of injuries in sprinting and long distance running, with the division being made at 800 metres racing distance, shows a quite different range of predominating injuries.

The long distance runner is frequently disabled by Achilles tendon pain and by plantar fasciitis. In a series of 72 runners seen in the past two years with 99 separate injuries, I found that none of the 23 sprinters suffered either plantar fasciitis or Achilles pain, whereas 7 and 13 out of 49 respectively of the longer distance runners were thus afflicted. Plantar fasciitis is rarely a difficult problem to deal with and a combination of padding, change of training surface and hydrocortisone injection is usually rapidly effective.

In this series there were 13 distance runners, all male, with Achilles pain presenting for treatment. The average age was 26 years (range 17-34) and there were 7 international athletes. Their weekly mileage run was as shown:-

Mileage run per week				
under 25	25 - 50	50 - 100	over 100	MILES
1	3	8	1	No. of runners.

These mileages were at the time of consultation and one of the more severe cases was in fact "only" managing 75 miles per week, in pain, instead of his usual 120.

Nine cases were seen within three months of the onset of symptoms. Four, all of them international athletes, were seen after over six months of continuous symptoms.

Achilles pain was further classified into tendonitis, 6 cases, there being no surrounding inflammatory tissue, paratendonitis, 5 cases, where there was palpable soft tissue swelling around the Achilles tendon and partial rupture of the tendon, 2 cases.

Treatment of Achilles pain starts with adequate heel padding and reduction of weekly mileage load. Most running shoes on the market provide very poor protection against repeated hard contact with road or track surfaces and I have found "Plastazote" the most useful substance for heel padding in running shoes. This is in use in most physical medicine departments for making light weight heat moulded splints and this ensures a free supply of off-cuts. Simple sorbo heel pads are not resilient enough. Changing the athletes' running surface was sufficient to cure two cases and here it must be emphasized that athletes running throughout the year often tend to do the majority of their mileage on the road, especially in winter and this jarring factor, in addition to the sheer repeated overuse of tendons, is an important causal factor in Achilles strain. Many athletes run over 100 miles per week, which means well over 3 million extra strides per annum in addition to daily work load. Physiotherapy methods (short wave, frictions and ultrasonics) were used in one patient because he had previously had repeated hydrocortisone injections without relief. These methods were ineffective. Four patients, three with paratendonitis, were injected with hydrocortisone. It was felt that the risk of subsequent rupture, following injection into the tendon itself was unacceptable. Injection was made only into palpable inflammatory tissue surrounding the Achilles tendon itself.

The athlete is concerned mainly with an early return to full training and of these 13 cases, 8 were back in full painless training within a fortnight and 10 altogether within one month. The other 3 were operated upon.

Operations were performed by Mr. J. E. Buck and in the 3 cases, 2 partial ruptures of the Achilles tendon were found and repaired, using the plantaris tendon. One case showed no rupture but extensive paratendonitis and fibrosis and this inflammatory tissue was stripped. Two of the patients operated upon have returned to full training and competition, the third patient has only recently been operated on. This series of 13 also included two previously operated patients, one with partial rupture, repaired abroad and

one with total rupture following previous tendonitis and cortisone injection, both of whom had made full athletic recoveries.

A plea is made for the wider recognition and earlier operative repair of partial rupture of the Achilles tendon as advocated by Lunquist (1968) in his classic monograph. The most useful diagnostic aids in this series have been (i) a history of persistent chronic Achilles pain in a runner performing high mileage runs, (ii) often episodic sudden exacerbations of this pain during racing or training and incidentally, (iii) repeated previous failures of hydrocortisone injections to effect complete cure. In contrast to Lunquist, I have found EMG studies unhelpful. The diagnosis is essentially based on the history.

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References:

- Corrigan, A.B., "Sports Injuries" Hosp. Med., 2, 1328, August 1968.
Lunquist, R., "Subcutaneous Partial Rupture of the Achilles Tendon"
Acta. Orth. Scand. 1968 (supplement No.113).