

A Quick Guide to Open Fractures



Open fractures are emergency cases that require immediate assessment by orthopedic experts. These are severe injuries that occur because of high-energy traumas like automobile accidents or gunshots.

These fractures are often treated with internal or external fixation that requires the use of [orthopedic implants](#). Depending on the severity of the fracture, other treatments may also be required. In this post, we will be discussing open fractures in detail along with their investigations and management.

If such fractures are left untreated, there will be a high risk of morbidity and mortality. Thus, urgent assessment and management are necessary.

Pathophysiology

Open fractures are classified as those where the fractured bone protrudes out of the skin and makes direct communication with the external environment. These fractures may be either “in-to-out” or “out-to-in” injuries. This means whether the bone beneath the skin moves out or something penetrates the skin from the outside, like in ballistic injuries or direct blows.

The commonest open fractures are the tibial, phalangeal, forearm, metacarpal, and ankle.

Clinical Features of Open Fractures

The patient will come with a complaint of pain, swelling, and deformity around the injured area. An overlying wound will be there and in severe cases, the bone may be coming out of the skin. During the examination, it is also necessary to check the neurovascular status along with the tissue loss, if there.

The healthcare service provider must also check for contamination at the wound.

Diagnosis of Open Fractures

The diagnosis will include a physical examination where the healthcare service provider will check for other injuries to rule out the possibility of life-threatening conditions. It is also important here to know the cause of injury along with the medical history to better identify the right surgery.

X-ray examinations and CT scans will also be required to identify damage to the surrounding tissues and the number of breaks.

Antibiotic and tetanus injections may also be given to help prevent infection.

Treatment of Open Fractures

Almost all open fractures require surgical intervention. It is important to go for surgery as soon as possible to avoid any serious complications. Before the surgical intervention, the healthcare service provider will clean the wound by removing damaged & contaminated tissues and irrigating the wound with a saline solution.

After wound cleansing, the surgeon will closely examine the injured site and stabilize the bone. Depending on the severity of the fracture, bone stabilization will be done either with internal or external fixation.

Internal Fixation

This procedure involves the application of metal plates, rods, & screws to stabilize fractured bone fragments in their true anatomical position while allowing them to heal. This technique is well-suited for fractures with minimal tissue or skin damage and the broken fragments can be well-aligned.

External Fixation

When it is not feasible to use implants and realign bone fragments, the surgeon will recommend external fixation at first. During this procedure, metal screws and pins are inserted above and below the fracture and they project out of the skin and attached to metal/carbon rods/bars.

In some cases, the external fixator is removed, and internal fixation is done after some time. Whereas sometimes the external fixator stays in place until the fracture heals.

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