The precise sagittal and coronal location of the fifth metatarsal stress fracture using CT Analysis

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My disclosure is in the Final AOFAS Mobile App. I have no potential conflicts with this presentation.
We’ve observed that those who have wide plantar fracture gap preoperatively comes to be in bad result.

To evaluate the precise sagittal and coronal location of 5th MT stress fracture using simple x-ray and CT.

‘Plantar Gap’ !!

From June 2012 to May 2013
38 patients (38 cases) underwent surgery for 5th MT stress fracture
All men
Mean age 19.3 y/o
36 of 38 patients - athletes
soccer (34) / kick boxing (1) / hand ball (1)
Material and Methods

- Simple x-ray classification by Dameron

- Simple x-ray classification
  5th MT length (B)
  distance from tuberosity to fx. Line (A)

-> A/B
Material and Methods

- CT (25 of 38, Incomplete fx)

location
- dorsal
- plantar
- medial
- lateral

in coronal section
Results

- Zone I : 0
- Zone II : 8
- Zone III : 30

- Sagittal location
- Ratio Fx. Line / 5\textsuperscript{th} MT length 0.35 (0.29-0.40)
Results

- CT (coronal view) plantolateral in all cases

Plantar : 1
Lateral : 3
Plantar lateral : 21
Discussion


No meaning to differentiate their anatomic location into Zone II or Zone III
Discussion

All fractures are located at the plantar lateral side of 5th Metatarsal base

‘Plantar Gap’ : Plantar Lateral side of Fracture

Proven !! By CT analysis

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Conclusion

1. 5\textsuperscript{th} MT stress fx is located at the plantolateral aspect of proximal 1/3, 35\% proxmial from the tuberosity on CT analysis

2. Treatment is focused to reduce the tensile force or convert tensile force to compression force with appropriate surgery