



The Utility of Anteroposterior Radiographs in Rotational Ankle Fractures During Postoperative Follow-up: The Results a Survey

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Introduction

- Standard radiographic analysis of the ankle includes the anteroposterior (AP), mortise, and lateral views¹
- The purpose of this study was to (1) assess orthopaedic surgeons' practices regarding routine radiographic orders during post-operative follow-up and (2) to perform a cost analysis of charges reduced by eliminating the AP view from standard radiographic orders.

Methods

- All active Orthopaedic Trauma Association Members were invited via email to participate in a survey
- A charge analysis was performed using published data for 2-view and 3-view ankle radiograph charge at ranked orthopaedic hospitals in the United States.

Results

- 94% respondents answered that AP view is standard in ankle fracture protocols.
- Only 49% found this view useful, and 57% think the AP view should be eliminated from standard follow-up protocols (Fig 2).
- The mean difference in charge between a 2 and 3-view ankle radiograph series was \$102.00 (Fig 4).

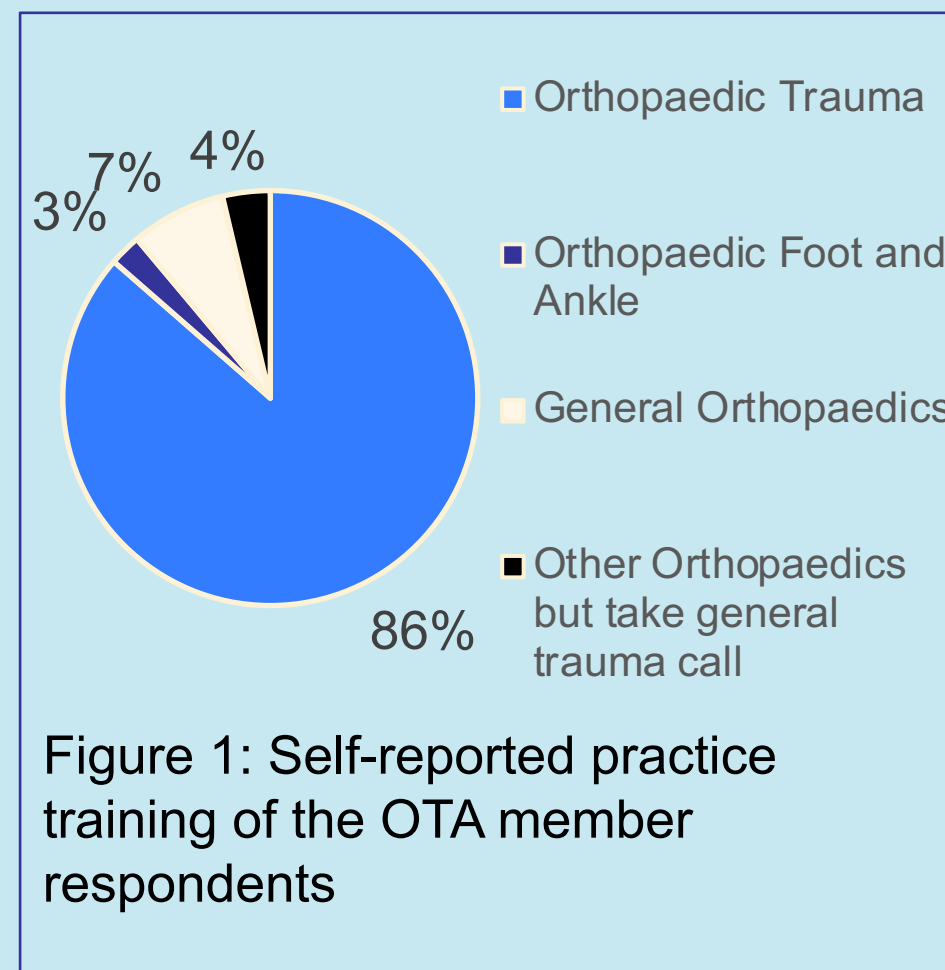


Figure 1: Self-reported practice training of the OTA member respondents

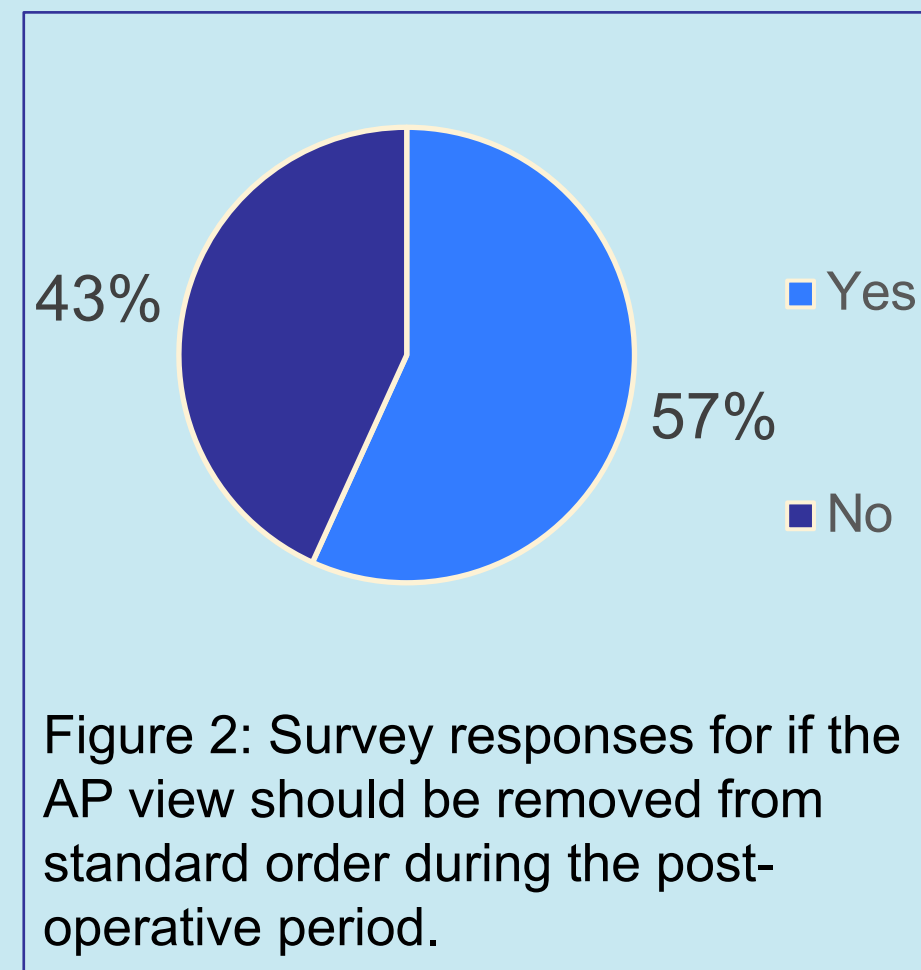


Figure 2: Survey responses for if the AP view should be removed from standard order during the post-operative period.

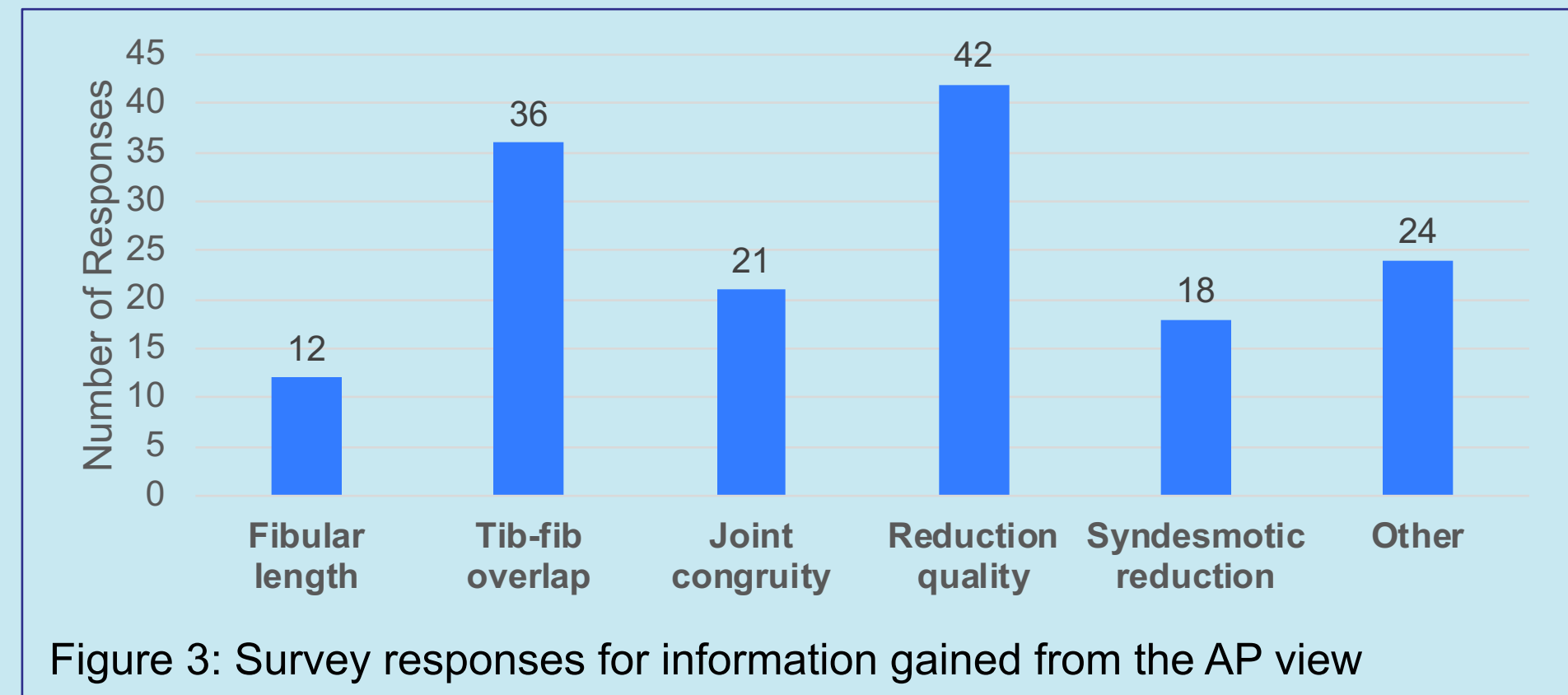


Figure 3: Survey responses for information gained from the AP view

Incidence of ankle fractures ²	x	3 follow-up sets of radiographs	x	Mean difference of 2-view and 3-view ankle XRs	=	potential annual savings if the AP view is removed
134,643	x	3	x	\$102.00	=	\$41,200,758.00

Figure 4: Cost analysis using mean difference between charges for 2 and 3-view radiographs and assuming 3 follow up sets of radiographs.

Discussion

- A majority of orthopaedic surgeons believe that the AP view should be eliminated from the routine (Fig 1).
- If the AP view was eliminated from standard orders in the United States, there would be a potential \$41 million charge reduction (Fig 4).
- Limiting the use of the AP projection would not only reduce charges but also patient radiation, radiologist interpretation time, X-Ray technician time, and data storage requirements.

Conclusions

- Routine AP radiographs should potentially be eliminated from routine post treatment ankle x-ray protocols based on this survey of experienced orthopaedic surgeons.
- If the AP radiograph is ordered on a case-by-case basis then significant cost-saving may be obtained.

References

- Marsh JL, Slongo TF, Agel J, et al. Fracture and dislocation classification compendium - 2007: Orthopaedic Trauma Association classification, database and outcomes committee. J Orthop Trauma. Nov-Dec 2007;21(10 Suppl):S1-133.
- Scheer RC, Newman JM, Zhou JJ, et al. Ankle Fracture Epidemiology in the United States: Patient-Related Trends and Mechanisms of Injury. The Journal of Foot and Ankle Surgery. 2020/05/01/ 2020;59(3):479-483.