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Workers Report Lower Back Pain without a Specific Disease

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Abstract

Generally, Bursitis develops in response to frictional stress that is applied directly over the bursae of the knees, such as that caused by repetitive kneeling. A variant form, pyogenic bursitis, develops as a result of penetrating skin injury.

Keywords: Bones; Kneeling; Collateral ligaments; Positive association; Controlling risks; Handling aid

Introduction

The large pre-patellar bursa, which lies between the patella and the skin, is most commonly involved in bursitis conditions. Bursae are very small, soft, fluid-filled sacs surrounding muscles, bones and tendons. Their function is to cushion the motion between bones, tendons and muscles near the joints in order to allow the joints to slip and slide over one another with reduced friction, thereby reducing potential pain. Workers who develop bursitis generally present with tenderness and swelling directly over the patella and have decreased range of motion of the knee due to pain and tightening of the skin over the patella [1]. The term stress reaction describes bone with evidence of remodelling but with an absence of radiological evidence of fracture. The process leading to stress reaction and subsequent stress fracture actually involves physiological adaptation of bone to mechanical loading. Stress reaction/fracture is the result of repeated micro-injuries to bone, which occur when its maximum strength is exceeded by an applied force and the natural process by which bone adapts to stress is prevented. It is more common in people undergoing military training and in athletes, particularly long distance runners, and much of the information has derived from studies focused on these populations. Only one study was found that associated the condition with occupational workers [2].

Discussion

Cases of stress fracture of the tibia and fibula had previously been reported in ballet dancers and they presented the case of a 59 year-old male welder who presented with a stress fracture to the left distal tibia and fibula due to heavy lifting at work. In the lower leg, stress fracture is usually associated with the tibia rather than with the fibula, as the fibula tends to play a minor role during axial loading of the limb. Various conditions of the ankle and feet have been identified such as sprained ankle, anterior compartment syndrome, Plantar Fasciitis, Achilles Tendonitis, foot corns, and Halux Valgus, but the aetiology of many as work-related is still in question. Guyton et al. For example, critically reviewed the literature on the aetiology of foot and ankle disorders commonly involved in compensation litigation, i.e., Hallux valgus, inter-digital neuroma, tarsal tunnel syndrome, lesser toe deformity, heel pain, adult acquired flatfoot and foot and ankle OA. The authors concluded from the results that the current literature did not support the view that they are caused by cumulative trauma such as may occur in industrial workplaces. The use of occupational group or job title as a measure of work exposure is, however, subject to error, as job titles do not commonly represent the true exposure of the worker, workers with the same job title can have different exposures based on the workplaces particular needs. Forde et al, among others, has called for careful evaluation of task content and exposure profiles inherent in different jobs through direct observation and measurement instead of relying on job nomenclature as representative of exposure. They found that, regardless of anatomical region, work speciality did not associate significantly with current self-reported symptoms. Unfortunately, to date, only few of studies investigating the risk factors for MSDs have included direct observation procedures for evaluation of the workplace exposures. The literature review carried out by Jensen concluded that there was moderate evidence for a positive association of the above factors with knee conditions. Of twelve studies, which reported associations between knee and kneeling or squatting, six were deemed of sufficiently high quality in respect of the applied methodology [3]. The impact forces of ten male participants while exiting two tractors, a step-van, a box-trailer and a cube van. They found that impact forces as high as bodyweight were generated when exiting was done without use of provided accessories, however, full utilisation of the steps and grab-rails resulted in impact forces that were on average less than twice body weight [4]. The impact forces and biomechanical stress on the lower limbs of fire fighters when they stepped down from various parts of their emergency vehicle, backing the street and facing the street. The results showed that stepping down from the cab facing the street produced impact forces that were about body weight, whereas, stepping down backing the street produced significantly less impact force and better distribution of the energy over time, which they attributed to better control of the descending leg, and ability to utilise the provided assist aids. Previous injury is considered to present a long-term risk, and the effect has been attributed to the fact that performance of physical activities outside of work improves work ability and balance control [5]. Non-participation in sport associated with prolonged sickness leave due to symptoms of the lower extremity. Additionally they found that workers in inactive jobs who reported many non-sedentary activities outside of work tended to have fewer symptoms and less sickness leave due to lower extremities injuries and pain. The study says a case-control investigation on hospital patients with hip and knee, found that amongst other risk factors, history of joint injury was significantly associated with the two conditions in both males and females. Individual risk factors for hip in a population-based case-

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control study. A total patients listed for hip replacement because of over a period were compared with an equal number of controls selected from the general population and individually matched for age, sex, and family practitioner. The results showed that previous hip injury was an independent risk factor for hip among men and women and there was a weak positive association with prolonged regular sporting activity. The evidence for age as a risk factor is contradictory, in that some identified significant association while others did not. Notwithstanding, it is generally reported that older workers are more predisposed to MSD conditions than younger workers, due to the natural degradation of the body that occurs with aging. Investigated implementation strategies for introducing new work tools and work methods in the floor laying trade and concluded that one consisting of different measures was most effective [6]. The new working method, which required the workers to stand instead of kneel or squat, showed a reduced risk of severe knee disorders and a reduced level of perceived knee pain in those who already had knee pain. Furthermore, the new work method did not appear to cause musculoskeletal health problems in other parts of the body. The authors opined that the strategy may also succeed in other trades in the construction industry, but it takes time to implement and requires very good collaboration between the employers and trade union. . The results showed clear benefits for most of the interventions, particularly where the company had already started to incur costs due to suboptimal task design or workplace organisation [7]. These observations suggest that workplace redesign control in the workplace, particularly when the worker is thereby encouraged to adopt optimal work positions/postures and to exert reduced levels of tasks forces. Barring societal factors that might discourage implementation of the measures, there are also real cost benefits to be gained. Knee pads are useful for protection of the knee while kneeling on hard floor surfaces, particularly against bursitis conditions, but they do not mitigate the risks of extreme flexion of the knee [8]. Their benefit is largely in respect of preventing lacerations and penetrating injuries, as well as improving comfort by reducing contact stresses, it is not known whether they reduce the risk of other disorders such as meniscal lesions. Also, one style of protection device is not likely to fit all needs. This author identified that knee pads used by tile setters must be resistant to the moisture, while carpenters would seldom work on wet surfaces and roofers probably should not wear pads with a slippery outer shell. Some caution is therefore required during their selection. However, favourable worker comments indicated that when they are applied they do eliminate some of the strain associated with work. The support devices that were proposed for relieving stress on the knee are aimed at providing support for the weight of the trunk and buttock thigh during kneeling [9]. Secondly, they are aimed at preventing maximal flexion and load bearing at the knee. Such a device which was introduced for use by roofers and labourers who had been diagnosed with a knee problem, as an intervention to eliminate both contact pressure on the knee during kneeling and compression of the knee joint with stretching of the collateral ligaments. Major benefits associated with application of the device were that the workers were enabled to adopt kneeling positions during work without any contact pressure on their knee, that the occurrence of contact pressure points on the lower leg due to load bearing is eliminated and that the ankle is kept free of any load bearing. While use of assistive devices and handling aids may be effective for controlling risks in a regular work place or work situation, there is evidence that they may not be applied even when available. The surveyed group, consisting of floor layers, that handling aids may not be applied when they are cumbersome to operate or they are perceived as causing the working time to be increased [10]. Also, the presence of wires and cables on the floor often made it impracticable for mechanical aids to be used.

Conclusion

Concluded that, the vast majority of technical, human factors and organisational interventions, which are recommended by standard texts of safety, consultants and safety courses, have not been adequately evaluated.

Acknowledgement

None

Conflict of Interest

None

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