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PERSPECTIVE OF ORTHOPEDIC PROBLEMS AND COMPLICATIONS

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ABSTRACT: Nine percentage of global mortality accounts trauma for these days and is a threat to health worldwide. Major traumatic injuries were orthopedic in nature and Injuries that cause damage to the musculoskeletal system, which includes bones, ligaments, joints, tendons, muscles, and nerves, are defined as orthopedic injuries. Immobilization is common in orthopedic problems. It is known, however that even short period of immobilization causes damage and complications to several immobilized regions. Another important issue is that the immobilization causes both physical and psychological problems. Immobilization complication can be easily prevented than treating when identified early which directly impacts on duration of hospital stay and economic burden.

Keyword: Orthopedic Injury, Immobilization, Complications

INTRODUCTION

Worldwide traumatic injuries pose a significant and increasing challenge to healthcare systems and are neglected epidemic in developing countries. According to the World Health Organization (WHO) Traumatic injuries are one of the most important public health concerns and it is estimated that Ninety percentages of the injuries occur in low and middle-income countries. Major traumatic injuries were orthopedic in nature and Injuries that cause damage to the musculoskeletal system, which includes bones, ligaments, joints, tendons, muscles, and nerves, are defined as orthopedic injuries (Velpula Saikiran, 2019).

PREVALANCE OF ORTHOPEDIC PROBLEMS

In middle and low- income countries only limited number of studies has been conducted on the epidemiology of traumatic orthopedic injuries. With a prevalence of 21.8% and 35.1% studies have shown that falls are the second most common determinant of traumatic orthopedic injuries. With a prevalence of 63.6% and 39.1% studies have shown that Road Traffic Accidents (RTAs) are the most common determinant of traumatic orthopedic injuries. RTAs are the most common determinant of 49.3% and 68.4% reported by some researchers. Similarly, falls have been shown to be a serious public health problem worldwide (WHO report, 2007). Studies generally show that orthopedic injuries predominantly affect younger male adults and Fractures being the most common injury. Fractures make up the majority of the reason for which a person is admitted to the orthopedic department as inpatient but there are also many other problems like tumors, infections, deformities, etc. which may necessitate admission. Nine percentage of global mortality accounts trauma for these days and is a threat to health worldwide. (Young & Taylor, 2015)

Road Traffic Accident (RTA) lies amongst top five causes of morbidity and mortality in South East Asian countries. The patterns of orthopedic injuries and admissions is the hope that it will aid orthopedic doctors and paramedical personnel involved in the care of these patients to maintain a standard treatment protocol along with proper planning for better care. This will also help the health care team to keep high index of suspicion with regards to the possibility of other associated fractures or system involvement so that these can be identified and treated promptly. To manage the available resources, planning training opportunities and predict areas, where allocation of resources could improve patient care within the constraints of the current hospital budget knowledge of the entire trauma workload at multispecialty, is essential (Velpula Saikiran, 2019).

Velpula, et al. (2019) conducted a retrospective cohort study on Epidemiology of orthopedic trauma admissions in a tertiary level multispecialty hospital in Warangal between September 2017 and August 2018. The study aim was to analyze the spectrum of orthopedic admissions. Accordingly one year registry data of orthopedic admission was analyzed. The study results revealed that 1020 patients were admitted in orthopedic department over one year period. The patient's average age was 41 and 14 years with gender ratio of 61:39 male and female. Patient age was noticed. Young adults up to the age of 35 years old showed higher rates of admission. The study reported case distribution based on diagnosis that upper limb fractures were 91, 330 lower limb fractures, 14 neck fractures, 3 cellulitis, 112 cervical PIVD, lumbar PIVD 173, cervical and lumbar 53, 104 implant removal, head injury 117, 19) chest and abdomen injury, spine 02 and with 02 patients admissions not specified. The study results also revealed that there was a rising incidence of orthopedic fractures in adult males, and leading cause for orthopedic admissions was fractures of lower limb which accounted more than 2/3 of the total admissions. Fractures were the most common type of injuries, while the most common determinants of the injuries were falls, RTAs. The study suggested that the results will help guide where efforts to improve healthcare delivery and public health policy should be focused.

Huda, et al. (2014) performed an analytical study on pattern of orthopedic injuries among patients attending the emergency department of Teerthanker Mahaveer Medical College & Research Centre, a tertiary care hospital situated in Moradabad, Uttar Pradesh, India at National Highway-24 during June 2012 to May 2013. The study results revealed that, 1110 injured patients were seen in the emergency department. Out of which 81.89 percent were in the age group of 11-44 years, 71.09 percent were males and 28.9 percent were female patients. The commonest injury was fracture with 68.64 percent and the most common site was lower limbs in 48.16 percent cases (n=367) with 32.97 percent of tibia/fibula being the most common bones to be fractured.

IMMOBILIZATION

Kinesis, a word of Greek origin means motion or to move. The human body is designed for physical activity and movement. Even at rest, the normal healthy adult changes position on average every 11.6 minutes during sleep; this physiological requirement for movement is termed the minimal physiologic mobility requirements (Parmar Glenis 2017). Mobility is an individual's ability to move about freely. Mobility serves many purposes including expression of emotions, self-defense, attaining basic needs, completing activities of daily living and performing recreational activities, besides assisting in maintaining the body's normal physiological activities (Perry & Potter 2016).

As a part of orthopedic treatment patients are being immobilized for certain period of time. Immobility is a condition in which a patient is unable to move either due to his disease condition or as part of his treatment, thus jeopardizing all the above activities that mobility helps him achieve.

Patients on the orthopedic service experience the difficult situation of having a part of the body immobilized due to fracture, road traffic accident or surgery with a plaster splint, internal or external fixations either for short duration or for extended period of time. These situations lead to the patients a provisional condition of limited full abilities restraining their locomotion movements, as well as their routine activities which ultimately leads to complications like deep vein thrombosis, orthostatic hypertension, muscle, osteoporosis, contracture, pulmonary embolism, pneumonia, atelectasis, urinary tract infection, calculi, pressure ulcer and constipation.

Immobilization is common in orthopedic problems. It is known, however that even short period of immobilization causes damage to several immobilized regions. Another important issue is that the immobilization causes disorders in other parts of the body, altering metabolism.

ORTHOPEDIC COMPLICATIONS TO CONCENTRATE

Approximately, 50% of the hospitalized individuals have mobility impairment. Immobilization and inactivity are frequently present among patients with involvement of musculoskeletal and neurological systems and also among critically ill patients. An immobilized individual is at a greater risk of developing physical and psychological problems and complications such as deep vein thrombosis, contracture, pulmonary embolism, pneumonia, orthostatic hypotension, pressure ulcer, calculi, urinary tract infection, anemia, osteoporosis, constipation and fecal impaction, muscle atrophy, glucose intolerance, negative nitrogen balance, depression and psychosis.

Orthopedic trauma is an unforeseen life-changing event. Serious injuries include multiple fractures and amputation. Physical rehabilitation has traditionally focused on addressing functional deficits after traumatic injury, but important psychological factors like anxiety, stress and depression also can dramatically affect acute and long-term recovery.

Patients on the orthopedic service are those who require treatment for fractures, deformities, and diseases or injuries of some part of the musculoskeletal system. Some patients will require surgery, immobilization, or both to correct their condition. The patients will be managed by bed rest, immobilization, and rehabilitation.

Prolonged bed rest and immobilization inevitably lead to complications. These complications are much easier to prevent than to treat. Research studies in relation to complications of immobilization are conducted more often in Western countries, but have not gained importance as a major health problem in India.

Vincent, et al. (2015) conducted a review study on Psychological Distress after Orthopedic Trauma: Prevalence in Patients and Implications for Rehabilitation. This review presents the effects of orthopedic trauma on psychological distress, potential interventions for distress reduction after trauma, and implications for participation in rehabilitation. Patients who have survived commonly experienced post-traumatic stress syndrome, depression, and anxiety, all of which interfere with functional gains and quality of life. More than 50% of survivors have psychological distress that can last decades after the physical injury has been treated. Early identification of patients with distress can help care teams provide the resources and support to offset the distress. The study concluded that there were Several options that help trauma patients navigate their short-term recovery include holistic approaches, pastoral care, coping skills, mindfulness, peer visitation, and educational resources. The long-term physical and mental health of the trauma survivor can be enhanced by strategies that connect the survivor to a network of people with similar experiences or injuries facilitate support groups, and social support networking.

Gururaj (2005) published a paper on Injuries in India: A national perspective stating that during the year 2005 nearly 17,000,000 persons were hospitalized (for short or long periods). Further, nearly 42,500,000 persons would have minor injuries, incapacitating them for short or long periods. The outcomes of the RTIs were major physical and psychological problems.

A survey conducted by a research center in Delhi and National Capital Region gave a statistical data of 1000 bedridden patients and their problems and complications in Delhi and National Capital Region. It was found that percentage of bedridden male patients (67.5%) is higher than the bedridden female patients (32.5%) among total bedridden patients. Almost 76.5% were partially affected, while 23.5% bedridden patients were severely affected. Approximately, 13.9% of the respondents, approached by the interviewers, were affected by different kinds of mental/psychological problems and 65% of the bedridden patients were reported from older person category. It was found that the bedridden patients were facing different types of problems such as depression/nervousness, bedsores, constipation, etc.

CONCLUSION

Immobilization complications due to orthopedic problems are preventable; it is easy to prevent rather than to treat these complications in terms of escalating cost, health status of the patient and nursing facility. Health is primarily focused on preventive, promotive, and maintaining aspect. The knowledge regarding prevention of complications of immobilization is on paper yet not effectively implemented in practice.

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