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Retrospective Review of Intra-Articular Hip Steroid Injections and Their Association with Rapidly-Progressive Osteoarthritis

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Introduction

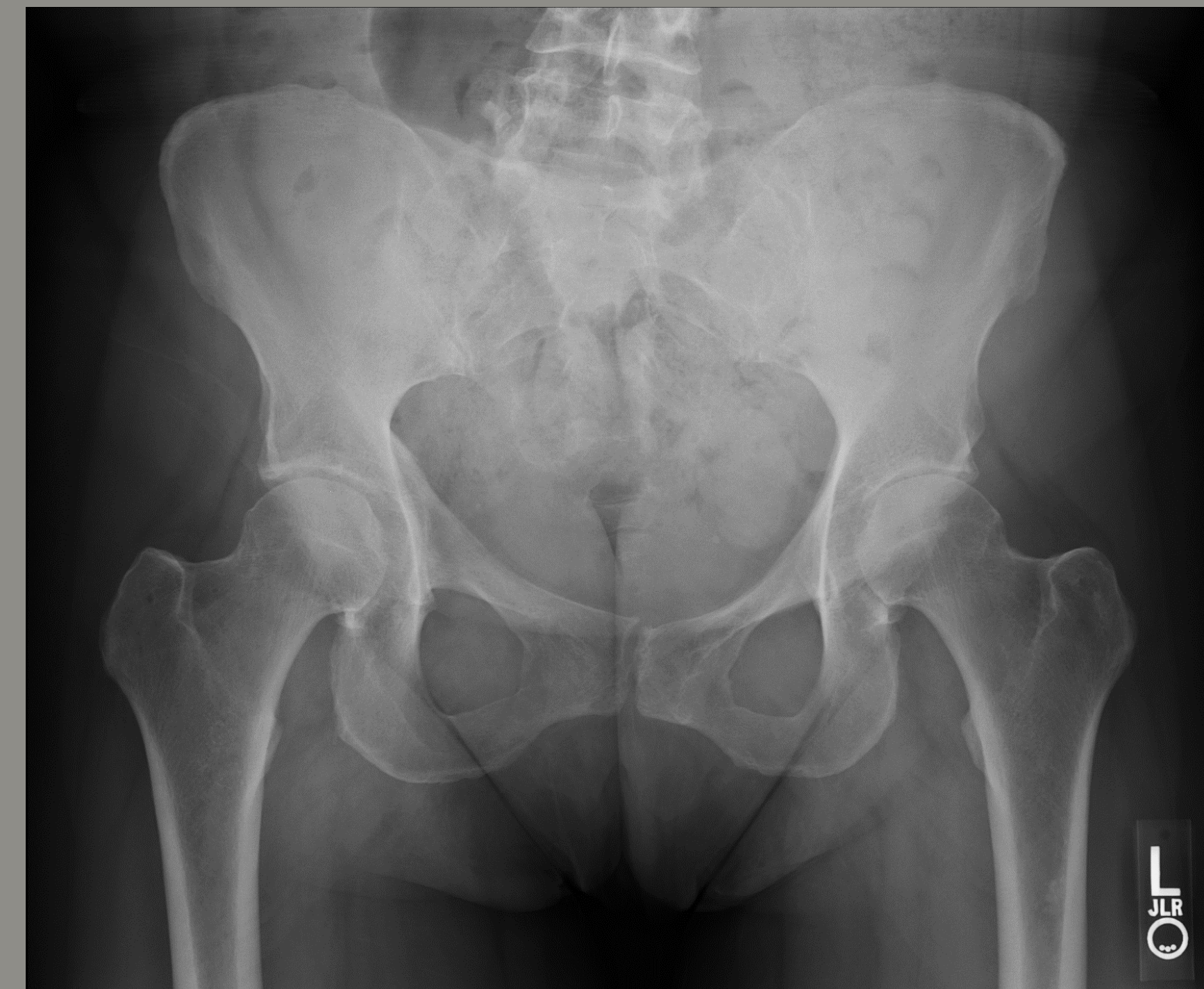
Rapidly-Progressive osteoarthritis (RPOA) is defined as a loss of greater than 2 millimeters or 50% of joint within 12 months. Intra-articular local anesthetic and steroid injection is sometimes prescribed for management of osteoarthritis of the hip. While a causal relationship between steroid injection and RPOA has not been established, concerns exist regarding the potential risk of chondrolysis in patients who receive local anesthetic or steroid injections. The purpose of this study is to assess the incidence of RPOA in patients who receive intra-articular hip injections.

Methods & Materials

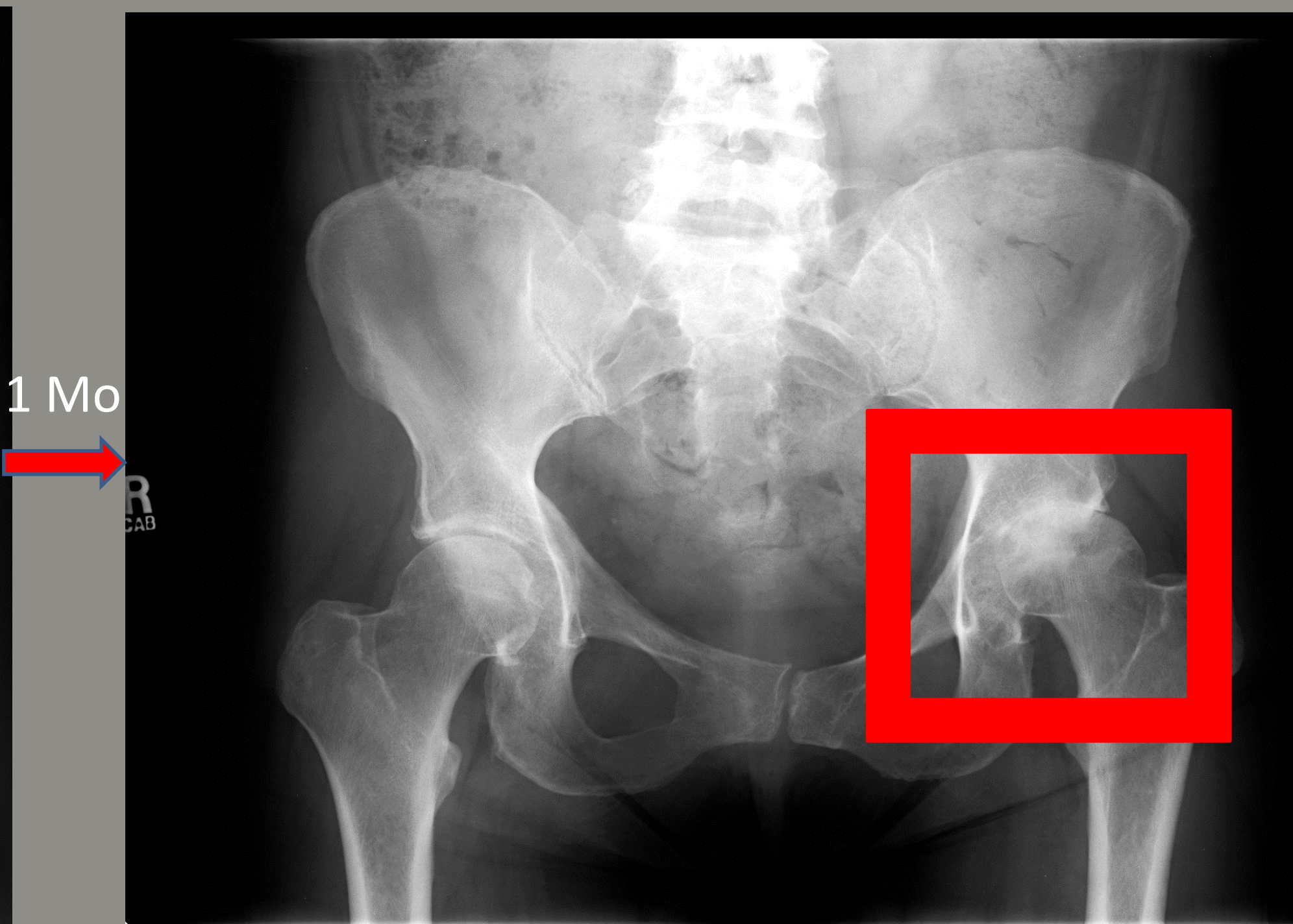
After Institutional Review Board approval, coding records from 2000-2013 were used to identify all subjects who had intra-articular hip injection. Subjects with diagnoses other than osteoarthritis and those without 12-month post-injection radiographs were excluded. Local anesthetic and steroid doses were recorded. Kellgren-Lawrence [1] grading was applied to baseline and follow-up images. Additional demographic and clinical and laboratory data was compiled for subjects meeting criteria for RPOA including whether they underwent total hip arthroplasty during the study period.

Results

Rapidly Progressive Osteoarthritis – Patient A



Prior to Left Intra-articular Injection (Kellgren Lawrence=3)



Post-Left Intra-articular Injection (RPOA) (Kellgren Lawrence = 4)



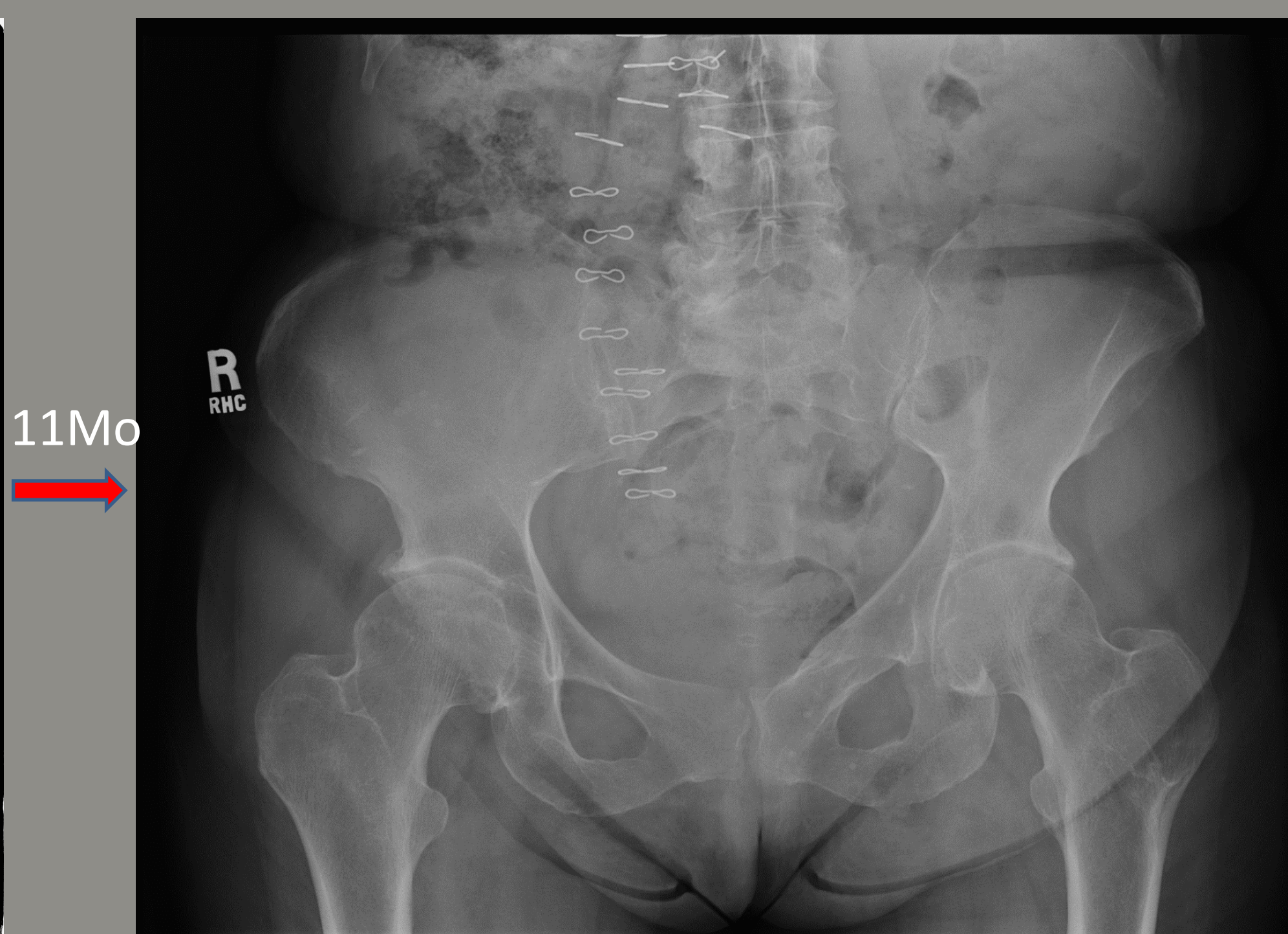
Post-Left Intra-articular Injection (RPOA)

Note the total loss of joint space that occurred within 1 month of injection (above). In addition to distortion of the head of the femur, cystic changes and osetophytes can be identified.

Expected Course --Patient B



Prior to Right Intra-articular Injection (Kellgren Lawrence=1)



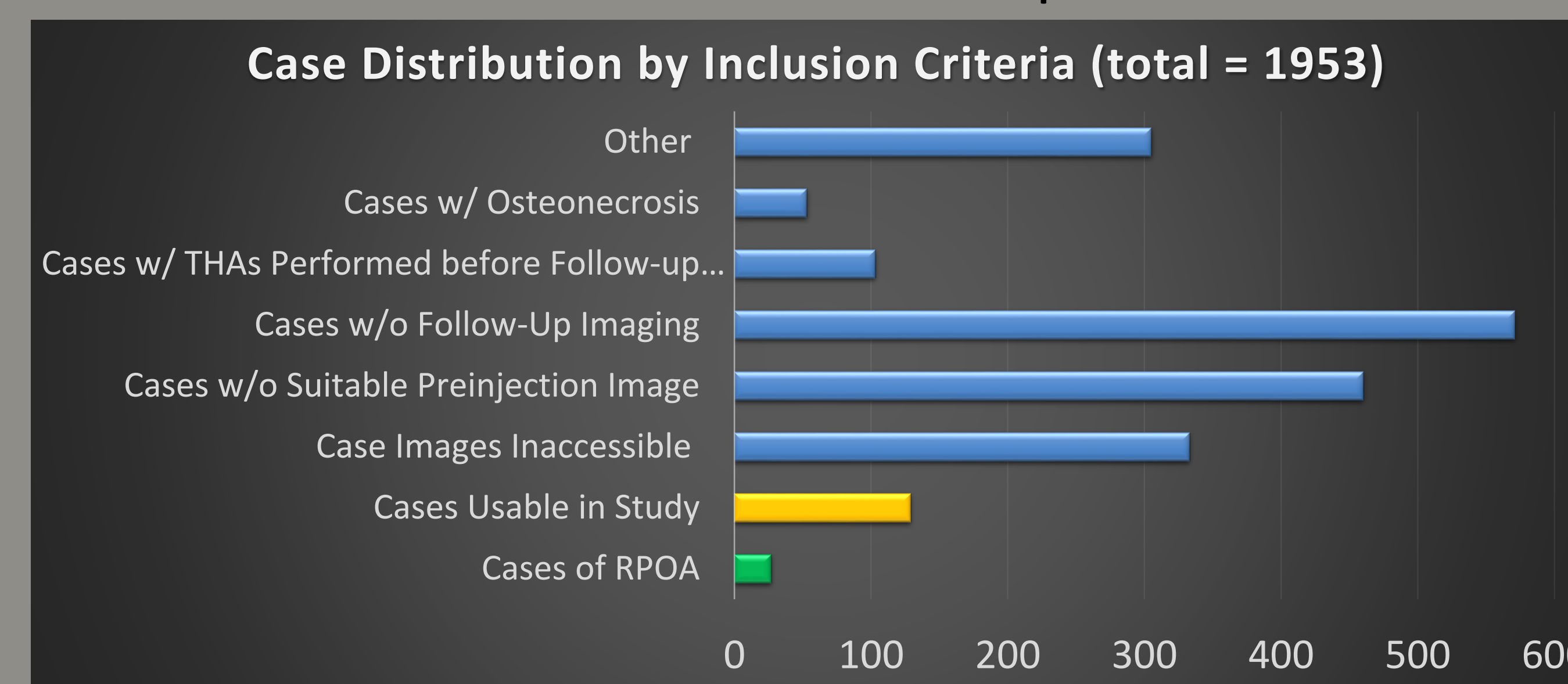
Post-Right Intra-articular Injection (Kellgren Lawrence = 1)

Alternatively, most cases identified do not progress to RPOA. Joint space is maintained or minimally reduced (left).

The average initial Kellgren Lawrence for patients that went on to develop RPOA was 2.39 compared to 2.15, suggesting that the severity of pre-existing joint space narrowing may play a role in the development of RPOA.

Strict inclusion criteria limited the 1953 reviewed cases to a sample of 109 subjects. From this sample, 23 cases of RPOA were confirmed—representing a 21% incidence of RPOA in those receiving intra-articular anesthetic and steroid hip injections. Reasons for non-inclusion were varied and are illustrated to the right.

Of the 23 patients that developed RPOA, 21 (91%) received Total Hip Arthroplasties (THA). In the case of the 86 patients that received injections and did not go on to develop RPOA, 48 (56%) went on to receive a THA.



Conclusions

Based on strict inclusion criteria, 109 patients were eligible for analysis in this study. Of these patients, 23 developed RPOA—representing an incidence of 21%.

The characteristics of patients who went on to develop RPOA in this study were: worse initial Kellgren-Lawrence grade and older age.

Future studies of larger sample size that also include outcomes of patients who did not receive intra-articular injections will be needed to establish a causal relationship between these injections and RPOA.

References

[1] Kellgren, J. H.; Lawrence, J. S. (1957). "Radiological assessment of osteo-arthritis". *Annals of the rheumatic diseases* **16** (4): 494–502.

Acknowledgements

A special thanks to the VCU School of Medicine Student Summer Research Fellowship Program for this opportunity

VCU Department of Radiology for Assistance with imaging