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Removal of Retained Bullets From the Hip Joint in Civilian Gunshot Injuries

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Purpose: Removal of bullets retained within joints is indicated to prevent mechanical blockade, third body wear and resultant arthritis, plus lead arthropathy and, rarely, systemic lead poisoning. We aimed to report on the largest series of removal of bullets from the hip joint using open surgical techniques.

Methods: This is a retrospective cohort study of all patients who presented to a single Level I trauma unit with civilian gunshot injuries that had breached the hip joint between January 1, 2009 and December 31, 2022.

Results: We identified 117 adult patients who met our inclusion criteria. Of these patients 72 had bullets retained within the hip joint area. 46 patients underwent bullet removal using the following techniques: hip arthrotomy (n = 19), surgical hip dislocation (n = 18), direct removal without capsulotomy (tractotomy) (n = 5), removal at site of fracture fixation/replacement (n = 3), posterior wall osteotomy (n = 1). No patients underwent hip arthroscopy. In 26 patients we did not remove bullets for the following reasons: final location was extra-capsular embedded in the soft tissues (n = 17), clinical decision to not remove bullet due to the patients' clinical condition not allowing for further surgery (n = 8), and patient refusal (n = 1).

Conclusion: With adequate preoperative imaging and surgical planning, removal of retained bullets from the hip joint can be achieved using open surgical techniques without the need for hip arthroscopy.