



BY JARROD SHAPIRO, DPM

What Makes a Landmark Article?

How do these differ from other manuscripts?

Practice Perfect is a continuing every-issue column in which Dr. Shapiro offers his unique personal perspective on the ins and outs of running a podiatric practice.

Journal clubs are a known and time-honored part of resident academic education. They are considered so important by the podiatric community that this is the only didactic educational activity that is explicitly required by the Council on Podiatric Medical Education, the accrediting body for podiatric residencies. They could have mandated some other activity such as completing a standard online lecture curriculum, watching surgical videos, or doing a workshop; instead they made a strong preferential statement requiring this educational activity. It seems one can describe three different approaches to journal club topics:

1) Current research—Pick up this month’s edition of the *Journal of Foot and Ankle Surgery*, for example, and check out an interesting new study about the timing of amputations after endovascular surgery.¹

2) Answering a clinical question—Should you use platelet-rich plasma injections for plantar fasciitis patients? This usually requires looking at a number of studies and synthesizing an answer based on best evidence.

3) Landmark articles—How did Koutsogiannis actually execute the medial displacement calcaneal osteotomy? Reading the original article will answer the question.

When it comes to classic articles, though, it may be less clear how to use these articles compared with the two former types of journal club ap-



When it comes to classic articles, though, it may be less clear how to use these articles... and what to discuss during a landmark article journal club.

proaches and what to discuss during a landmark article journal club. First, consider that there are basically two ways to use a landmark article: (A) understanding the history of a topic (For example, when was the Austin bunionectomy first performed? Answer: First described in June 1981 by Austin and Leventen²) and (B) using an article to assist with actual medical care (For instance, how to treat open fractures using the Gustilo Anderson classification.³) Either or both of these formats may be used, but it’s helpful to remain clear on what an article has to offer.

Here are 10 guiding questions that might help make your next landmark article discussion a little more vibrant and useful.

1) What does the article say?

2) What doesn’t the article say in relation to what we know now?

3) Were there surprises while reading it?

4) Is the study useful as more than a historical article?

5) Is it still generalizable to current medical practice?

6) Is the information still applicable/valid?

7) Are there characteristics about the article that make it attractive or more readable?

8) What was the medical environment in which the paper was written?

9) What are you going to do with the information from the article?


10) Are there other articles to compare this one to that will shed

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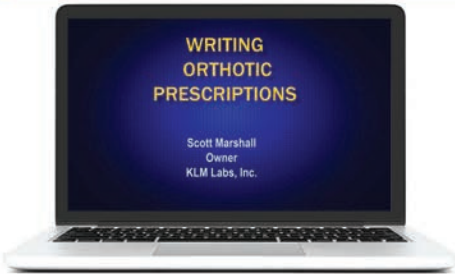
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In this Lecture...

Scott Marshall discusses modifications for cast corrections, orthotic shell as well as extrinsic posting to meet the specific needs of particular patients. Mr Marshall also describes modifications as they address biomechanical pathologies as well as reviewing rear foot versus forefoot accommodations.

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Landmark Article (from page 39)

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light on the pathology we are treating?

Let's take a look at one landmark article as an example: the classic Ramsey and Hamilton study about tibiotalar contact area in ankle fractures.⁴ In 1976, these researchers placed black carbon paper between the tibia and talus of 23 dissected cadaver ankles and then translated the talus 1, 2, 4, and 6 mm laterally with the talus at neutral to the tibia in all planes.

Powdered carbon transferred itself to the talar trochlear surface in different amounts based on the length of translation. They found the area of contact between the tibia and talus decreased by 42% with 1 mm of lateral displacement—the greatest percentage of any of the displacements—hence the classic reference all students and residents are required to know and the rationale behind the requirement for precise reduction of ankle fractures as well as the surgical versus nonsurgical emphasis. Less commonly reported is that they found a trend toward decreased medial contact with increasing lateral displacement.

It's interesting to note that a cadaver study became the gold standard evidence, applied as a major indicator to perform ankle fracture reduction and fixation surgery. The clear assumption is that loss of tibiotalar contact area correlates directly with

increased joint stress and later ankle arthritis; but although it seems obvious that malalignment of this joint would lead to arthritis, this isn't actually what the study tested. No clinical outcomes were reported, and everyone that followed simply assumed lateral displacement leads to arthritis.

Remember, the 42% was an average over the 23 cadaver ankles, and looking at the numbers, the almost 1 cm standard deviation represents an almost 25% difference between specimens. This was thought by Ramsey and Hamilton to result from the structural variation between specimens—which makes sense—and may also have ramifications for our patients, since no one's anatomy is exactly the same as anyone else.

Lloyd and colleagues later validated this number with their own cadaver study by repeating the original study with 12 ankles.⁵ They found 1 mm of displacement led to 40% decreased contact area, confirming the results of Ramsey and Hamilton. Later studies by others actually led to some controversy regarding the conclusions that could be made about the utility of using area as a surrogate for other agents such as joint pressures and clinical outcomes. Further reading will reveal a number of other related studies.

Obviously, it's not possible to do a prospective randomized clinical study in which some ankle fractures are fixed with varying amounts of displacement and then observing for osteoarthritic

changes in the future! So, it makes sense that this classic article is in fact landmark and should remain in our canon of ankle fracture literature.

This short journal club demonstrating reviewing landmark articles is a productive educational activity from which our students and residents will benefit. Good luck with your next landmark article discussion. **PM**

References

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