

درد و یا آسیب بیشتر اتفاق بیفتد و به عنوان یک راه‌حل حرکتی بلندمدت، مطلوب نیست.

نتایج پژوهش حاضر و مطالعات پیشین که نشان می‌دهد افراد مبتلا به درد مزمن کشاله ران از یک استراتژی اصلاح شده حین اجرای برش جانبی استفاده می‌کنند (۱۳، ۳)، مطابقت دارد. این اختلال حرکتی در مفاصل در طول حرکات تکراری و طولانی مدت ممکن است منجر به اختلال در توزیع نیروهای برشی در اندام تحتانی شود که منجر به افزایش بار روی مفاصل اندام تحتانی و افزایش فشار مکرر بر کشاله و عضلات ران و به دنبال آن، درد طولانی مدت و آسیب‌های ثانویه مانند استئوآرتریت ران می‌شود.

نقش نویسندگان

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ارزیابی تخصصی دست‌نویس از نظر مفاهیم علمی: بهنود جعفرپور، مهدی خالقی تازجی، امیر لطافتکار، علی عباسی
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مسئولیت حفظ یکپارچگی فرایند انجام مطالعه از آغاز تا انتشار و پاسخگویی به نظرات داوران: بهنود جعفرپور، مهدی خالقی تازجی، امیر لطافتکار، علی عباسی

منابع مالی

تحقیق حاضر برگرفته از رساله مقطع دکتری بیومکانیک ورزشی با کد اخلاق IR.SSRC.REC.1400.064، مصوب دانشگاه خوارزمی می‌باشد و هیچ‌گونه حمایت مالی دریافت نکرده است.

تعارض منافع

بنا بر اظهار نویسندگان، نویسندگان پژوهش حاضر تعارض منافع ندارند. دکتر خالقی، دکتر لطافتکار و دکتر عباسی از سال ۱۳۹۹ به عنوان دانشیار در دانشگاه خوارزمی مشغول به فعالیت می‌باشند. بهنود جعفرپور از سال ۱۳۹۶ دانشجوی مقطع دکتری دانشگاه خوارزمی رشته بیومکانیک ورزشی می‌باشد.

محدودیت‌ها

از محدودیت‌های مطالعه حاضر می‌توان به اجرای تکلیف پرش جانبی متقاطع در محیط آزمایشگاه اشاره کرد که ممکن است موجب شود عملکرد بازیکن با عملکرد واقعی او در شرایط تمرینی و زمین تمرین، فاصله داشته باشد.

پیشنهادها

پیشنهاد می‌شود در تحقیقات آینده از سیستم‌های آنالیز حرکت پوشیدنی IMU به منظور ثبت کینماتیک حرکت در خارج از محیط آزمایشگاه استفاده شود. این حسگرها به دلیل قابلیت حمل آسان، امکان ثبت داده در محیط خارج از آزمایشگاه و در محیط تمرین ورزشکاران را فراهم می‌کند که موجب می‌شود عملکرد بازیکن به عملکرد واقعی او در طی تمرین و مسابقه نزدیک‌تر باشد. همچنین، پیشنهاد می‌گردد در پژوهش‌های آتی، همانگی و تغییرپذیری همانگی اندام تحتانی در پای غیر آسیب دیده ورزشکاران نیز مورد بررسی قرار گیرد.

نتیجه‌گیری

نتایج مطالعه حاضر اختلال در همانگی و تغییرپذیری همانگی در افراد مبتلا به درد کشاله ران را نشان داد که می‌تواند ناشی از به کارگیری استراتژی‌های جبرانی باشد و منجر به تغییر توزیع نیروها و به دنبال آن، ممکن است منجر به اضافه بار ساختاری و درد شود. این اطلاعات می‌تواند در انجام معاینات پزشکی و همچنین، طراحی تمرینات بازتوانی افراد مبتلا به درد کشاله ران مفید باشد.

تشکر و قدردانی

تحقیق حاضر برگرفته از رساله مقطع دکتری بیومکانیک ورزشی با کد اخلاق

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Comparison of Coordination and Coordination Variability of Lower Limb Joints during Cross Side-Cutting in Athletes with Chronic Groin Pain and Healthy Athletes

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Original Article

Abstract

Introduction: Chronic groin pain is a common and painful condition resulting in impaired performance and loss from participation in sports. High prevalence rate, complex anatomy, and long-term rehabilitation are among the challenges of this injury. Despite extensive clinical and medical studies in this field, groin pain in athletes remains unknown in terms of its biomechanical indicators, especially coordination and variability. Therefore, this study was conducted with the aim to compare lower limb joints' coordination and coordination variability between athletes with chronic groin pain and healthy athletes in the side-cutting maneuver.

Materials and Methods: The present research was conducted on 28 young football players (14 people in the chronic groin pain group and 14 people in the control group). Motion analysis cameras were used to collect 3D kinematic data of the lower limb joints. The coordination and coordination variability of hip-knee and knee-ankle joints in 3 planes were calculated using the continuous relative phase (CRP) method. Independent t-test was used to compare the two groups.

Results: Subjects with chronic groin pain have more out-of-phase movement in hip-knee coordination in the frontal plane, more significant variability in hip-knee and knee-ankle coordination in the frontal plane, and thigh-knee coordination in the horizontal plane.

Conclusion: The results of the present study show a decrease in coordination and an increase in the variability of lower limb coordination in subjects with chronic groin pain, which may lead to compensatory strategies, thus changing the distribution of forces, and resulting in pain and secondary injuries.

Keywords: Groin; Kinematics; Pain

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