

Percutaneous Achilles Tendon Repair Using Ring Forceps

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ABSTRACT

In this article, we describe a method of percutaneous repair of acute Achilles tendon ruptures. We suggest an inexpensive and practical technique, using standard ring forceps, that produces results comparable with those obtained with Dr. Richard Stern's Achillon apparatus.

The rising popularity of percutaneous repair of ruptured Achilles tendons as an alternative to an open surgical method has resulted in a recent surge in reports on the topic. In a comparative study by Haji and colleagues,¹ surgical complications of open and percutaneous repairs were found to be very similar. Percutaneous repair was a competitive treatment, requiring only two thirds the time of open surgery and having a similar rerupture rate. According to the data, percutaneous techniques can also result in fewer deep infections. Although we do not advocate one method over the other in the present article, we detail a modification of the percutaneous procedure suggested by Assal and colleagues² using the Achillon[®] device (Newdeal, Lyon, France).

The Achillon is an ingenious device inserted into the percutaneous inci-

sion and guided along the Achilles tendon. Two internal branches lie on the tendon stump, 1 branch on each side; these branches connect to a corresponding pair of external branches containing several apertures. These guide apertures allow the passage of a straight needle and suture directly through the tendon. Once the proximal and distal ends of the tendon have several sutures in them, tendon reduction is completed by tying corresponding pairs of sutures.²

Despite its clever design, the Achillon clinically has been found to lack the rigidity required to

be effective. The plastic material used in its construction becomes deformed in the confines of the anatomy, making the Achillon less than ideal for this procedure.

We suggest replacing the Achillon with a pair of standard ring forceps, commonly found in many operating rooms. The ring forceps are placed through the 1- to 1.5-cm incision and used to grasp the first end of the ruptured tendon. Absorbable sutures on a Keith needle are easily passed from one side to the other; through the ipsilateral ring, the Achilles, and the opposite ring; and finally out the far soft tissue (Figure, A). Multiple passes (usually 3 or 4) can be made. The forceps are then withdrawn, pulling the sutures out of the surrounding soft tissue, so that they remain only in the tendon (Figure, B). This step is then repeated for the second end of the ruptured tendon. The procedure is completed as described by the original authors, by tying the ruptured ends together and closing the skin (Figure, C).

We propose this method of Achilles tendon repair as a functional and inexpensive technique building on the work of Assal and colleagues.²

AUTHORS' DISCLOSURE STATEMENT

The authors report no actual or potential conflict of interest in relation to this article.

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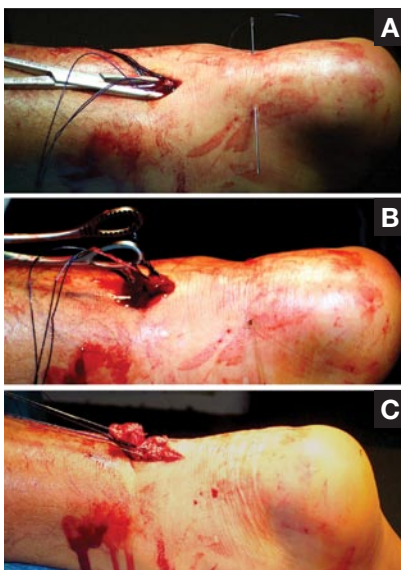


Figure. (A) Forceps are used to grip the distal end of the ruptured tendon as the needle passes through the set of rings. (B) Forceps are withdrawn from the incision, removing the sutures from the surrounding tissue, leaving them through the tendon only. (C) The 2 sets of sutures are drawn together and tied, reuniting the proximal and distal ends of the ruptured tendon. Note planar flexion with restoration of tension to distal end.

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