**Introduction.** It is known that the Achilles tendon (AT) disease or rupture is considered a serious pathology of the musculoskeletal system, as largely reflected in the level of physical activity and professional abilities of the patient. Diseases of the AT is classified as the most common among athletes pathologies. In studies of scientists such as M. Astrom, M. Myerson, W. McGarvey, A. Rausing was found that in 20-24% of patients complained of posterior heel pain was diagnosed retrocalcaneal bursitis in combination with pathological changes in this area: insertional tendopathy or posterior calcaneal spur. More and more studies referred to the theory of degenerative AT ruptures. All this shows the relevance of this disease and the need for a common consolidated tactics of diagnosis and treatment.

**Material and methods.** From September 2012 to August 2015 were examined 38 heels in 35 patients with retrocalcaneal bursitis, who turned to trauma departments of the Kiev City Clinical Hospital № 8. High resolution ultrasound measurements (with Power Doppler mode) was performed in all 38 cases. To prevent various subjective factors all cases were examined by a single observer. The main requirement of the study was the lack of local glucocorticoid injections in history of disease. In the study, we evaluated the following diagnostic criteria: increase the size of the retrocalcaneal bursa, local thickening of AT (as compared to the contralateral AT), disruption tendon structure, thickening of peritenon, vascularization at the site of AT insertion, intratendinous calcification, bone erosions and posterior calcaneal spur.

**Results.** Increasing the size of the retrocalcaneal bursa was observed in all 38 cases. In all cases was also visualized synovial thickening and increasing blood flow. In 18.4% (7) cases observed fibrous changes of synovial membrane. In 4 of 38 cases (10.5%) were local thickening of the AT at the rear-upper heel bone. In 18 cases (47.3%) was noted partial disruption of tendon structure and in 5 cases (13.1%) were diagnosed peritendinitis. Intratendinous calcification was identified in 28.9% of cases, posterior calcaneal spur - in 42.1% of cases and bone erosions – in 55.2 %. When examining patients in Doppler-mode in 63.1% of cases (24) was noted decreasing blood flow at the site of AT insertion.
**Discussion.** Increasing the size of the retrocalcaneal bursa in all 38 cases complement clinical examination and confirmed the diagnosis of bursitis. In all cases was also visualized thickening and increased blood flow synovial membrane, which indicates the occurrence of inflammation with the exudate production. Intratendinous calcification and local thickening AT describes the localization of pathological process in the tendon and is the signs of tendinosis. Partial disruption of tendon structure was indicating concomitant insertion tendopathy. Reduce blood flow at the site of insertion explained the development of degenerative processes of anatomical structures and suggested the complexity of insertional dysfunction and the possibility of isolated damage to one part of the system without adaptive changes in the another parts. Normal reparative processes are as responsive to normal physiological reactions. In pathological changes it will reach the level of adaptive processes in change of the structure.

![Figure1. Study’s findings of pathological changes in AT and surrounding structures which were visualized by ultrasonography.](image-url)
The results (Figure 1) indicate the complexity of the insertion structure’s changes in patients with retrocalcaneal bursitis and open new areas for further study of the problem, develop new approaches to diagnosis and treatment.