

통증 및 근골격재활

게시일시 및 장소 : 10 월 18 일(금) 08:30-12:20 Room G(3F)

질의응답 일시 및 장소 : 10 월 18 일(금) 10:00-10:45 Room G(3F)

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Do the thickness of structure on ultrasonography reflect clinical findings in hind foot pain?

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Introduction

The main ultrasonographic findings of plantar fasciitis include thickening of plantar fascia, loss of fibrillar pattern, hypoechogenicity. Especially, it is established that plantar fascia thickness more than 4mm indicates plantar fasciitis. However, the utility of measurement of tendon thickness in Achilles tendinitis is controversial. The aim of the present study is, therefore, to evaluate whether measurement of the thickness on ultrasonography reflects clinical findings of Achilles tendinitis.

Method

Subjects Consecutive 44 patients (88 feet) with hind foot pain who visited our foot clinic and performed ultrasonography from 2016.02. to 2019.05. were included. Clinical diagnosis was based on the clinical symptom and sign (tenderness on the medial calcaneal area in plantar fasciitis; tenderness on the Achilles tendon insertion area in Achilles tendinitis). Sonographic evaluation Ultrasonography was conducted in our foot clinic using a 3-12-MHz linear transducer with ultrasound system. The patient kept the foot perpendicular to the leg in a prone position. Both feet were evaluated regardless of the symptoms. Thickness of plantar fascia and Achilles tendon were measured in the calcaneal insertion area. Statistical analysis Chi-square test, Mann-Whitney U-test were performed to identify difference in thickness or echogenicity. P-value<0.05 was considered to indicate statistical significance.

Results

Of the 44 patients (88 feet), 17 was men and 27 was women. The mean duration of symptom was 12.46 months. 29(33%) feet was clinically diagnosed with plantar fasciitis, 10(11.4%) feet with Achilles tendinitis, 25(28.4%) feet with both plantar fasciitis and Achilles tendinitis. The thickness of Achilles tendon on ultrasonography in the feet with Achilles tendinitis was similar with those without Achilles tendinitis (P=0.746), whereas the thickness of plantar fascia in plantar fasciitis was significantly thicker than those without plantar fasciitis (P=0.001). In terms of echogenicity, there was significant difference between feet with Achilles tendinitis and those without it (P<0.001). The mean

thickness of Achilles tendon in feet with clinical diagnosis of Achilles tendinitis was 4.38mm and 4.34mm in those without, respectively. When tenderness exists, the odds ratio to show hypoechoogenicity was 12.97.

Conclusion

Unlikely plantar fasciitis, thickness of Achilles tendon on ultrasonography does not seem to reflect clinical findings such as tenderness in Achilles tendinitis. Thus, other findings than thickness, such as echogenicity should be considered for the diagnosis of Achilles tendinitis using ultrasonography.

Table 1. Relationships between ultrasonographic and clinical findings

Tenderness on medial calcaneal area			
	Negative	Positive	
Thickness (mm)	3.25(2.82-3.47)	3.9(3.15-5.00)	<i>P=0.001^{a)}</i>
Tenderness on Achilles tendon insertion area			
	Negative	Positive	
Thickness (mm)	4.35(3.71-4.88)	4.31(3.87-4.90)	<i>P=0.746^{a)}</i>
Hypo-echogenicity	4(7.5%)	18(51.4%)	<i>P<0.001^{b)}</i>

Table 1. Relationships between ultrasonographic and clinical findings

Values are presented frequency(%) or median(interquartile range). a)Mann-Whitney U test, b)Chi-square test

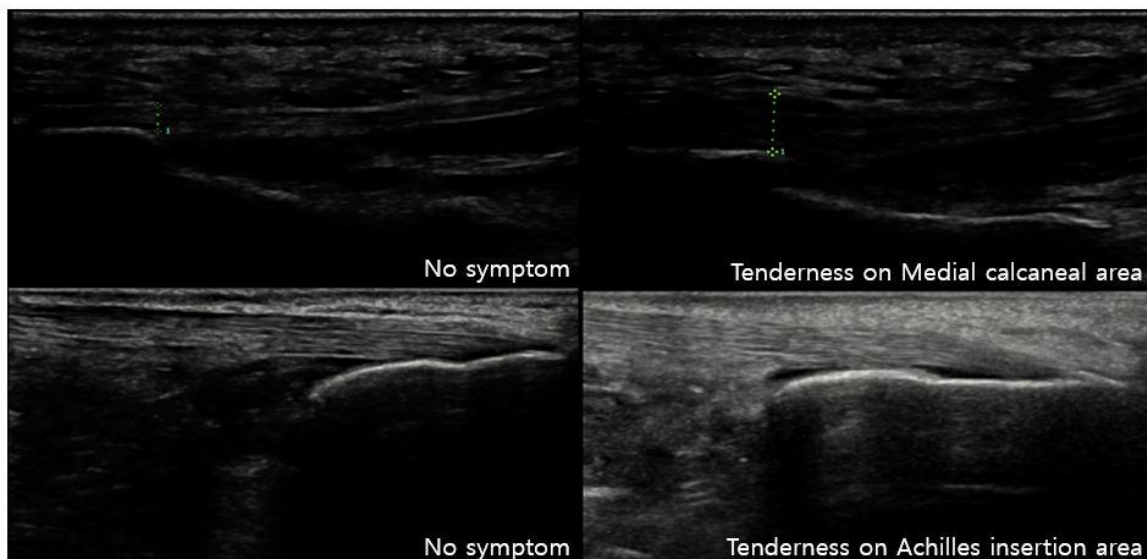


Figure1. Ultrasonography of plantar fasciitis and achilles tendinitis