Case Report

Kim lesion of the shoulder in a young adult: Case report✩,✩✩

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A R T I C L E   I N F O

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A B S T R A C T

Kim lesions are superficial tears at the junction between the posteroinferior glenoid cartilage and the labrum, but without complete labral detachment. They are uncommon injuries, seen in active adults in association with overhead activities such as basketball and volleyball. The authors present a case of a 20-year-old adult female complaining of right shoulder pain following a softball-related injury. The patient underwent magnetic resonance arthrography and was diagnosed with a Kim lesion of the right shoulder. This is a rare lesion that warrants recognition because, if untreated, it can lead to persistent posterior shoulder instability.

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Introduction

A Kim lesion is a concealed tear at the posterior glenoid chondrolabral junction accompanied by a concealed partial detachment of the deeper portion of the labrum from the glenoid rim. Arthroscopically, the deep partial detachment is may be appreciated when the labrum is probed, but can also be visualized pre-emptively by magnetic resonance imaging (MRI). The lesion is named after orthopedic surgeon Seung-Ho Kim who first described it in 2004. Posterior inferior directed forces, usually sustained during overhead activities such as playing basketball or volleyball, stress the labrum and are typical causes of this injury. We present a case of the Kim lesion in a young adult female.

Case report

A 20-year-old female complaining of chronic right shoulder pain stemming from a softball-related injury was referred to an outpatient radiology office for MR arthrography. The patient had no contributory medical history. MR arthrography
demonstrated contour irregularity of the labrum at its junction with the joint capsule along the posteroinferior glenoid, as well as tiny, cyst-like accumulations of contrast material between the glenoid and the deep aspect of the labrum (Figs. 1–3). The labral tissue in this area was somewhat flattened (Fig. 3), but there was no apparent complete labral detachment.

At arthroscopy, initial examination demonstrated only some surface damage to the labrum. However, probing of the chondrolabral junction revealed a detachment of the labrum from the glenoid rim. The lesion was further delineated by incising. The arthroscopic features were felt by the surgeon to be consistent with a Kim lesion.

**Discussion**

The Kim lesion, classically, is a tear at the junction between the posteroinferior glenoid cartilage and the superficial aspect of the labrum (ie, the inner portion of the labrum in contact with the glenoid cartilage). This tear, which is not a complete labral avulsion, has been called a “marginal crack” [1]. Concurrently, the deeper portion of the labrum (ie, the more outer or intrasubstance portion not visible to the arthroscope, and to which the inferior glenohumeral ligament attaches) is torn at its junction with the glenoid. Because some intact labral tissue superficial to the marginal crack remains attached to cartilage and because the labrum may not be displaced relative to the glenoid, the detachment only becomes apparent upon probing with the arthroscope.

The Kim lesion is due to a posteriorly and inferiorly directed force typically experienced in young, active individuals performing overhead activities [1–3]. These forces stress the deep inferior portion of the labrum, where the inferior glenohumeral ligament attaches, and lead to tearing of the posterior labrum and detachment of its deep portion from the glenoid, initially sparing the chondrolabral junction. However, over time, a “marginal crack” at the chondrolabral junction can
develop from repetitive posterior subluxation [1]. The Kim lesion is usually limited to the posteroinferior quadrant of the glenoid. The most common presentation is shoulder pain following repetitive overhead activity. Our patient had a slightly atypical history (softball), and her injuries included sites of labral tearing separate from the Kim lesion, not discussed in this presentation.

Characteristic MRI features of a Kim lesion may include incomplete avulsion of the posterior labrum, labral flattening, and an intact relation of the glenoid cartilage and posterior labrum [1,2]. MR arthrography can show contrast between the glenoid and labrum without labral displacement. Glenoid hypoplasia was initially described to be associated with Kim lesions [2]. However, Smark et al later found no significant differences in glenoid version, chondrolabral version, glenoid depth, or labral height when comparing Kim lesion shoulders to a control group [3]. Our presented case is consistent with Smark et al’s findings, as it does not display any glenoid or chondrolabral dysplasia, aside from slight labral flattening. However, we provide an illustration of the Kim lesion in conjunction with the glenoid hypoplasia originally thought to be associated with this entity; this companion illustration also demonstrates the general anatomy of a Kim lesion (Fig. 4).

It is important to recognize the Kim lesion, as failure to do so may result in constant shoulder instability [1]. Treatment includes converting this incomplete lesion to a complete tear and repairing it with a suture anchor, often accompanied by shifting of the posterior capsule or of both the posterior and inferior capsule [2].

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