Loss of the sclerotic line of the glenoid on anteroposterior radiographs of the shoulder: a diagnostic sign for an osseous defect of the anterior glenoid rim

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BACKGROUND
The integrity of the glenoid defines the surgical treatment in anterior shoulder instabilities. The reliability of plain radiographs to detect anterior glenoid rim deficiencies was determined.

MATERIALS AND METHODS
The anterior sclerotic glenoid line (SGL) was assessed on anteroposterior radiographs of 86 shoulders (34 anterior instabilities, 15 posterior instabilities, 37 stable) and compared with computed tomography (CT) scans (gold standard). A loss of the SGL (LSGL) was defined as a positive LSGL sign.

RESULTS
On CT scans, 25 of 34 shoulders (74%) with anterior instabilities showed a defect of the anterior glenoid rim. No defects were found in shoulders without anterior instabilities. LSGL correctly predicted an anterior glenoid rim lesion in 16 (examiner A) or 14 (examiner B) of the 25 anterior instabilities (sensitivity, 64% and 56%), without a false-positive diagnosis (specificity, 100%).

CONCLUSION
The LSGL on anteroposterior radiographs is a moderately sensitive but highly specific finding for anterior glenoid rim defects.

LEVEL OF EVIDENCE
Level 4; Diagnostic study, case control study.