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Meniscal band: An anomaly on lateral meniscus

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Abstract
We present a case of abnormal meniscal band of lateral meniscus in a 24-year-old female presented to us with pain on knee following a traumatic incident. Arthroscopic resection of abnormal band relieved her symptoms. Although a less common encountered abnormality, symptomatic patients can be successfully treated with surgical intervention.

Keywords: Knee, arthroscopy, meniscus

Introduction
Anatomical variations associated with lateral meniscus are quite common. There are different kinds of anomalies described in literature with discoid meniscus being the most common [1]. A higher incidence of these anatomical aberrations is seen in the Asian population [2]. In a review of lateral meniscus variants, abnormal bands involving the lateral meniscus are extremely rare with only two published reports [3, 4]. This article aims to describe an abnormal band of the lateral meniscus of the knee and its successful treatment.

Case report
A 24-year-old female presented with right knee pain which had begun 3 months before the presentation, gradually worsened. She had no significant trauma to the affected limb. She described her symptoms as an episodic, poorly localized discomfort felt on the outer aspect of right knee which worsened on attempted fast walking and climbing stairs. She gives no history of any giving away sensation/locking episodes.
On examination, she had no joint effusion or joint line tenderness. A McMurray's test was positive for lateral meniscus. All other clinical examination, the Lachmnan, stress tests, patellofemoral injury and ligamentous laxity was negative. She had a fairly good range of motion (0-120). A routine radiographic evaluation was insignificant. Magnetic Resonance Imaging of right knee was inconclusive for any major intraarticular/extraarticular pathology except for the presence of abnormal bands in the posterior aspect of lateral meniscus (Fig 1).
A diagnostic arthroscopy, using a 30° arthroscope was performed through standard anterolateral and anteromedial portals. She had a normal patellofemoral and medial compartment. On the lateral compartment, an abnormal band was noticed extending from the inner edge of body to the posterior horn of the meniscus (Fig 2 A, B). A pristine lateral meniscus, on probing showed multiple fenestrated bands between the peripheral margin of meniscus and the underlying tibia (Fig 3 A, B). The presence of abnormal bands both above and beneath the lateral meniscus was restricting the normal mobility of the lateral meniscus. An arthroscopic debridement and removal of the abnormal bands was performed (Fig 4 A, B). Post-operative period was uneventful with complete relief of symptoms and a good range of movement.

Discussion
During the intrauterine growth, the meniscus evolves as a specialized structure around 8th week of gestation [5]. It undergoes remarkable morphological changes during the intrauterine life which becomes gradual after birth [6]. The lateral side of knee joint is more prone for the anatomical anomalies [7]. Among the numerous anatomical malformations of the lateral meniscus, most common is the discoid meniscus followed by ring [8], accessory [9], and double layered meniscus [10]. Most of these variants remain asymptomatic and are incidental findings; very few in some instances can be symptomatic and may require intervention.
Giordano B [3] clearly described the difference between an abnormal band and double layered anomaly in a 45-year-old non-Asian patient.

An earlier case report on the abnormal bands of lateral meniscus in two Asian patients by Lee B I [4] showed characteristic shape and attachments. The findings in our case was similar to these observation, as the band was thin, less mobile and narrow with the characteristic serpentine shape. The attachment of the abnormal band was to posterior horn and inner edge of posterior aspect of meniscal body. We have an additional finding in our case report in the form of broad shelf like band with fenestrations attached to the undersurface of lateral meniscus and tibia which have not been described previously.

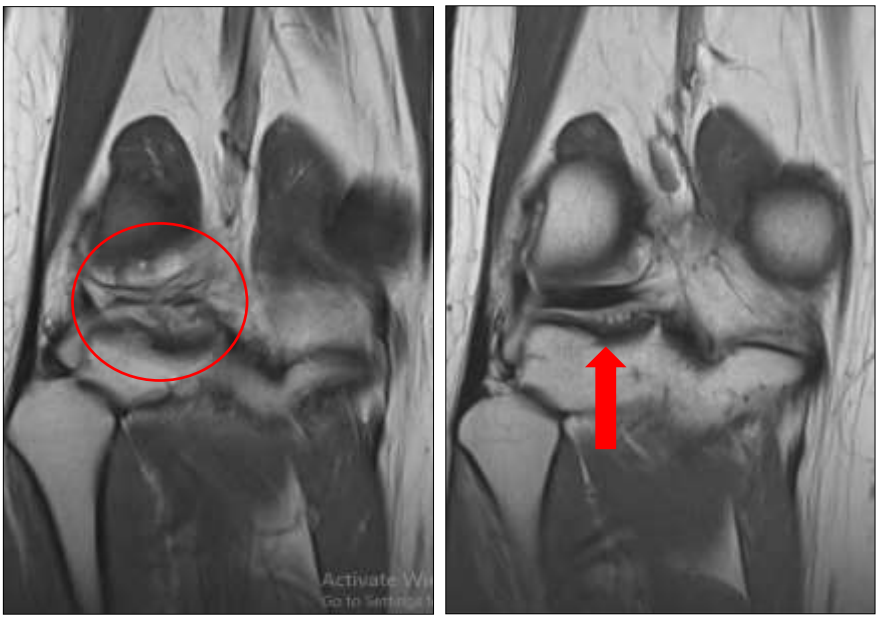

Fig 1: MRI image of right knee showing abnormal band on posterior aspect of lateral meniscus both above (circle) and beneath (red arrow) the meniscus

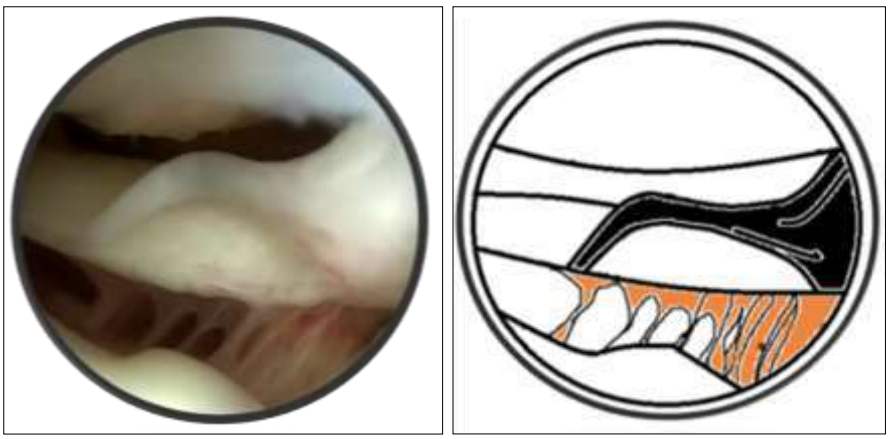

Fig 2 A, B: Arthroscopic view of lateral compartment of knee showing abnormal bands above and beneath the lateral meniscus. BA schematic representation of abnormal bands

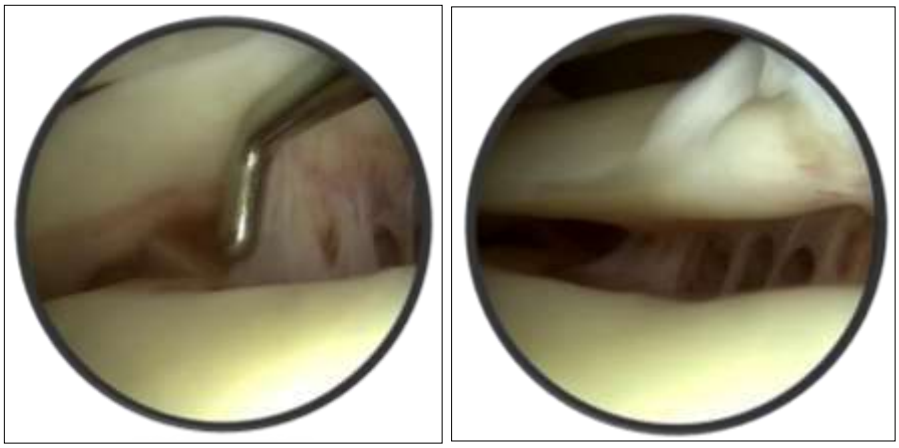

Fig 3 A, B: Probing and lifting the lateral meniscus, showing bands beneath the meniscus B. Attachment of the band to undersurface of peripheral margin of meniscus and tibia

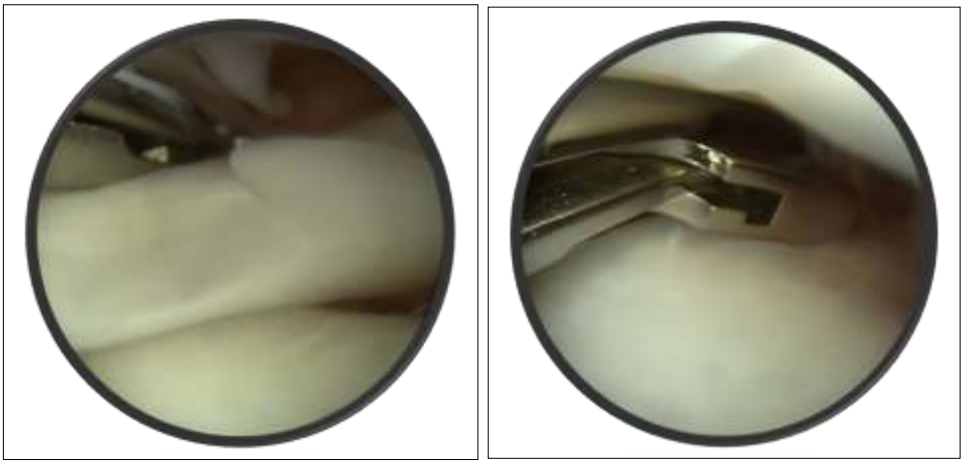

Fig 4 A, B: Arthroscopic debridement and excision of the abnormal band

Conclusion

Abnormal meniscal band is a rare incidental finding. This is the first study presenting an anomalous band between tibial surface and undersurface of lateral meniscus in addition to an abnormal band on superior surface of the meniscus. Recognition of these anatomic variants can be beneficial in symptomatic cases.

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