

# CONGENITAL RUDIMENTARY MEDIAL MENISCUS – REPORT OF A CASE OF DEVELOPMENT ARREST OF MEDIAL MENISCUS

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## ABSTRACT

We present an unusual case, where the medial meniscus does not coincide with the embryological development of the formation of a discoid cartilage. A fairly, careful perusal of English literature since 1945 to date makes us feel that the following case merits recording.

The meniscus had a normal anterior horn attached to the intercondylar area, in front of the anterior cruciate ligament. Medially, it was attached to the capsule and the condylar surface of the medial tibial plateau. The posterior horn was rounded, smooth, and floating free of any attachments. It was approximately 2 cms in length, semilunar in shape, and extended posteriorly up to the anterior margin of the medial collateral ligament. The rest of the medial tibial plateau had no other protective covering.

**Keywords:** Medial semilunar cartilage, Rudimentary medial meniscus, Discoid cartilage, Developmental arrest of medial semilunar cartilage, Congenital anomaly of medial meniscus

SINGAPORE MED J 1990; Vol 31: 189 - 190

## INTRODUCTION

Discoid cartilage was first described by Young in 1889, and for long, was found affecting only the lateral semilunar cartilage, till 1930 when Watson Jones (1) described a ring shaped, medial cartilage in a thirty-four year old man, with a clicking at the inner side of his knee joint, who had no prior history of trauma. Later Cave and Staples (1941) (2) described two more cases; Dwyer and Taylor (1945) (3) described one case and finally Smillie (1948) (4) described yet another case of discoid medial cartilage. A similar specimen was later demonstrated in 1952 in a cadaver by Basmajian (5). In 1958 James et al (6) reported another similar case in the left knee of a woman aged twenty-seven; and

simultaneously David et al (7) described two more cases. Lastly, in 1963, Riachi and Phares (8) reported a case almost similar to the one we are describing now.

But to date, we could not gather any information in English literature to fit the exact description of the medial semilunar cartilage which we describe here. It does not fit into the group of "Discoid Cartilage" as described by all the above authors.

## CASE REPORT

The patient, a man of twenty-five was admitted in early July 1988, with a complaint of recurrent, painless left knee effusions, and occasional history of "give-way" of the left knee joint, for the past five years.

The first episode of "give-way" feeling in the knee was during a game of soccer five years earlier. He had no history of pain, locking or click in the knee either. Subsequently, he developed a painless effusion in the same knee over the period of the next two days, which gradually subsided over a period of the next ten to twelve days, following complete bed rest, and application of a crepe bandage over the knee.

Later, he became conscious of frequent episodes of "give-way" every time he played soccer or even after jogging for about a kilometre. Over the period of five years, he had about twenty to twenty-five such episodes. He also became aware that his quadriceps had started to waste gradually for the past one year or so.

He sought medical advice on many occasions. Repeated radiological examinations were normal. He had been advised regular quadriceps exercises and application of crepe bandage over the knee, whenever similar episodes occur, and during a game.

On physical examination, there were quadriceps

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wasting, minimal effusion and slight tenderness over the medial joint line of the left knee. There were no other findings of meniscal injury. On these findings a clinical diagnosis of a partial tear of medial semilunar cartilage was made.

A diagnostic arthroscopy on the left knee examination was then carried out under general anaesthesia (Fig 1 & 2). An abnormal, rudimentary semilunar shaped medial cartilage approximately two centimetres in length was seen. The anterior horn was normal. It was attached to the intercondylar area, in front of the anterior cruciate

Fig 1

**Diagrammatic representation of the congenital rudimentary medial meniscus as seen during arthroscopic examination**

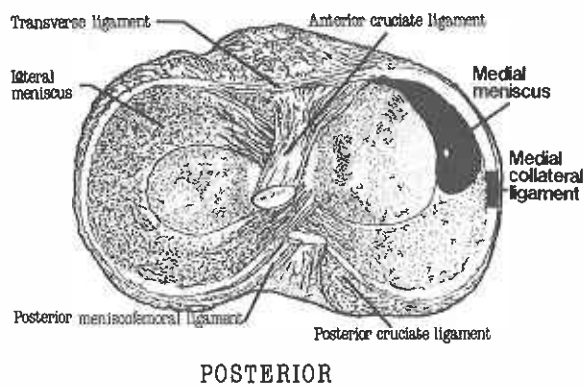
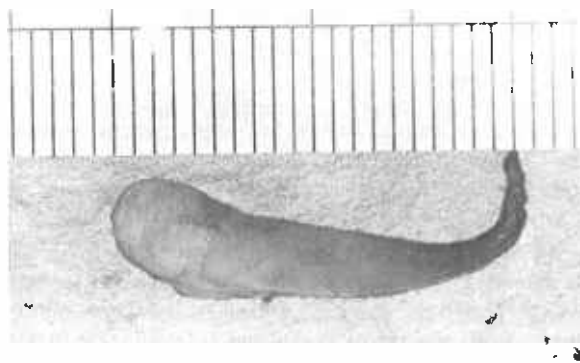


Fig 2

**The medial meniscus after menisectomy**  
Scale : 1 division : 1mm



**REFERENCES**

1. Watson-Jones, R. Specimen of Internal Semilunar Cartilage as a complete disc: Proceedings of the Royal Society of Medicine (Section of Orthopaedics) 1930; 23:588.
2. Cave EF, Staples OS: Congenital Discoid Meniscus: Am J Surg 1941; 54:371.
3. Dwyer F, Taylor C: Congenital Discoid Internal Cartilage: Br Med J 1945; 11:287.
4. Smillie IS: The Congenital Discoid Meniscus: J Bone Joint Surg 1948; 30B:671.
5. Basmajian JV: A ring shaped medial semilunar cartilage: J Bone Joint Surg 1952; 34-B:638.
6. James AR, Tough ICK, English TA: Congenital Discoid Cartilage: J Bone Joint Surg 1958; 40B:262.
7. David A, Burnley R: Two Cases of Discoid Medial Cartilage: J Bone Joint Surg 1958; 40B:268.
8. Riachi E, Phares A: An unusual deformity of the medial semilunar cartilage: J Bone Joint Surg 1963; 45B:146.

ligament. Medially the meniscus was attached to the capsule and the condylar surface of the medial tibial plateau. The posterior horn was freely floating, without any attachments on the tibial plateau. It has a rounded and smooth margin and extended to the anterior margin of the medial collateral ligament (arthrotomy finding). The rest of the superior surface of the medial tibial plateau was devoid of any protective cartilage of fibrous tissue lining. Both the articular surfaces of the medial femoral condyle and tibial condyle were directly in contact with each other, and the articular cartilage had a normal appearance. There were no tears in the semilunar cartilage. The lateral semilunar cartilage was normal. The cruciate ligaments were normal.

An arthrotomy was performed, and the medial semilunar cartilage removed. Recovery was uneventful. Exercises to strengthen the quadriceps were prescribed. After six weeks, patient started playing soccer once again. To date, he has not experienced his old complaints of "give-way" and effusion.

**DISCUSSION**

It has been well documented that the occurrence of discoid cartilage is due to the persistence of the foetal state and the shape of the normal cartilage is the result of gradual absorption, during the latter half of foetal life, of the central part of an originally complete plate (4).

Kaplan (1955) was unable to accept Smillie's (4) theory that the discoid cartilage is the result of arrest of development. For, according to his study, the fibrocartilages of the knee do not present at any phase of foetal development a disc-like appearance, either on the lateral or medial side (6). Hence on the basis of Kaplan's and Smillie's studies, it is not surprising that numerous examples of adult cartilage are seen in which developing is incomplete, and the form varies from a disc to the normal crescent-shaped cartilage. This is clearly our case where the cartilage has the normal adult crescent shape but its normal growth is arrested sometime during its development phase due to certain unknown aetiological factors.

This case highlights one of the various congenital anomalies. In its rudimentary form, the semilunar cartilage can mimick an injured meniscus in an adult without any history of injury.

**ACKNOWLEDGEMENT**

We are extremely grateful to Cik Ramlah of the Photography Department, Faridah of the Graphic Department and Noorlela of the Academic Department for their assistance in this manuscript preparation.