Background
Avascular necrosis (AVN) of the proximal humerus treatment is challenging. Early recognition and treatment prior to collapse may potentially prevent or delay subsequent progression. Arthroscopically-assisted core decompression of the proximal humerus is one treatment option for AVN. However, there is little published data regarding outcomes of this procedure. This study represents the largest-to-date cohort of patients who underwent arthroscopically-assisted core decompression of the proximal humerus.

Purpose
To investigate and analyze outcomes of patients who underwent arthroscopically-assisted core decompression for proximal humeral AVN

Study Design
Retrospective Review

Methods
Eleven consecutive patients and 13 consecutive shoulders were identified who underwent arthroscopically-assisted core decompression. A comprehensive review of operative reports and imaging were examined to verify the use of an arthroscopically-assisted surgical technique without violation of the articular surface. Concomitant shoulder pathology was surgically addressed at the time of decompression. Patient charts were retrospectively reviewed for pre- and post-operative pain as well as shoulder range of motion. Pre-operative and post-operative x-rays were examined for evidence of progression of AVN lesions. A review of documentation for post-operative shoulder injections or repeat surgery was completed. Subjective American Shoulder and Elbow (ASES) outcomes were compared pre- and post-operatively.

Results
Average follow-up length was 2.6 years. Radiographically, the majority of shoulders (8) remained stable without progressive sclerosis or collapse. Two shoulders demonstrated progressive sclerosis, and articular collapse was seen in 1 shoulder. The average pre-operative ASES score was 19.3, compared to 44.8 at post-operative follow-up (p=.001). Pre-operative shoulder elevation averaged 156 degrees, while post-operative range of motion averaged 170 degrees (p=.81). The majority of patients had mild or moderate pain pre-operatively, while 4 patients required narcotics for severe pre-operative pain. Visual analogue pain averaged 8.4 pre-operatively, compared to 4.9 at most recent follow-up (p=0.004). While post-operative pain initially improved in all patients, the majority of patients had return of mild, intermittent pain with longer follow-up. Two patients who took narcotics pre-operatively continued to require narcotics at final follow-up. Six shoulders had undergone therapeutic shoulder injections post-operatively. No patient had required repeat surgery.

Conclusion
Arthroscopically-assisted core decompression is an option for the treatment of proximal humeral AVN. Visual analogue pain and ASES functional outcomes were reliably improved at average follow-up of 2.6 years. Three shoulders demonstrated radiographic AVN progression, while the majority of lesions remained stable. Six shoulders underwent post-operative injections for pain.

References