

Spot Light Country Japan-Functional anatomy of foot and ankle ligaments

Chair: Yasuhito Tanaka

Speakers: Youichi Yasui, Takaaki Hirano, Atsushi Teramoto, Akira Taniguchi

Atsushi Teramoto

Title: Anatomy and function of the distal tibiofibular syndesmosis

The distal tibiofibular syndesmosis consists of the anterior inferior tibiofibular ligament (AITFL), posterior inferior tibiofibular ligament (PITFL), transverse ligament, and interosseous membrane. AITFL runs obliquely to the distal fibula from the lateral edge of the tibia, can be divided into three bands. There is proximal band, primary band, and Bassett ligament as distal band. The distal tibiofibular syndesmosis allows small movement of the fibula with ankle joint motion. The fibula is moved laterally and external rotation by dorsiflexion of the ankle. The tibiofibular joint closes by plantarflexion. Biomechanical studies have revealed that not only dorsiflexion of the ankle, but also inversion or external rotation causes the opening of the tibiofibular joint. Metal screw fixation for syndesmosis injury causes too rigid compared to the normal ankle joint, physiological movement of the tibiofibular joint disappears. Suture-button device allows the movement of the tibiofibular joint, but instability remains compared to the normal joint. AITFL augmentation with suture-tape along the anatomical running of AITFL fibers achieves the physiological stability as the normal joint. Anatomy and function of the distal tibiofibular syndesmosis has been revealed in more detail, and the application to treatment is progressing with the addition of biomechanical factors.