Sir,

Rupture of Achilles tendon is among the most prominent injuries of the tendon. Changes in Achilles tendon thickness is related to various diseases. Researches have shown that individuals ranging from 30 to 40 years are more prone to Achilles tendon injury.

Till date, there is no data on the thickness parameter of Achilles tendon with respect to Body Mass Index (BMI) of young healthy individuals. This study was undertaken to investigate the thickness of Achilles tendon on healthy male Saudi population ranging from 19 to 23 years.

In the current study, there were 15 healthy individuals. Participants were divided according to their BMI into 3 groups (underweight, normal and overweight). Every group consisted of 5 individuals. The participants had no prior history of trauma to lower extremity or damage to Achilles tendon. An ultrasound examination was carried to mark insertion points of Achilles tendon starting from calcaneus up to insertion into calf muscles. The total length of Achilles tendon was measured and centre point was marked, using a marker. A quick ultrasound examination to measure length of Achilles tendon was followed by examination of tendon only in the midsection area with a region of interest 2 inch x 2 inch, where the tendon is thinnest. Normal B-mode images were captured and thickness was evaluated at 3 random locations within the region of interest. IBM SPSS V21 was used to perform post hoc Tukey’s test to determine significance among groups with a p-value ≤ 0.05.

In the current study, the Achilles tendon was clearly visualised via B-mode ultrasound in longitudinal plane. It was observed that the increase in BMI is attributed to decrease in Achilles tendon thickness (Figure 1).

Achilles tendon thickness plays an important role in diagnosis of various diseases. Changes in Achilles tendon thickness is related to several diseases. It is suggested that longitudinally thin Achilles tendon may lead to its rupture more easily as compared to thick Achilles tendon. Dyslipidaemia, overuse, and inflammation are all reported to change thickness in Achilles tendon. However, in the current study BMI is suggested to be a new factor that is involved in changing the physical form of Achilles tendon by altering its thickness. This finding opens new horizons to investigate if the thickness of Achilles tendon is related to other pathological conditions.

Moreover, the authors strongly suggest to study Elastographic strain ratios to determine stiffness of Achilles tendon with respect to BMI in order to establish a relationship between stiffness and BMI.

In conclusion, thickness of Achilles tendon decreases with the increase in BMI. Thinning of Achilles tendon from the centre is an alarming indicator as it may lead to tendon rupture. Further studies are required to establish a relationship between changes in Achilles tendon thickness and other pathological conditions.

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