Case Report of Neglected Osteomyelitis Treated With Debridement, Bone Grafting and External Fixator

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Case Report

Abstract: Osteomyelitis is inflammation of the bone caused by an infecting organism. Although bone is normally resistant to bacterial colonization, events such as trauma, surgery may disrupt bony integrity and lead to the onset of bone infection. Chronic osteomyelitis patients usually require antibiotics as well as surgery to repair any bone damage. An infection in bone can impede blood circulation within the bone, leading to bone death. Control of infection and stability of the bone are the main goal of treatment. Treatment of chronic osteomyelitis with debridement, bone grafting to fill the dead space with external fixator for bone stabilisation and antibiotics cover is found to be effective modality and avoids a second surgical procedure usually required in case treated with antibiotic beads.

Keywords: chronic osteomyelitis, debridement, bone grafting, external fixator.

Introduction

Osteomyelitis means infection of the bone or bone marrow; inflammation of the bone due to infection.[2] Post-traumatic osteomyelitis are bone infections that occur after trauma, such as a compound fracture or an open wound to surrounding skin and muscle.[2] An infection in bone can impede blood circulation within the bone, leading to bone death.[4] Chronic posttraumatic osteomyelitis requires a detailed history for diagnosis, including information regarding the initial injury and previous antibiotic and surgical treatment.[1] Chronic osteomyelitis patients usually require antibiotics as well as surgery to repair any bone damage. Draining the infected area, Debridement, Restoring blood flow to the bone, Removal of foreign objects if any, Stabilizing the affected bone are part of treatment.[2] Dead space refers to the soft tissue and bony defect left behind after debridement. Appropriate management of this space is necessary to reduce the risk of persistent infection.[1]

Case Report

18 years old male patient with alleged history of trauma nine months back came with chief complains of pain, minimal swelling and discharging sinus from anterior aspect of lower part of leg. Pain on and off since trauma later swelling developed then sinus since two months. Patient showed to local doctor after trauma but was not extensively studied. Patient had no constitutional symptoms and was able to walk with persistent pain. X-ray was done with routine blood investigations. Patient showed signs of post traumatic chronic osteomyelitis on x ray. Patient was admitted and broad spectrum antibiotics were started. Next day patient was operated under spinal anaesthesia with debridement, sequestrectomy with autologus cancellous bone grafting from iliac crest to fill the dead space. Bone stabilized with external fixation .The bony tissue excised was found to be sequestrum as per histopathological report. Culture report was sterile so broad spectrum antibiotics were continued for three weeks. Later patient was shifted on oral antibiotics and was discharged. Weight bearing was not allowed. Regular follow up of patient was done. Oral antibiotics were discontinued after three weeks. Protected weight bearing was started with walker support after six weeks post operatively. Full weight bearing was started by three months post operatively. Fixator was removed for which no anaesthesia was used .Figure-1 showing pre-operative x-ray and intra-operative photo.

Figure 1

Discussion

The diagnosis of chronic osteomyelitis complicating an inadequately treated acute haematogenous osteomyelitis is usually straightforward, especially when there are discharging sinuses with or

without fever. This results from misdiagnosis of acute osteomyelitis by many general and family physicians, and therefore inadequate treatment.[5] Antibiotic-impregnated beads may be used for temporary sterilization of dead space[1]. If the patient cannot tolerate surgery because they are very ill and could not endure the procedure and recovery, the doctor may use antibiotics for longer - in some cases even years - to suppress the infection[2]. A number of methods of management for chronic osteomyelitis have been described, usually with the goal of providing good quality soft tissue adjacent to the affected bone. [3] Papineau *et al*. described an open bone grafting technique for the treatment of chronic osteomyelitis. This procedure is based on the following principles granulation tissue markedly resists infection, autogenous cancellous bone grafts are rapidly revascularized and are resistant to infection, the infected area is completely excised, adequate drainage is provided, adequate immobilization is provided, and antibiotics are used for prolonged periods.[6]

Conclusion

Early diagnosis and prompt treatment of acute osteomyelitis is very crutial as it may prevent patients from undergoing extensive surgery. General physicians should always keep in mind the possibility of osteomyelitis and in case of doubt should always seek for an opinion. Treatment of chronic osteomyelitis with debridement, bone grafting to fill the dead space with external fixator for bone stabilisation with antibiotics cover is found to be effective modality and avoids a second surgical procedure usually required in case treated with antibiotic beads but such kind of conclusion requires a extensive comparative study to prove the point.

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