

## Surgical Treatment of Achilles Tendon Ruptures Using The Chigot Technique: Retrospective Study of 18 Cases

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### Abstract

### Original Research Article

The Achilles tendon is the largest and most resistant tendon of the human body. Its acute rupture has become very frequent, linked to a sudden acceleration effort, in the majority of cases during a sportive activity. Our work focused on 18 cases of achilles tendon rupture in the trauma and orthopedic department of Avicenne hospital in Rabat over a period of 7 years between January 2007 and December 2013. All our patients were treated surgically by the technique of a chigot. The long-term results, after a 36-month decline, were assessed according to the McComis criteria. They were 100% excellent.

**Keywords:** Achilles tendon, rupture, Surgery, Chigot.

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## INTRODUCTION

The rupture of the Achilles tendon is more and more frequent in the world and in our country because of the considerable development of the sports activities, the increase of their intensity and the absence of means of prevention.

## GOAL

In this retrospective work, we propose to specify the epidemiological, clinical, therapeutic and post-therapeutic features of this lesion.

## MATERIALS AND METHODS

This is a retrospective study of 18 observations recorded in the Trauma and Orthopedics Department of the Avicenna Hospital of Rabat over a period of 7 years between January 2007 and December 2013, with a decline between a minimum of 5 months and a maximum of 6 years and 7 months.

## RESULTS

Our patients were divided between 16 men (87.5%) and 02 women (12.5%), the average age was 36 years with extreme ages of 16 to 58 years. Sports accidents were responsible for Achilles tendon rupture in all our patients. The attack on the right side was

slightly dominant. The diagnosis was evident on clinical examination. All patients underwent open surgery using the Chigot technique.

No patient presented with skin infection. No cases of postoperative pain or iterative rupture occurred. Long-term results were assessed according to McComis criteria with an average follow-up of 3.5 years. Thus, we found 100% excellent and very good results.



Fig-1: Fresh rupture of the Achilles tendon. Plantar tendon intact



Fig-2: Appearance of repair after plasty by the small plantar

Table-1: Overall results in the literature

	Excellent Result	Good Result	Average Result	Bad Result
Lecetre (percutaneous tenorrhaphy)	44,85%	25%	25%	7,15%
Maffuli( open surgery )	61,5%	27,9%	11,5%	-
Our serie (Chigot)	100%	-	-	-

## DISCUSSION

In 1957, Chigot proposed the small plantar tendon as a means of strengthening the repair of Achilles tendon rupture.

The epidemiological studies of Möller et al. showed an incidence curve of Achilles tendon rupture with two peaks, one for the young and the other around 70 years old. The age of our patients varies between 16 and 58 years with an average age of 36, which is lower compared to some series. This can be explained by the presence of a young population in Morocco.

Male predominance is allowed in all series. It is 92.8% in our series. This male predominance is explained by higher sport activity among men (especially extreme sport).

Drug intake and tendinitis are implicated in the genesis of Achilles tendon rupture, which justifies the need for prevention and early management of tendinopathies. The incidence of drug intake and tendinitis remains low in most series of the literature. In our series, 4 patients had a history of taking corticosteroids.

All patients in our series had a break during a sports activity. The most common cause of Achilles tendon ruptures is represented by sport accidents, which has been reported in all series of the literature. The right side is slightly more affected in our patients, but this is very variable depending on the series.

No cases of infection or iterative rupture have been reported. The absence of skin complications was probably secondary to strict ambulatory follow-up postoperatively. However, cases of iterative rupture have been reported in the series of Lecetre *et al.* where there was 3.27% of iterative rupture after percutaneous tenorrhaphy or those Strauss which finds in its series 3.6% of rerupture in the surgical treatment.

No cases of residual pain have been reported in our patients. However, it is present in 1.6% of patients in the Lecetre series and en 27.44% of patients in the Mertl *et al.* We found in our study a sports recovery to 180 days on average. According to the literature, the average recovery is between 130 and 180 days regardless of the therapeutic management.

The test of the monopodal support allows to appreciate the strength of the triceps sural, In our series, monopodal support was possible in all our patients, which is consistent with the results of Boukhris and what is close to those of Rouvillain and Farizon.

## CONCLUSION

- Breaks of the Achilles tendon preferentially affect the young male athlete.
- The quality of the functional result is crucial for the resumption of the sport activity.
- The purely clinical diagnosis is the rule.
- Chigot surgical technique that we propose uses the tendon of the small plantar muscle, which remains an ideal material for the repair of the rupture of the Achilles tendon by taking advantage of its

solidarity, its length, its flexibility and its presence on the spot.

- The development of percutaneous and functional techniques has not yet led to the conclusion that treatment is superior to another.

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