

Introduction

Thumb is crucial finger for all hand functions as it contributes to 40%-50% of total hand functions. Thumb injuries are common and challenging because the restoration of the function in terms of opposition, sensation, length, stability, strength, mobility and cosmetic appearance should be considered. Understanding the Anatomy of the thumb bones, joints, ligament, muscles, tendons, nerves and blood supply is necessary in any reconstructive approach. Defects of the thumb should be evaluated carefully and could be classified by several classifications that help in choice of treatment plan. management includes conservative methods and varieties of surgical techniques which include use of skin grafts or local, regional, distant and free flap

Aim of the Work

The aim of the study was to formulate an algorithmic approach that assesses traumatic thumb defects, evaluates different modalities for soft tissue reconstruction of these defects and to discuss the advantages and complications of each modality.

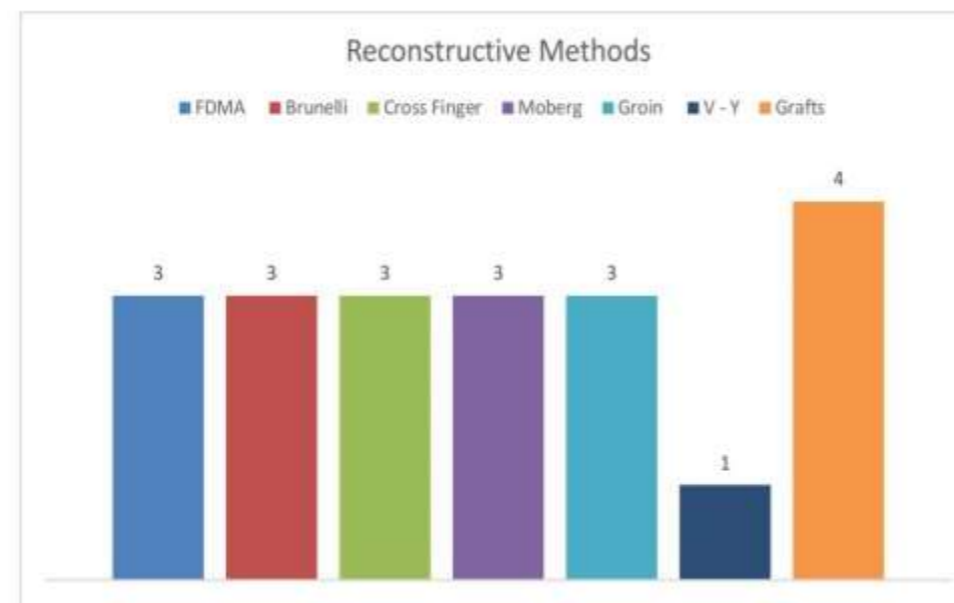
Patient and Methods

This study was designed as a clinical trial that recruited 20 patients presented with thumb defects to Alexandria Main University Hospital from January 2022 to July 2023. The patients were then followed up for a period ranging from 3 to 10 months. Finger tip outcome score was objectively used for assessment of reconstruction method.

Results

Patient's Characteristics in the study:

The study recruited 20 patients with a median age ranges from 5 years to 65 years. 17 (85%) of the recruited patients were males. 15 were smokers. Two of them had hypertension. 13 (65%) had right thumb defects while 7 (35%) had left thumb defects. 12 (60%) patients had volar defects, 2 (10%) patients had dorsal defects and 6 patients (30%) had defect that involved both surfaces. 4 patients had defects that are less than 2 cm, 9 patients had defects between 2 and 3 cm and 7 patients had defects that are larger than 3 cm.



Frequency of the reconstructive methods used in the study

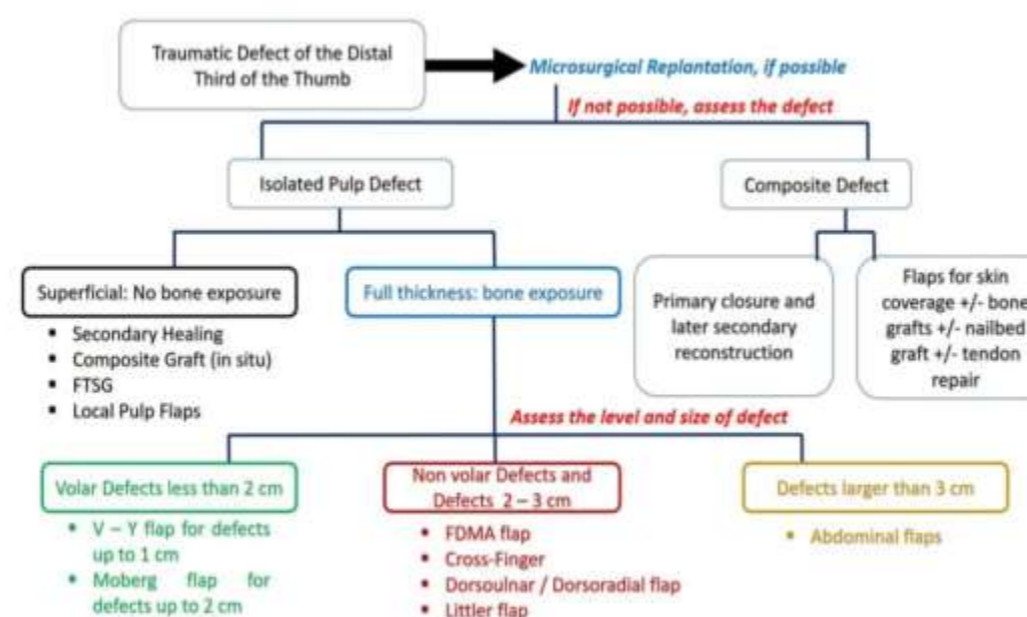
Six flaps were used in the reconstruction of the defects. Each was used in 3 patients with the exception of V – Y advancement flap that was used only in one patient. 4 patients had reconstruction with full-thickness skin grafts and one of them had reconstruction with full-thickness skin graft from amputated part.



Rt thumb reconstructed by foucher flap 6 months postoperative

Conclusion

In our study different modalities of soft tissue reconstruction of the thumb were assessed clarifying advantage and disadvantage of each modality. Any algorithm for management of thumb amputations start with replantation trial as first choice for amputations proximal to the base of the distal phalanx. Conservative management is very successful way of management then skin grafts whenever possible give satisfactory outcome. Workhorse flaps for thumb reconstruction include moberg, foucher, brunelli, moschella, cross finger and groin or abdominal flaps.



Algorithm for reconstruction of distal third thumb amputations and defects