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ISOKINETIC EVALUATION OF PELVIC MUSCLES IN OSTEITIS PUBIS

Thesis

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Submitted to the Department of Biomechanics in Partial Fulfillment of
the Requirements for The Doctoral Degree in Physical Therapy.

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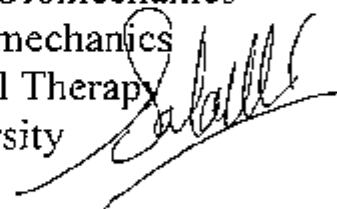
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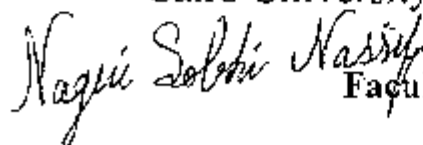
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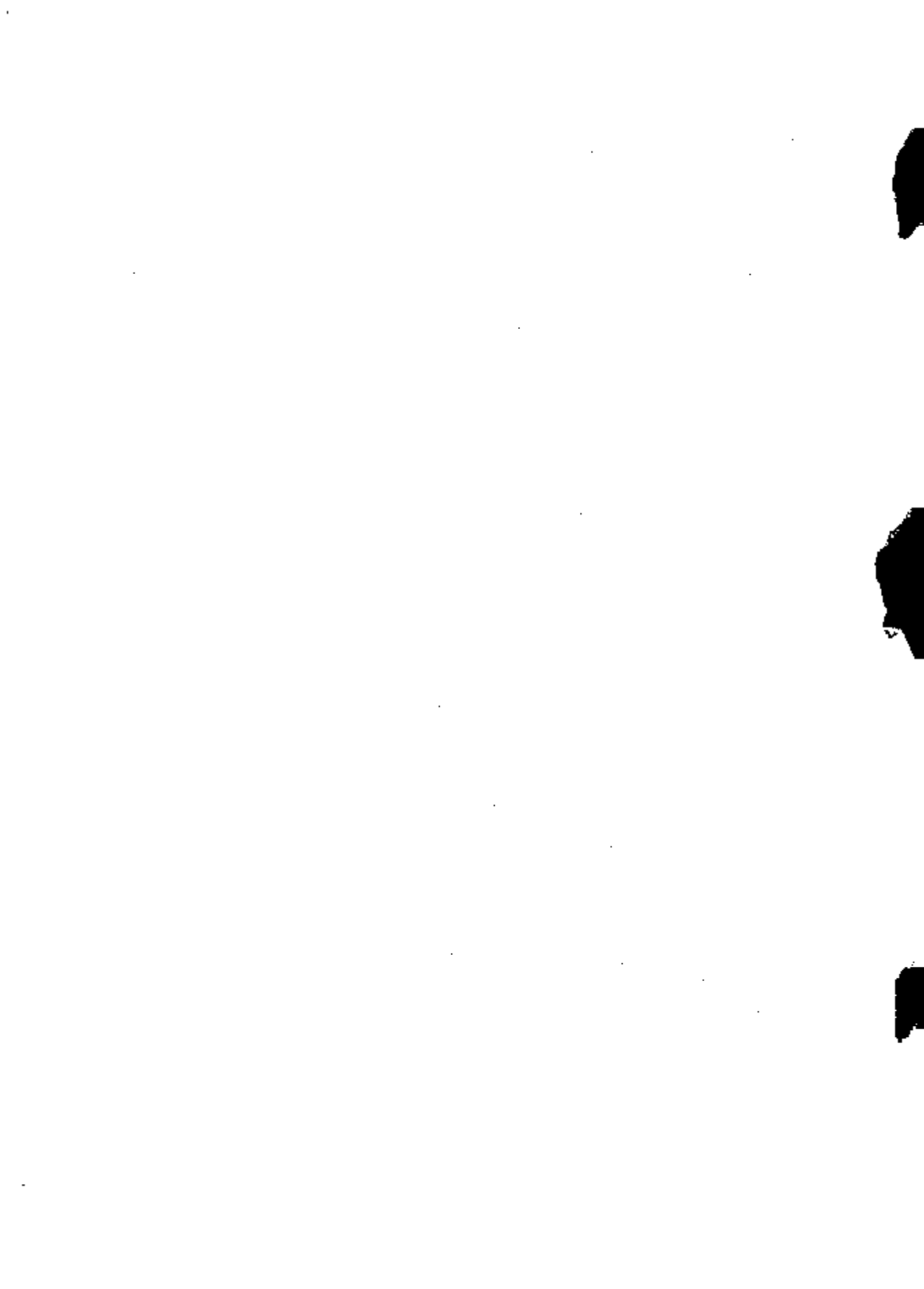


Isokinetic Evaluation of Pelvic Muscles in Osteitis Pubis/ Walaa Sayed Mohammad Mohammad: Cairo University, Physical Therapy, Department of Biomechanics. Supervisors: Prof. Dr. Salam Mohamed Elhafez, Dr. Nagui Sobhi Nassif, and Dr. Osama Ragaa Abdel-Raouf. Thesis: Ph.D.; Biomechanics, 2010.

Abstract

Osteitis pubis in athletes is an old problem and its aetiology is still the subject of debate. The purpose of the study was to compare the isokinetic torques for the trunk flexors/extensors, hip flexors/extensors, and hip abductors/adductors muscle groups in osteitis pubis soccer players with that of normal athlete soccer players. Isokinetic data were collected from 20 osteitis pubis (OP) soccer players with mean ($\pm$ SD) for age of 19.94 ($\pm$ 3.51) years, mean height of 176.16 ($\pm$ 4.93) cm, mean weight of 70.91 ($\pm$ 7.26) Kg, and 20 healthy male soccer players (control group) with mean age of 20.78 ($\pm$ 3.35) years, mean height of 176.0 ($\pm$ 4.15) cm, and mean weight of 71.33 ($\pm$ 7.35) Kg. Peak torque/body weight (PT/BW) was recorded from hip muscles as well as from trunk muscles at isokinetic concentric contraction mode with a speed of 180°/sec. A multivariate analysis of variance (MANOVA) was used for each hip muscle group's PT/BW, and trunk muscles, also (MANOVA) was conducted for each hip flexors/extensors (Flex/Ext) and adductors/abductors (Add/Abd) torque ratios to compare between control and OP groups. Independent samples t-test was conducted for abdominal/back (Abd/Back) ratio of control and OP groups with the initial alpha level set at 0.05 with subsequent Bonferroni adjustments. Additionally, one way analysis of variance (ANOVA) was conducted for Abdominal/Adductor peak torque ratio of control and OP groups. Finally, correlations were conducted to study the relationships between hip and trunk muscles in control and OP groups. Findings revealed that the hip flexors PT/BW value of OP group was significantly higher than that of control one. For the hip extensors, adductors, and abductors PT/BW values, there was no significant difference between the two groups of athletes. However, there was a significant increase in hip Flex/Ext peak torque ratio of OP group. Moreover, there was a significant decrease in PT/BW value of back muscles, with a subsequent significant increase in Abd/Back peak torque ratio in OP group. Finally, regarding the OP group, there was non-significant positive correlation between the hip flexors and adductors, abdominal, back muscles. As well as, there was non-significant weak positive correlation between the abdominal and back muscles. This study may support that a combination of factors may explain the pathogenesis of the OP in soccer players such as excessive back muscles weakness, muscular imbalance between the lower limbs, muscular imbalance between trunk and lower limbs.

Keywords: Osteitis pubis, Isokinetic evaluation, Concentric contraction, Hip and trunk muscles.



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