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Titel des Beitrags: Balloon osteoplasty--a new technique for minimally invasive reduction and stabilisation of Hill-Sachs lesions of the humeral head: a cadaver study.

Abstract: Traumatic shoulder dislocation may be complicated by concomitant bony injury of the glenoid rim or the humeral head. In Hill-Sachs lesions, reconstruction techniques vary widely and range from open reduction to tendon transposition or humeral head derotation. These operations are extensive and have questionable outcomes. With the expertise from vertebral compression fracture reduction by kyphoplasty, we examined in a cadaver feasibility study whether reduction of the Hill-Sachs lesion via hydraulic lift might be an anatomical and minimally invasive treatment option. We postulated that the use of a balloon-assisted kyphoplasty reduction could achieve almost anatomical correction of the defect. We created Hill-Sachs lesions in six humeral specimens and performed a computed tomography (CT) scan before and after reduction with the kyphoplasty system. The entry point at the greater tuberosity and balloon positioning was visualised by fluoroscopy. The size of the Hill-Sachs lesion before and after reduction was measured using CT scans in the axial orientation. Using the balloon kyphoplasty system, we achieved a statistically significant reduction (80%) of the Hill-Sachs lesion. In a preliminary cadaver study we show that using a balloon kyphoplasty system might be an
alternative treatment option for Hill-Sachs lesions, with reduced collateral damage that can occur with other minimally invasive techniques. Future work is needed to evaluate the technique under arthroscopic conditions.

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