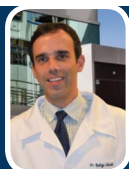


## 12<sup>th</sup> International Conference on **ARTHROPLASTY**

June 24-25, 2019 | Rome, Italy



### *Rodrigo Almeida dos Santos*

Faculty of Medicine of Barbacena, Brazil

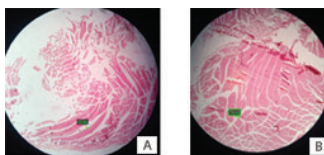
#### **Histological effect of shock waves on the quadriceps musculature of wistar rats**

**Statement of the Problem:** The extracorporeal shockwave therapy (ESWT) was introduced in medical practice in the early 1990s as a derivation of urological lithotripsy. In the United States, the use of shockwaves in the musculoskeletal system was approved in 2001 and its similar application in Brazil in 1998. It has now been applied to treat several pathologies such as epicondylitis, patellar tendonitis, tendinosis, calcareous shoulder tendonitis, delay of consolidation, pseudarthrosis of fractures, bursitis of the great trochanter, plantar fasciitis.

**Methodology & Theoretical Orientation:** The present study had evaluated the posterior musculature of the right thigh of 12 rats after being subjected to the application of shockwaves with a radial device of Electro Medical System (EMS) - the Swiss Dolorclast Smart 20 and compared with the same muscle group on the left side, which was not submitted to shockwaves. The methodology was developed with supervision from the Federal University of Minas Gerais. A group of 12 male Wistar rats were subjected to three sessions of ESWT on the left hind paws using the EVO-BLUE. After seven days, the animals were euthanized, and the quadriceps muscles were sent for histological analysis. We performed the experiment in the biotery of the College of Medicine of Barbacena - MG, and all 12 animals were submitted to shockwaves under intraperitoneal anaesthesia. We submitted 3 applications with weekly interval according to protocol of the model of the device and in the fourth week, under the same type of anaesthesia, the rats were euthanized and referred for comparative histopathological analysis of the limbs.

**Findings:** We observed a slight edema in the muscle tissue and inflammatory infiltrate on the right thigh (submitted to radial shockwaves) in relation to the contralateral side.

**Conclusion & Significance:** Which demonstrates the safety and restorative capacity in the musculature of the method employed.



Comparison between histopathological findings of the right paw (image A) and the left paw (image B)

#### **Biography**

Rodrigo Santos is a scientific director at the Institute of Traumatology and Orthopedics of Barbacena, Brazil. He is also the head of the orthopedic department of Santa Casa de Barbacena Minas Gerais and an expert member of the Brazilian Society of Orthopedics and Traumatology. He obtained his bachelor's from the College of Medicine of Barbacena in 1996. He accomplished his master's degree in medicine by the Federal University of Minas Gerais, Brazil. Presently, he is a professor in the Department of Orthopedics and Traumatology at the Faculty of Medicine of Barbacena, Brazil.

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