Department of Basic Science

Doctoral Degree
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Title	:	**Visualization of myofascial trigger points in low back muscles by real-time sonoelastography.**
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Abstract	:	

Background; There is still lack of objective means to quantify myofascial trigger points (MTrPs) and their core features. Purpose; was to compare between MTrPs and their immediate surrounding myofascial tissue by the real-time 2 dimensional grey scale ultrasound and vibration sonoelastrography (VSE), and to compare the accuracies of both these modes in visualizing MTrPs. Also, to compare between active and latent MTrPs by VSE and to examine its accuracy to visualize deep and superficial located MTrPs. Method; Fifty subjects with more than two MTrPs were assigned to an active MTrP group A and a latent MTrP group B. MTrP identification was based on their essential criteria; also, a hand held digital electronic algometer to measure MTrPs tenderness, through pressure pain threshold. A hand held vibrator (~70Hz) was used over MTrPs while sonoelastography readings were taken. Outcome measures; included percentage of tissue stiffness and their strain ratio; scores were assigned to the B-mode according to echogencity. Results; there was a significant difference between MTrPs strain when compared to their immediate surrounding myofascial tissue when measured by VSE with a P-Value = 0.001 (P-Value<0.05), it also, visualized all superficial and deep MTrPs with an accuracy of 100% than the B-mode. However, there was no significant difference between tissue strain ratios of both active and latent MTrPs with a P-Value=0.929 (P-Value>0.05). Conclusion; these results indicate that sonoelastograpy can locate, visualize and image superficial & deep MTrPs and can differentiate them from its surrounding myofascial structure through tissue stiffness and echogenicity, E-mode was more accurate than the B-mode in locating, visualizing and imaging MTrPs.

Key words	1.	**Myofascial trigger points.**
	2.	**vibration sonoelastography.**
	3.	**digital algometer.**
	4.	**pressure pain threshold.**
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