



SALVAGING THE VITAL SECOND TOE WITH TRANSPOSITION OF THE THIRD TOE – A 'SPARE PART' SURGICAL RECONSTRUCTION

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(ABSTRACT) A case of crushed foot with delayed presentation to the hospital is described, in which a healthy third toe with a mangled proximal phalanx base and metatarsal head was used to reconstruct an amputated second toe with intact base and metatarsal bone using the spare part surgery concept.

KEYWORDS : Spare Part Surgery; Toe Transposition; Crush Injury; Foot Salvage

INTRODUCTION

Spare part surgery concept is used in major reconstructive procedures in which healthy tissues from amputated parts are used in reconstructing the soft tissue defects without harvesting tissues from uninjured areas.

Case Description

A 25 years old male who had sustained crush injury to the right foot due to road traffic accident presented three days after the injury. On examination, there was an amputated second toe with severe crushing of the third and fourth metatarsal bones with viable toes as confirmed by good arterial bleeding on needle prick.



Radiograph of the foot revealed intact proximal phalanx base and metatarsal phalangeal joint of the second toe while the third toe's proximal phalanx base and metatarsal head were found crushed.



Under spinal anaesthesia and tourniquet control, the wound was debrided and washed. The crushed third metatarsal and the proximal phalanx bones were excised without disturbing the neurovascular pedicle, tendons and the rest of the third toe was transposed over the base of the proximal phalanx of the second toe and secured with K wire. The fourth toe injury was managed conservatively and the wound was partly closed primarily and rest was covered with skin graft.



The bone and soft tissue wounds healed well thus salvaging the foot both functionally and aesthetically.



DISCUSSION

Reconstruction is a challenging task because, in addition to the restoration of form and function of the injured part, the tissue transferred to reconstruct should also not cause any secondary defect or deformity in its donor site. The concept of spare part surgery^{1,2} is used in major reconstructive procedures in which healthy tissues from amputated parts are scavenged and used in reconstructing the bone and soft tissue defects without harvesting tissues from uninjured areas.

The advantages are 1. Abundant availability of tissues such as skin graft, vein and arterial grafts, nerve grafts and microvascular free flaps. 2. No need to involve a healthy uninjured part. 3. No need to worry about donor site morbidity.

The disadvantages are 1. Unsuitable patient selection, in which an attempt to save a limb might cost the life of the patient 2. Failure of a free flap might again cost the patient his limb 3. Multiple procedures causing financial stress to the patient and family.

In those populations using chappals [Open toed foot wear] the second toe is vital in gripping the vertical limb of the foot wear along with the first toe. Without the second toe, a person cannot use a chappal as the gap between the first and third toes will be large and therefore cannot grip the vertical limb of the chappal. In this case, by transferring the third toe to the second toe site, we were able to preserve the vital second toe thus enabling the person to effectively use chappals.

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