

Arthroscopic Synovectomy for Hemophilic Arthropathy of Hemophiliacs in Taiwan

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Introduction

In hemophiliacs, recurrent hemoarthrosis may induce synovitis, cartilage destruction, epiphyseal overgrowth, fibrosis of periarticular structures, capsular fibrosis, joint contracture, and resulting in loss of range of motion, muscle strength, and resulting in boggy appearance or deformity of the index joint. Early treatment of hemophilic arthropathy may prevent deterioration of joint function. Arthroscopic synovectomy is a relatively simple, lesser traumatic procedure for hemophilic arthropathy and one of the options which may reduce the incidence of bleeding, pain, factor injection frequency, and improve joint function. However, the experience of and reports on arthroscopic synovectomy for hemophilic arthropathy in Asian countries are relatively limited than those from the West.

Results

All the patients were severe-type hemophiliacs, except case 9 was a victim of moderate-type hemophilia A. Average age : 23.6 ± 3.5 years old, ranging from 15 to 27.5. Average BMI : 22.0 ± 3.0, ranging from 17.7 to 26. Total 13 joints (4 knees, 4 elbows, 4 ankles, one shoulder) received surgery. Three patients received surgeries over 2 different index joints. The average duration of admission was 6.9 days, ranging from 5 to 8 days. All the joints got reduction of joint pain, frequency of bleeding and factor injection, and improvement of ROM after operation. No complications were found. Six joints (46%) got significant pain relief (3 elbows, 2 knees, one ankle) with a very good outcome. Another 7 joints got partial pain relief with residual pain on different location (3 ankles, 2 knee, one elbow and shoulder) with an improved outcome. Residual pain from concurrent early arthritis was confirmed on 2 elbows, 2 ankles and one shoulder. The mean sum of European MRI scale was 13.5 and 15.7 in the very good-outcome group and the improved-outcome group, respectively.

Materials and methods

From August 2011 to August 2013, there were 10 male Taiwanese hemophiliacs (8 hemophilia A, 2 hemophilia B) receiving arthroscopic synovectomy at Taipei Medical University Hospital and enrolled in this study, who had recurrent bleeding with chronic synovitis that did not respond to secondary prophylactic factor replacement, physiotherapy, and activity modification. Adequate factor replacement during and after surgical treatment. All patients had MRI evaluation before surgery. Following operation, all patients received prophylaxis with factor replacement and physiotherapy. Outcome data including index joint pain, the frequency of bleeding, and range of motion (ROM) were evaluated and analyzed.

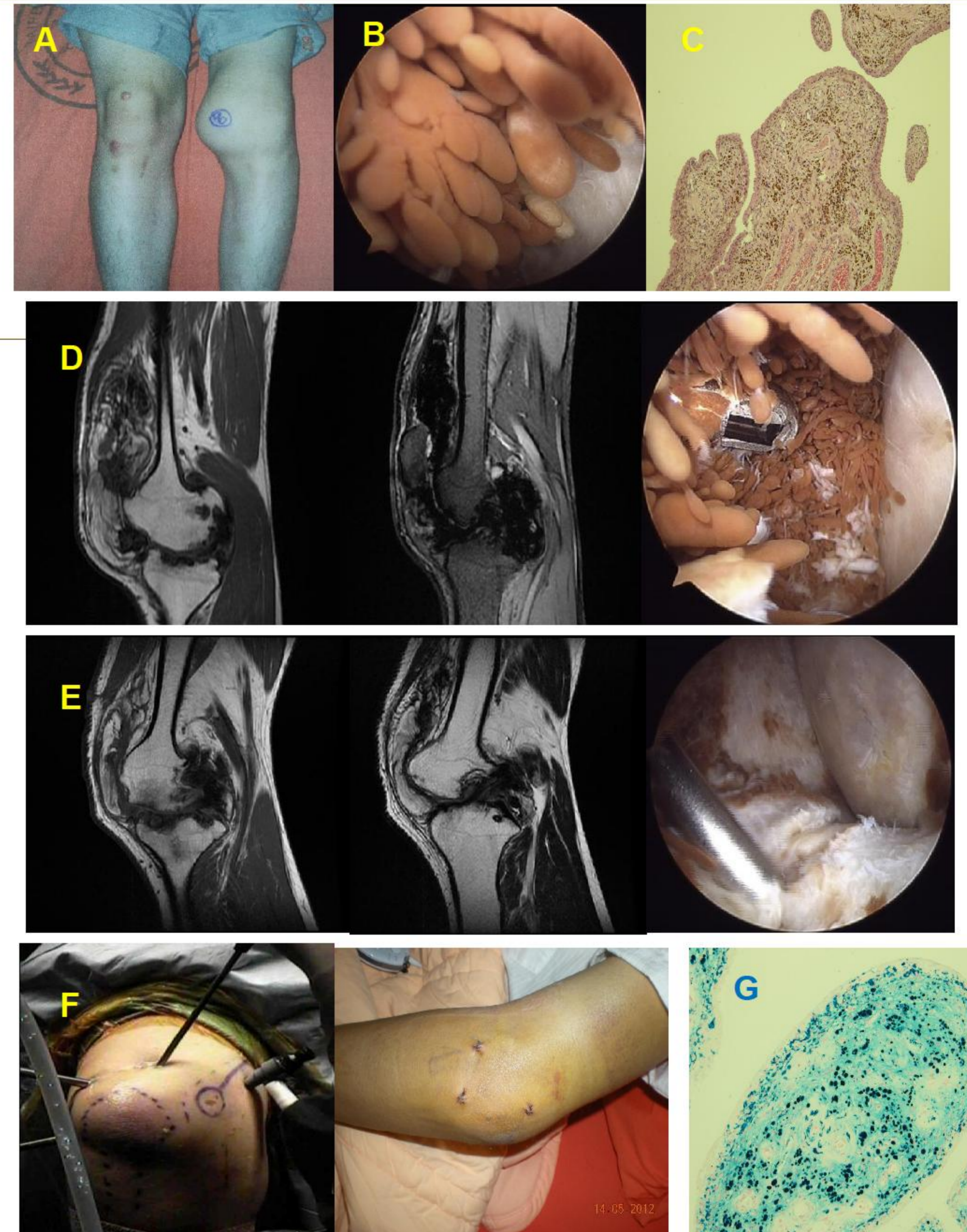


Fig. A. Target joint of left knee. B. chronic villous synovitis under arthroscopy. C. chronic synovitis with papillary hyperplasia and some hemosiderin under microscopy. D. MRI and arthroscopic images before synovectomy. E. MRI and arthroscopic images after synovectomy. F. Portal position and minimal wounds of elbow arthroscopy. G. Prussian blue stain (+)

Conclusion

This is the first report of Taiwanese hemophiliacs receiving arthroscopic synovectomy for hemophilic arthropathy. The effect of arthroscopic synovectomy included reducing affected joint pain and improved ROM. Concurrent early arthritis is the most common cause of post-synovectomy joint pain. Residual reactive synovitis is also common due to that some hypertrophic synovium is located at difficult sites for shaving. We suggest that synovectomy should be performed earlier before concurrent early arthritis develops.

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Table 1. Patient characteristics and surgical outcome of the 10 male hemophiliacs

P't	Age (Y/o)	Subtype	BMI	The index joint	Sum of European MRI scales	Pain score (before/ after OP)	ROM after OP	Outcome	Post-surgery pain and cause
1	23	A	20	Knee, L't	15	10 / 5	Improve	improve	Residual synovitis
2	24	B	23.5	Ankle, R't	16	7 / 0	Improve	Good	Nil
3	23	A	18.3	Elbow, left	16	10 / 4	Improve	Improve	Concurrent arthritis
4	27	A	26	Knee, R't	13	8 / 0	Improve	Good	Nil
5	22	A	25	Elbow, R't	14	8 / 2	Improve	Good	Concurrent arthritis
6	27	A	25.2	Knee, R't	16	8 / 3	Improve	improve	Residual synovitis
7	23	A	17.7	Ankle, L't	16	8 / 4	Improve	improve	Concurrent arthritis
8	15	A	20.7	Ankle, R't	16	8 / 4	Improve	improve	Residual synovitis
	-	-	20.7	Elbow, R't	7	8 / 0	Improve	Good	Nil
9	28	A	25.7	Shoulder, R't	16	10 / 4	Improve	improve	Concurrent arthritis
	-	-	25.7	Ankle, R't	15	10 / 5	Improve	improve	Concurrent arthritis
10	25	B	21.9	Elbow, L't	16	8 / 0	Improve	Good	Nil
	-	-	21.9	Knee, L't	15	8 / 2	Improve	Good	Nil