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Natural Course of Dislocated Healed Tuberculous Hip in a Child — A Case Report —

Myung-Sang Moon, M.D., F.A.C.S., Seung-Koo Rhee, M.D. and Won-Chul Lee, M.D.

Department of Orthopaedic Surgery, Catholic Medical College & Center, Seoul, Korea

=국문초록=

소아의 결핵성 고관절염에 동반된 병적 탈구의 자연정복 1례—자연 경과 관찰—

가톨릭 대학 의학부 정형외과학교실

문명상 · 이승구 · 이원철

과거에는 결핵성 고관절염은 관절 파괴가 심하여 섬유성 또는 골성유합이 일어남으로써 치유되는 것이 최상의 결과로 생각되었으나, 근래에는 조기에 발견하면 항 결핵제만으로 치료되는 경우도 있고 조금 진행된 경우에도 항 결핵제와 함께 적절한 관절 청소술(debridement)을 가하게 되면 후유증이 적은 관절을 얻을 수 있거나 또는 거의 정상적인 관절기능을 회복할수 있게 되었다. 그러나 결핵성 고관절염에 합병된 병적 탈구는 적어도 적절한 수술적 가료 없이는 자연정복이 일어날 것이 기대되지 않았다.

가톨릭 의과대학 정형외과에서는 3세된 결핵성 고관절염 환자에 항 결핵제 투여와 함께 관절 청소술(debridement)을 실시하고 이어 치료목적으로 석고로 고관절을 일정기간 고정하였으나 치료중 병발된 병적 탈구에 대하여(Fig. 1-a) 결핵이 치유된후 관혈적 정복 및 내번절골술을 권하였으나 이에 응하지 아니한 증례에 대해 결핵재발의 조기발견과 탈구된 관절의 운명을 관찰할 목적으로 10년간의 비정기적인 추적을 하였던바(Fig.1-2), 이 기간중 고관절 탈구의 자연정복이 일어남을 관찰할 수 있었다.

저자들은 본 증례를 통하여 소아의 결핵성 고관절염에 합병한 병적 탈구라도 결핵치료를 철저히 하고 통증이 없고 자유로이 움직일 수 있는 관절을 얻게될 수만 있다면 어느 정도 탈구의 자연정복이 일어날 수 있을 것으로 추정하였다.

INTRODUCTION

A few cases of spontaneous reduction of dislocated hips in children have been reported [2, 3, 4, 5, 6], but most of the case reports were concerned about the congenital dislocation of the hip[6] or suppurative arthritis of the hip in children[3, 4, 5], and one was subluxated hip due to the tuberculosis[2]. Sublxated or dislocated hip which developed particularly after infection was knowingly difficult to manage. To obtain a stable, mobile, congruous, and concentric joint was thought to be impossible by any means. Generally those hips are known to luxate further and finally lead to secondary coxoarthrosis.

A case of mobile luxated hip in a child after tuberculous infection of right hip which was treated for about 3 months initially by antituberculous medications and then by surgical joint debridement is presented.

To the best of author's knowledge this is the first reported case of postinfection luxated head being spontaneously and medially migrated to subluxation state during growth without any treatment over 10 years follow-up period.

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CASE REPORT

A three years old boy was examined by a

private practitioner for his painful right hip on end of April 1972. At the time he presented various symptoms and signs such as night sweat and cry, weight loss, painful hip, and wasting of right thigh muscles over 4 months duration. Triple antituberculous chemotherapy (S-M, INH, PAS) was started, and the hip was immobilized by cast for 6 weeks by the doctor. Then he was referred to the orthopedic clinic of St. Mary's Hospital, Seoul, on June 14, 1972. On referral cast was removed and he was thoughly re-examined.

On admission, his vital signs were within normal limits with his temperature 37.2° c orally. Laboratory results revealed a hematocrit of 33% with hemoglobin of 10.8gm, white blood cell count of 16,200, 34% polymorphonuclear neutrophils, 63% lymphocytes, 2% monocytes, and 1% eosinophils. The erythrocyte sedimentation rate was 44mm/hr. Acid-fast bacilli stain for the joint aspirate was positive. Results of urinalysis and chest roentgenogram were unremarkable.

Examination disclosed the adduction (10°) and flexion (30°) contracture of right hip with partial ankylosis. Marked muscle atrophy was noted in the affected thigh. Severe pain was elicited by passive motion.

Hip roentgenogram disclosed the partially destructed acetabulum and femoral head with marked osteoporosis of the bones around the hip. Femoral head was almost invisible by porosis. The diagnosis of tuberculosis of the right hip was reconfirmed.

Four days after admission he was submitted to joint debridement surgery through anterior iliofemoral approach, and then the hip was immobilized by one and half hip spica cast in 15° abduction and full extension. Antituberculous medication was continued postoperatively. He did very well after surgery and was discharged from the hospital 14 days after surgery. Wound healed per primum. He was strictly ordered to be followed regularly once a month at outpatient clinic. Three months after surgery the cast was removed and gradual active and passive hip motion exercise was allowed at bed by using a Thomas splint and Pearson's attachment. With this treatment there was quickly an improvement in the patient's condition. The temperature became steady, appetite improved and the boy gained weight. At 4 months postoperatively tubercuosis seemed to be arrested clinically. Pain and spasm had subsided in the hip. At the time on roentgenogram hip was found luxated in neutral hip position, and reduced in some degree on abduction and internal rotation (Fig. 1-a).

Although surgical treatment for the luxated hip was available and offered, it was refused at the time. As the capsular laxity was attributed as the casuse of the luxation, patient was asked at bed to keep the hip in abduction and inward rotation. He was then encouraged to mobilize and to start weight bearing as soon as possible. One year after surgery the boy was completely free from hip pain with regaining of full range of motion and gradual spontaneous medial migration of the femoral head. Mild limp persisted by Feb. 1974 (Fig. 1-c). Limp disappeared three and half years after surgery. Antituberculous medications continued totally for 1 year and 6 months.

Follow-up clinical and roentgen examinations were made at irregular intervals until 1982 over 10 years duration. Now he is completely asymptomatic clinically, though there is yet some subluxation and joint space narrowing(Fig. 2-c). Femoral head remodelled almost to normal without recurrence of tuberculosis.

DISCUSSION

Hip tuberculosis, though undoubtedly rarer than it was in Korea, still presents significant clinical problems. Early diagnosis and effective chemotherapy are the vital factor to save the joint. The management of this condition with antituberculous drugs with or without surgical treatment has been well covered in the litereture, but the residual anatomic

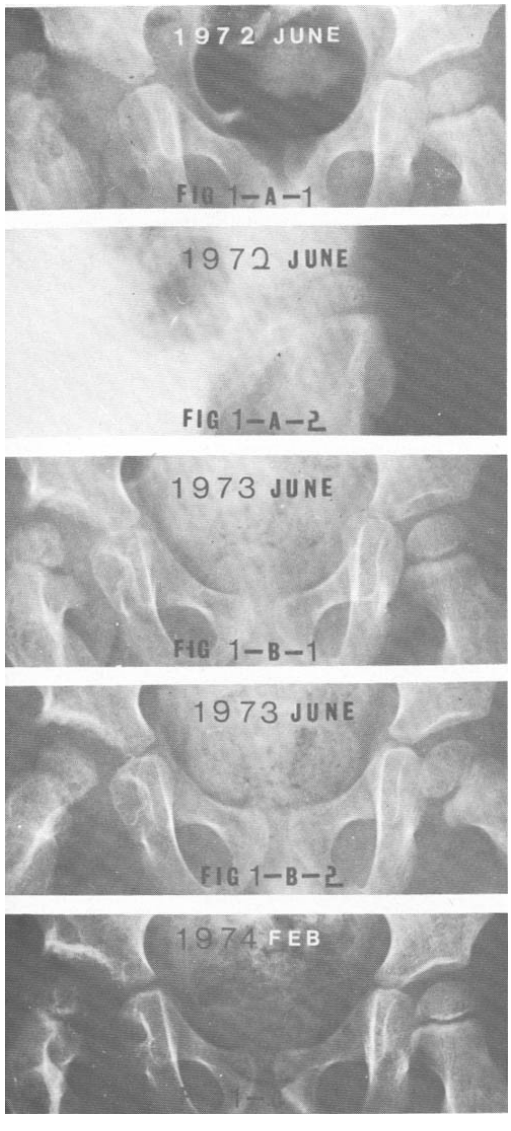

Fig. 1-a-1, 1-a-2, Roentgenograms taken on June 1972 showing the dislocation of right hip. Medial joint space (Tear Drop Distance, T.D.D.) was 50/10mm (right/left) with multiple cystic lesions on the epiphysis, metaphysis of the femur and medial aspect of ischium. and enlarged acetabulum by destructive changes.

Fig. 1-b-1, 1-b-2, & Fig. 1-c. Follow-up roentgenograms taken on June 1973 and Feb. 1974 demonstrates the subluxed hip (T.D.D. was 24/9 mm and 26/10mm), rarefied cystic lesions on metaphysis of the femur and sclerotic bnny spur on the acetabular roof.

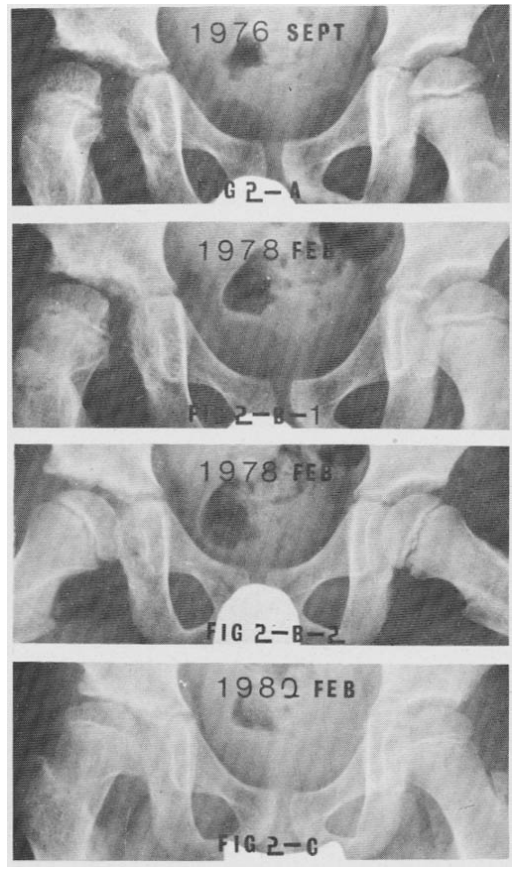

Fig. 2-a. Roentgenogram taken Sept. 1976 showing still slightly subluxed hip (T.D.D. was 16/9 mm) and head migrated more medially than before.

Fig. 2-b1, 2-b2 & Fig. 2-c Follow-up reontgenograms taken on Feb. 1978 and Feb. 1982 showing still some widening of medial joint space (T.D.D. was 15/10mm and 12/10mm) with disappearance of the initial multiple cystic lesions on epiphysis and metaphysis and ischium, and joint space narrowing and subchondral sclerosis of the right acetabular dome indicating the early osteoarthritic changes.

deformity such as subluxation or dislocation and it's treatment in children are very rarely documented. No comprehensive treatment program has been outlined.

The cause of lateral subluxation in the tuberculous hip is considered by authors to be caused by chronic synovitis, destruction of fe-

moral head and acetabulum. The postoperative anterior capsular laxity of the hip joint was listed as a cause of redislocation in the congenital dislocation of hip[7], but not listed as a cause in tuberculosis of hip after radical joint debridement by any author before. It was proved by this case(Fig. 1~2). Somerville[7] stated "if the postoperative capsular laxity as a cause of congenitally dislocated hip is transitory any form ot treatment involving rest in recumbency, or worse still splintage, will either aggrevate the condition or perpetuate it by making the muscle even more toneless and with the child lying in bed the leg will be in lateral rotation and the deformity may increase".

The child should be encouraged to mobilize and to start weight bearing as soon as pos sible. This will treat the laxity and also the dislocation. If the capsular laxity is persistent, anterior capsular reefing with the hip held in full medial rotation is suggested by him.

Spontaneous improvement of postoperative hip dislocation in the boy having hip tuberculosis to roentgenographically nearly normal without treatment can be attributed to early mobilization of hip. Since not all pathologically luxated hip become normal in the course of normal growth and development, efforts to detact the early deterioration is stressed to take the appropriate measure for residual or further luxation. Moon et al[1] recom mended the varisation osteotomy for early restoration of cephalocotyloid relationshipofthe subluxated hip secondary to hip tuberculosis in children if it is not refused. In this case unexpectedly femoral osteotomy was refused by parent. By this refusal there was an opportunity to follow the natural course of the case over 10 years. If there are relatively good preservation of articular cartilages, painless full joint motion and good muscles around hip after cure of the tuberculosis spontaneous reduction as a remodelling in the rapidly growing child can expected even in the secondarily established dislocated listed hip over a long period of time.

SUMMARY

Subluxation of hip is a common complication of the tuberculous hip even if it is properly treated in the past, but careful review of the English-language literature failed to identify a case having dislocation of the hip after the joint debridement of the tuberculous hip and it's natural course. We therefore reported on a three-year-old boy having tuberculous hip who developed dislocation after joint debridement and who was followed over 10 years duration. During the period of observation the luxated hip was spontaneously improved by gradual medial migration of the head year after year to nearly normal.

The postoperative transitory capsular laxity was attributed as the cause of hip dislo cation in the case.

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