

The Value of Postoperative Radiographs After Hardware Removal in Pediatric Patients

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INTRODUCTION:

Pediatric patients have hardware placed during many orthopedic procedures such as fractures reductions and deformity corrections. The hardware is routinely removed to prevent overcorrection of the deformity, protect against stress risers, alleviate discomfort from the hardware, and prevent overgrowth of the hardware. Fracture through the prior hardware site is a common worry after ~~the~~ hardware removal. Post hardware removal radiographs are routinely used to evaluate the prior hardware removal sites and to assess when a patient may return to normal activities. To our knowledge, the value of routine postoperative radiographs after elective hardware removal in pediatric patients has not been studied.

METHODS:

A retrospective patient cohort of pediatric patients who had hardware removal from an extremity from 2017-2019. Data was collected for patient demographics, hardware site, the reason for primary surgery, complications, number of postoperative radiographs, radiation exposure, cost of imaging, and if the postoperative plan was changed by imaging.

RESULTS:

Level of evidence III. 290 patients were included in the study. Postoperative plans were changed only in 0.69% of patients (n=2) due to abnormal 2-week radiographs and 1.72 % (n=5) due to abnormal 6-week radiographs. However, the event's proportion difference (change of management) was not statically significant (p=0.182) between those that had a radiograph taken and those that did not. The mean follow-up time was 16 months. The mean number of postoperative radiographs obtained was 3.74, the mean cost of radiographs was \$287, and the mean postoperative radiation exposure was 1.34 mSv. There were no fractures after hardware removal.

DISCUSSION AND CONCLUSION:

A retrospective review of the value of postoperative radiographs after routine orthopedic hardware removal found postoperative radiographs at 2 weeks and 6 weeks did not change the postoperative plan for the majority of the patients. Postoperative radiographs have an average cost of \$287 and radiation exposure equal to about 6 months of natural background radiation.