

## Bilateral discoid medial menisci with abnormal attachment to the anterior cruciate ligament—a case report

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An 11-year-old schoolgirl was first seen in May 1997 with pain and swelling in her right knee and inability to extend the knee since 2 years. Her complaints had started following a valgus and internal rotatory strain of the knee while running.

Clinical examination revealed wasting of the quadriceps, fullness and tenderness at the medial joint line and painful thudding on the medial aspect with McMurray's maneuver. There also was a fixed flexion deformity of 20° with full flexion possible beyond. Our clinical diagnosis was that of an old traumatic tear of the medial meniscus. The opposite knee was normal, but for occasional clicks on the medial side with McMurray's test.

The routine laboratory tests were normal. The radiographs of the right knee were initially interpreted as normal, but, looking back, there definitely was medial joint space widening, with flattening of the medial tibial condylar epiphysis not only on the right side but also on the left. MRI poorly visualized the medial meniscus, particularly the posterior horn, probably due to a traumatic tear.

Arthroscopy of the right knee was carried out in June 1997. We found a complete discoid medial meniscus with its anterior horn continuous with the anterior cruciate ligament at the tibial attachment. There was also a mid-substance horizontal cleavage tear, which communicated with the joint cavity through a rent in the superior surface of the meniscus. Since the peripheral rim of the meniscus was stable, a partial meniscectomy with re-shaping was done. The abnormal attachment was left alone.

Postoperatively, continuous below-knee skin traction with 2 kg weight was applied to the right lower leg to correct the fixed flexion deformity. Quadriceps strengthening and knee-roll exercises were also instituted. At the end of 3 weeks of trac-

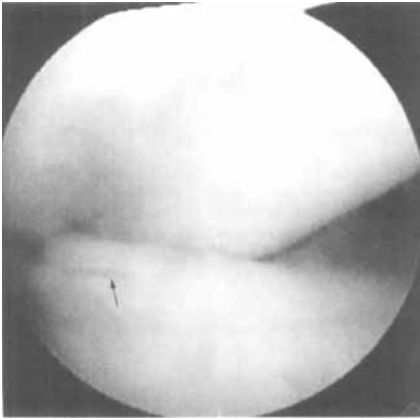
tion, a cylindrical splint with straps to hold the knee in maximum possible extension was prescribed. It was removed only to exercise the knee.

In the light of the arthroscopic findings, the MR images were reviewed and now the slab-like discoid meniscal shadow was obvious, especially in the coronal sections. The similarity in the radiological appearance of the knees alerted us to the possibility of this being a bilateral case. Therefore, a MRI of the left knee with special cuts to demonstrate an anomalous linkage between the medial meniscus and the ACL was made. Indeed, the sagittal and coronal sections revealed the slab-like shadow of a discoid medial meniscus while special oblique cuts showed a probable connection between the medial meniscus and the ACL. This could not be confirmed arthroscopically, however, because there was no indication for surgery.

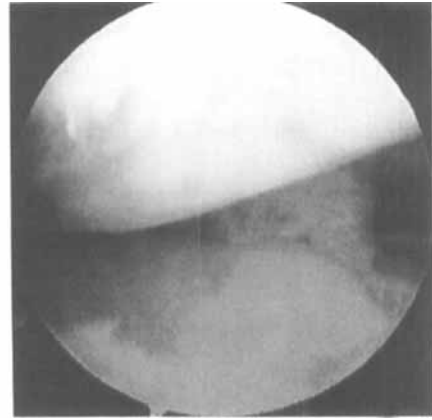
When the patient was discharged 1 month after surgery, her knee was normal, but for a flexion deformity of 5°. She was advised to continue using the splint and doing the exercises.



Medial joint space widening with flattening of the medial tibial condylar epiphysis.



Complete discoid medial meniscus with its anterior horn continuous with the anterior cruciate ligament at the tibial attachment with a rent in the superior surface of the meniscus.



Appearance of the discoid meniscus after partial medial meniscectomy.



MRI showing the medial discoid in the right knee. MRI findings of the left knee were identical.



MRI section showing the attachment of the medial meniscus to the ACL.

The patient was last seen 8 months after surgery. She had regained full extension of the right knee and the only reminders of the past pathology were quadriceps-wasting and the painless mild thud on the medial aspect of the knee with McMurray's maneuver. The left knee continued to be asymptomatic.

## Discussion

Discoid medial menisci are rare, unlike discoid lateral menisci (Jeannopoulos 1950, Dickason et al. 1982, Comba et al. 1985, Silverman et al. 1989, Lowenberg and Feldman 1993, Auge and Kaeding

1994, Kim et al. 1995). To our knowledge, only 4 cases of bilateral discoid medial menisci have been reported (Murdoch 1956, Dickason et al. 1982, Auge and Kaeding 1994, Kim and Choi 1996). The case described by Kim and Choi (1996) was similar to ours, i.e., bilateral discoid medial menisci with anomalous attachment to the ACL; only their patient had a meniscal cyst and not a tear.

During arthroscopy, we guessed that the patient's complaints were due to the torn discoid medial meniscus and not to its anomalous attachment. Therefore, we dealt with the discoid meniscus only and left its abnormal insertion alone. There is some disagreement over the role of the

latter anomaly in the production of symptoms and the need to correct it (Santi and Richardson 1993, Kim et al. 1995, Kim and Choi 1996). Fortunately, we did not have to regret our on-table decision since our patient obtained complete relief of symptoms.

Pain, swelling, and inability to extend the knee are some of the common complaints associated with medial discoid menisci, even in the absence of an anomalous attachment to the ACL and are relieved by treating the meniscal anomaly (Smillie 1948, Jeannopoulos 1950, Murdoch 1956, Riachi and Phares 1963, Weiner and Rosenberg 1974, Resnick et al. 1976, Dickason et al. 1982, Comba et al. 1985, Silverman et al. 1989, Lowenberg and Feldman 1993, Auge and Kaeding 1994, Kim and Choi 1996). We chose partial meniscectomy and reshaping instead of complete removal of the meniscus, keeping in mind the importance of the menisci in the normal functioning of the knee joint (Sisk 1992). Most surgeons now prefer reshaping, provided the peripheral attachment is stable, to avoid the long-term complications of total meniscectomy (Silverman et al. 1989, Lowenberg and Feldman 1993, Auge and Kaeding 1994, Kim and Choi 1996).

Radiographic findings are uncommon in cases of medial discoid menisci (Dickason et al. 1982). However, our findings of medial joint space widening and flattening of the medial tibial condylar epiphysis have been mentioned before (Cave and Staples 1941, Resnick et al. 1976, Lowenberg and Feldman 1993). Whether these changes are permanent or reversible only a longer follow-up can tell (Resnick et al. 1976).

Although MRI is the best non-invasive diagnostic tool available for detecting meniscal pathology (Silverman et al. 1989, Lowenberg and Feldman 1993, Auge and Kaeding 1994), from our and other reports it is obvious that it is not yet foolproof (Weiner and Rosenberg 1974, Sisk 1992). Finally, arthroscopy is essential to confirm and treat the pathology.

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