



# CONSERVATIVE TREATMENT OF SEVERE KNEE FLEXION CONTRACTURE IN TWO SEVERE HEMOPHILIA A PATIENTS WITH HIGH-RESPONDING INHIBITORS

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## INTRODUCTION

Knee flexion contracture is a common finding in patients with hemophilia and is the result of recurrent intra-articular and intramuscular hemorrhage. This complication affects the gait pattern and activities of daily living. Patients with inhibitor are more prone to develop articular contractures and progressive arthropathy. The usual treatment for severe cases of knee contracture with more than 30 degrees of flexion is surgical soft tissue release and/or extension osteotomy. Several complications of surgical treatment are described such as vascular compromise and scar tissue formation.

## METHODS

We describe our approach of two children with severe hemophilia A with high-responding inhibitors who developed flexion contracture and underwent conservative treatment with progressive extension and serial casts

**Case 1** was a 7-year-old patient with a 55 degrees flexion contracture of the right knee. Functional Independence Score in Hemophilia (FISH)<sup>1</sup> was graded as 22 at initial evaluation (Table 1). The first cast was applied after gentle manipulation under anesthetic sedation (Figure 1a,b). Wedging and serial casting were performed in the following weeks and cast was removed after 5 weeks. Flexion contracture was reduced to 25 degrees (Figure 2) and FISH was graded as 26 after treatment (Table 1). Haemostasis was achieved during the treatment with aPCC

Table 1. Case 1 Functional Independence Score In Hemophilia (FISH) before and after conservative treatment

	Before treatment	After treatment
<b>A. Self-Care</b>		
1. Grooming (0-4)	4	4
2. Bathing (0-4)	4	4
3. Dressing (0-4)	4	4
<b>B. Transfers</b>		
4. Chair (0-4)	3	4
5. Floor (0-4)	1	2
<b>C. Mobility</b>		
6. Walking (0-4)	2	3
7. Step Climbing (0-4)	2	2
8. Running (0-4)	2	3
<b>Total score</b>	<b>22</b>	<b>26</b>

**Case 2** was a 7-years-old patient with 85 degrees flexion contracture of the right knee and FISH graded as 17 before treatment (Table 2). Same protocol was used and, after serial casting, flexion was reduced to 28 degrees and FISH was improved to 22 (Table 2). This patient was under immune tolerance induction during this treatment. A radioisotopic sinovectomy with <sup>90</sup>Yttrium preceded by three weeks this procedure.

Table 2. Case 2 Functional Independence Score In Hemophilia (FISH) before and after conservative treatment

	Before treatment	After treatment
<b>A. Self-Care</b>		
1. Grooming (0-4)	3	4
2. Bathing (0-4)	2	4
3. Dressing (0-4)	2	3
<b>B. Transfers</b>		
4. Chair (0-4)	2	3
5. Floor (0-4)	2	2
<b>C. Mobility</b>		
6. Walking (0-4)	2	2
7. Step Climbing (0-4)	2	2
8. Running (0-4)	2	2
<b>Total score</b>	<b>17</b>	<b>22</b>

<sup>1</sup>Poonnoose PM, Manigandan C, Thomas R, et al. Functional Independence Score in Haemophilia: a new performance-based instrument to measure disability. Haemophilia. 2005 Nov;11(6):598-602.

Both patients were included in a program of intensive rehabilitation after orthopedic treatment. We observed no articular subluxation or other complications with this method.

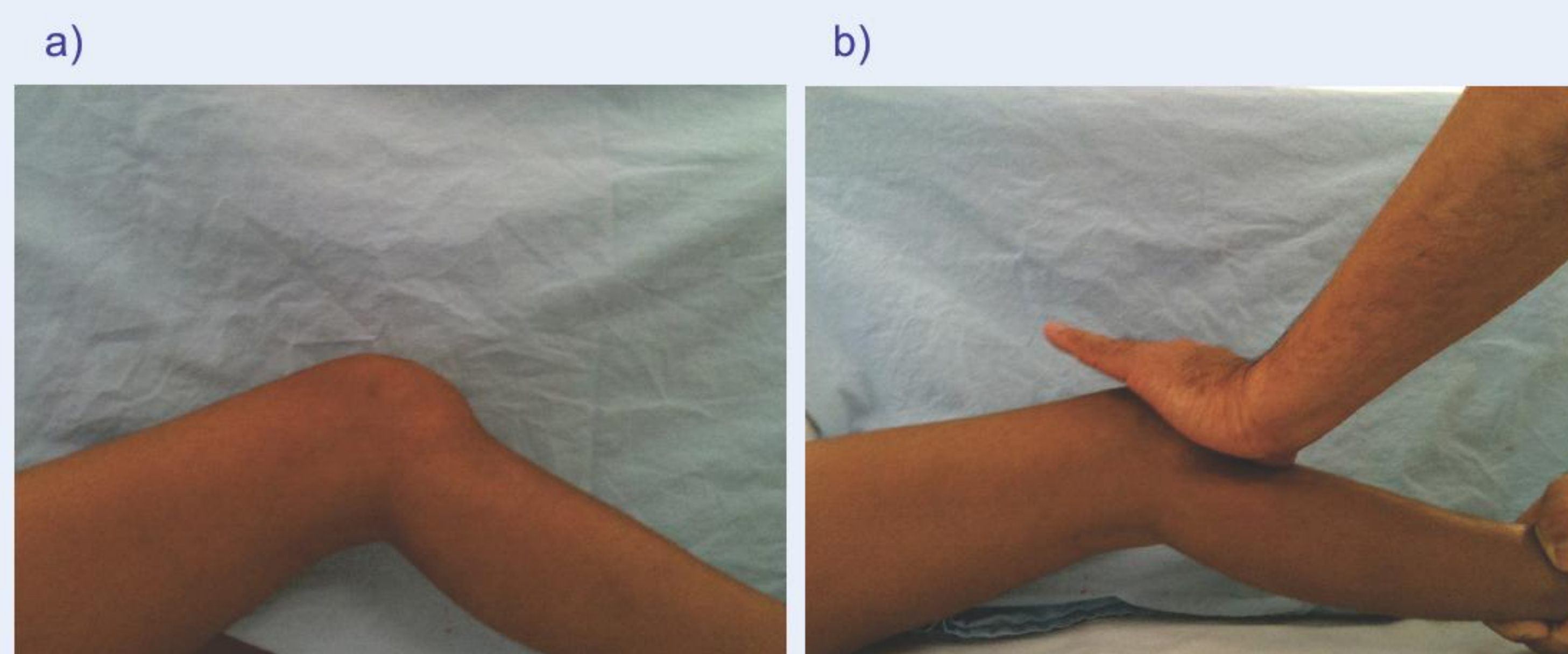


Figure 1. Case 1. Patient under anesthetic sedation (a), manipulation (b)



Figure 2. Case 1. Result after treatment with manipulation and serial casts of the right knee

## CONCLUSION

Conservative treatment of flexion knee contracture is a low morbidity procedure and is a good option specially in patients with inhibitors. So far we were not able to correct all the flexion contracture with this method in these patients. However, there was significant improvement in function and is possible to achieve a better correction with additional serial casts.

