

Fractures and Its Rehabilitation

Harisha A. L.*

Scholars, Physical Education (UCPE)

Abstract – Youngster athletes taking part in games or physical activities are in majority and they are merely small adults. Their bones, muscles, tendons and ligaments are still growing, which makes them more susceptible to injuries. The area of developing cartilages where bone growth occurs in youngsters or weaker than the nearby ligaments and tendons.

Fracture is nothing but a broken bone. Simple fracture- in a simple Fracture a bone breaks, but the skin over it does not tear or get injury. Compound fracture- in this both bone and skin breaks and there is a danger of infection. Multiple fractures- it means there is a more than one fracture in a bone. Comminuted fracture – it means the bone has shattered, usually owing to a crushing injury. Spiral fracture- it results when a bone broken by a twisting force.

Greenstick fracture – here the break occurs only part way through the bone. Impacted fracture – when the broken ends of the bones drive in to one another. Stress fracture – is an overuse injury. it occurs when a muscle becomes fatigue and unable to absorb added shock. The fatigue muscle transfers the overload of stress to the bone causing a tiny crack called a stress fracture.



INTRODUCTION

Every day millions of people in the world participate in games and sports activities, from soccer fields to soft ball field and Kabaddi courts. It's called as playing, but sports activities are more than play. Participation in sports improves physical fitness, coordination and self-discipline and gives children opportunities to learn team work. Games and sports also results in injuries some minor, some serious and still others resulting in lifelong medical problems.

A bone fracture is a medical condition in which there is damage in the continuity of the bone. A bone fracture can be the result of high force impact or stress, or a minimal trauma injury as a result of certain medical conditions that weaken the bones, such as osteoporosis, bone cancer, or orthogenesis imperfect.

Although broken bone and bone break are common colloquialisms for a bone fracture, break is not a formal orthopedic term.

PURPOSE:

To know the knowledge of rehabilitation procedure to overcome the bone fractures in sports.

RECOMMENDATIONS

Some of the common sports injuries are sprain, strain, fracture, dislocation, abrasion and contusion.

BONE FRACTURES:

Fracture is nothing but a broken bone. There are many types of fractures as follows,

- **Simple Fracture-** in a simple Fracture a bone breaks, but the skin over it does not tear or get injury.
- **Compound Fracture-** in this both bone and skin breaks and there is a danger of infection.
- **Multiple Fractures-** it means there is a more than one Fracture in a bone.
- **Comminuted fracture** – it means the bone has shattered, usually owing to a crushing injury.
- **Spiral fracture-** it results when a bone broken by a twisting force.
- **Greenstick fracture-** here the break occurs only part way through the bone.

- **Impacted fracture**- when the broken ends of the bones drive in to one another.
- **Stress fracture** – is an overuse injury. It occurs when a muscle becomes fatigue and unable to absorb added shock. The fatigue muscle transfers the overload of stress to the bone causing a tiny crack called a stress fracture.

SIGNS & SYMPTOMS:

Although bone tissue itself contains no nociceptors, bone fracture is painful for several reasons.^[2]

- Breaking in the continuity of the periosteum, with or without similar discontinuity in endosteum, as both contain multiple pain receptors.
- Edema of nearby soft tissues caused by bleeding of torn periosteal blood vessels evokes pressure pain.
- Muscle spasms trying to hold bone fragments in place. Sometimes also followed by cramping.

Damage to adjacent structures such as nerves or vessels, spinal cord and nerve roots (for spine fractures), or cranial contents (for skull fractures) can cause other specific signs and symptoms.

EFFECTS OF SMOKING

Smokers generally have lower bone density than non-smokers, so have a much higher risk of fractures. There is also evidence that smoking delays bone healing. Some research indicates, for example, that it delays tibial shaft fracture healing from a median healing time of 136 to 269 days. This means that the fracture healing time was approximately doubled in smokers. Although some other studies show less extreme effects, it is still shown that smoking delays fracture healing.

REHABILITATION:

Treatment of bone fractures are broadly classified as surgical or conservative, the latter basically referring to any non-surgical procedure, such as pain management, immobilization or other non-surgical stabilization. A similar classification is open versus closed treatment, in which open treatment refers to any treatment in which the fracture site is surgically opened, regardless of whether the fracture itself is an open or closed fracture.

The most important treatment is rest. Sports man need to rest from the activity that caused the fracture and

engage in pain free activity for 6 to 8 weeks. If the activity that caused the stress fracture too quick, larger, order to heal the fractures can develop. Re injury also could lead to chronic problems where the stress fracture might never heal properly. Rehabilitation usually includes muscle strength training to help dissipate the force transmitted to the bone.

• PAIN MANAGEMENT.

In arm fractures in children, ibuprofen has been found to be as effective as a combination of acetaminophen and codeine.

• IMMOBILIZATION.

Since bone healing is a natural process which will most often occur, fracture treatment aims to ensure the best possible function of the injured part after healing. Bone fractures are typically treated by restoring the fractured pieces of bone to their natural positions (if necessary), and maintaining those positions while the bone heals. Often, aligning the bone, called reduction, in good position and verifying the improved alignment with an X-ray is all that is needed. This process is extremely painful without anesthesia, about as painful as breaking the bone itself. To this end, a fractured limb is usually immobilized with a plaster or fiberglass cast or splint which holds the bones in position and immobilizes the joints above and below the fracture. When the initial post-fracture edema or swelling goes down, the fracture may be placed in a removable brace or orthosis. If being treated with surgery, surgical nails, screws, plates and wires are used to hold the fractured bone together more directly. Alternatively, fractured bones may be treated by the Ilizarov method which is a form of external fixator.

• SURGERY.

Surgical methods of treating fractures have their own risks and benefits, but usually surgery is done only if conservative treatment has failed, is very likely to fail, or likely to result in a poor functional outcome. With some fractures such as hip fractures (usually caused by osteoporosis), surgery is offered routinely because non-operative treatment results in prolonged immobilization, which commonly results in complications including chest infections, pressure sores, deconditioning, deep vein thrombosis (DVT) and pulmonary embolism, which are more dangerous than surgery. When a joint surface is damaged by a fracture, surgery is also commonly recommended to make an accurate anatomical reduction and restore the smoothness of the joint.

Infection is especially dangerous in bones, due to the recrudescence nature of bone infections. Bone tissue is predominantly extracellular matrix, rather than living

cells, and the few blood vessels needed to support this low metabolism are only able to bring a limited number of immune to an injury to fight infection. For this reason, open fractures and osteotomies call for very careful antiseptic procedures and prophylactic antibiotics.

CONCLUSION:

Here by I conclude that sports person or athletes and the general public as well can sustain this injury. People at risk for the injury have a history of bone fractures in poor physical condition. So every sportsmen, coaches and physical educators should have knowledge about the sports injuries and rehabilitation programs.

REFERENCE:

- Bone%20fracture%20-%20Wikipedia,%20the%20free%20encycloped%20ia.html
- Griffith, H. Winter (1989) complete guide to sports injuries New Delhi metropolitan book co. Pvt. Ltd.
- Yudenich, V. V. (1986). Accident first aid Moscow: Mir publishers www.sportsinjuryclinic.net

Corresponding Author

Harisha A. L.*

Scholars, Physical Education (UCPE)

E-Mail – harishal1993@gmail.com