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The Occurrence of Spontaneous Osteonecrosis after Medial Meniscal Posterior Root Tear Associates with Meniscal Extrusion

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Summary:

Of 41 patients with spontaneous osteonecrosis of medial compartment of the knee, 27 (65.9%) had a medial meniscal posterior root tear. The extrusion of medial meniscus in the patients who had both of medial root tear and spontaneous osteonecrosis was significantly greater than other groups. Occurrence of spontaneous osteonecrosis after meniscal root tear associates with meniscal extrusion.

Abstract:

Introduction

There are various theories describing the cause of spontaneous osteonecrosis of the knee. Previous studies reported a high association of meniscal pathology with spontaneous osteonecrosis of the knee, but a few studies described the presence of tear to the posterior meniscal root.

The purpose of this study was to determine the frequency of occurrence of spontaneous osteonecrosis of the knee in patient with medial meniscal posterior root tear, and to evaluate degrees of medial meniscal extrusion with spontaneous osteonecrosis.

Materials And Methods

In 2014, 923 patients who had the symptom of knee joint underwent MRI in our hospital and were retrospectively reviewed to confirm medial meniscal posterior root tear and spontaneous osteonecrosis. There were 75 patients (59 women and 16 men) who met the criteria and were included in the study. On mid coronal MR images, extrusion of the medial meniscus was quantified in millimeters.

Results

There were 14 patients (11 women and 3 men) who had spontaneous osteonecrosis without medial meniscal root tear. Their mean age was 67.6 years (44 to 80). The locations of osteonecrosis were 10 on medial femoral condyle, 2 on medial tibial plateau and 2 on both. The mean meniscal extrusion was 2.9 mm.

There were 34 patients (28 women and 6 men) who had medial meniscal root tear without spontaneous osteonecrosis. Their mean age was 61.3 years (45 to 78). The mean meniscal extrusion was 4.0 mm.

There were 27 patients (20 women and 7 men) who had both of medial meniscal root tear and spontaneous osteonecrosis. Their mean age was 63.5 years (29 to 80). The locations of osteonecrosis were 15 on medial femoral

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condyle, 11 on medial tibial plateau and 1 on both. The mean meniscal extrusion was 4.8 mm.

There were not statistically significant differences in age between the 3 groups.

There were significant differences in degrees of meniscal extrusion between the 3 groups. ($P < 0.05$)
Of 41 patients with spontaneous osteonecrosis of medial compartment of the knee, 27 (65.9%) had a posterior medial meniscal root tear

Conclusion

Tears of posterior root of the medial meniscus often were present in patients with spontaneous osteonecrosis of the knee. The extrusion of medial meniscus in the patients who had both of medial root tear and spontaneous osteonecrosis was significantly greater than other groups. Occurrence of spontaneous osteonecrosis after meniscal root tear associates with meniscal extrusion.