

Surgical technique

Metacarpophalangeal joint arthroscopy in the fingers other than the thumb: Retrospective comparison of horizontal versus vertical traction

Arthroscopie des articulations métacarpo-phalangiennes des doigts longs : étude rétrospective comparant traction horizontale versus verticale

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Abstract

The goal of this study was to compare the advantages and disadvantages of horizontal versus vertical traction by reviewing a small series of metacarpophalangeal (MCP) joint arthroscopy in the fingers other than the thumb. Our series included eight patients operated with traction placed along the axis of the operated finger. In four cases, traction was applied horizontally and in the other four, it was applied vertically. Arthroscopy was performed using dorsomedial and dorsoradial portals. The fluoroscopy unit was placed either vertically or horizontally as required. The average duration of patient set-up was 17.75 min in the horizontal traction group and 32 min in the vertical traction group. The average tourniquet time was 56.75 min in the horizontal traction group and 71 min in the vertical traction group. Horizontal traction required an additional procedure that can potentially compromise surgical asepsis. Vertical traction was less comfortable for the surgeon and horizontal placement of the fluoroscope increased the risk of compromised asepsis. Overall, arthroscopy of the MCP joint of the fingers other than the thumb is an easy technique, indicated for trauma-related and chronic lesions, which may be best performed with horizontal traction.

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Keywords: Metacarpophalangeal joint; Arthroscopy; Joint lesions

Résumé

Le but de ce travail était de comparer les avantages et les inconvénients de la traction horizontale et de la traction verticale sur une série clinique de 8 cas d'arthroscopie de l'articulation métacarpo-phalangienne (MCP) des doigts longs. Notre série comprenait 8 patients opérés sous traction dans l'axe du doigt à opérer. Dans 4 cas, la traction était horizontale et dans 4 cas la traction était verticale. L'arthroscopie était réalisée alternativement par 2 voies dorso-médiale et dorso-radiale. Le cas échéant, le fluoroscope était installé verticalement ou horizontalement. La durée moyenne de l'installation était de 17,75 min dans le groupe traction horizontale et 32 min dans le groupe traction verticale. La durée moyenne du garrot était 56,75 min dans le groupe traction horizontale et 71 min dans le groupe traction verticale. La traction horizontale nécessitait une geste qui comportait un risque de faute d'asepsie. La traction verticale était moins confortable et la position horizontale de l'amplificateur de brillance augmentait les risques de faute d'asepsie. Au total, l'arthroscopie des MCP des doigts longs est une technique facile, indiquée dans des lésions traumatiques ou chroniques, qui peut être réalisée au mieux sous traction horizontale.

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Mots clés : Articulation métacarpo-phalangienne ; Arthroscopie ; Lésions articulaires

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1. Introduction

Metacarpophalangeal (MCP) joint arthroscopy was first described in 1979 [1]. Since then, a large number of publications have appeared dealing with thumb MCP joint arthroscopy [2]. On the other hand, only a few publications have featured the four other fingers, and only four of them included small clinical series [3–6]. Indications were either diagnostic procedures such as cartilage assessment [3] or synovial biopsy [7], or therapeutic procedures such as synovectomy [4,5,8], fracture fixation [6], and osteochondritis perforation [6]. Almost every study describes the use of vertical traction, except for one where no traction was applied [4].

The goal of this study was to compare the advantages and disadvantages of horizontal versus vertical traction in a small clinical series of MCP joint arthroscopy of the fingers (excluding the thumb).

2. Materials and methods

Every case of finger MCP joint arthroscopy carried out by five different surgeons between November 2013 and November 2014 was retrospectively included in the series. Thumb arthroscopy cases were excluded. Our series included eight patients with an average age of 31 years (from 16 to 48); all of them were male. The right hand was affected in six patients (Table 1).

Every patient was operated under regional anesthesia with a tourniquet. Chinese finger traps were used to apply traction along the axis of the finger (Fig. 1). In four cases, the traction was applied horizontally in a Leibinger™ 0730950 system (Fig. 2). In the other four cases, the traction was applied vertically in a Whippel Tower (Fig. 3). In all cases, the arthroscopy technique consisted of two-portal access to the MCP joint, one of them dorso-ulnar and the other, dorsoradial.

Table 1
Characteristics for the series of 8 patients operated by long finger MCP arthroscopy.

Patient (No.)	Gender (M/F)	Age (years)	Profession (M/S)	Dominant hand (R/L)	Affected side (R/L)	Affected finger (2–5)	Diagnosis
1	M	34	M	R	R	2	Fracture
2	M	21	S	R	R	2	Fracture
3	M	41	M	R	L	3	Locked finger
4	M	16	S	R	R	5	Fracture
5	M	17	S	R	R	2	Osteochondritis
6	M	28	S	R	R	3	Fracture
7	M	48	S	R	L	4	Fracture
8	M	44	M	R	R	2	Fracture

F: female; L: left; M: male; M: manual worker; S: sedentary worker; R: right.

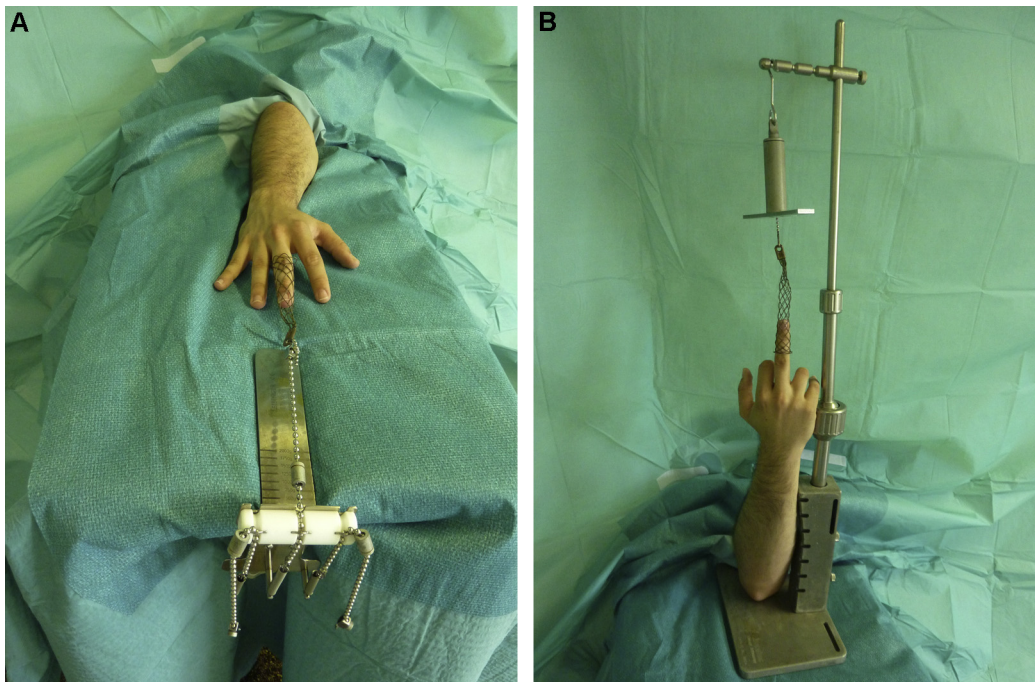


Fig. 1. Traction systems for finger MCP joint arthroscopy. Horizontal traction (screwed to the table) (A). Vertical traction (placed on the table) (B).

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