RECIPROCAL PLANING

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INTRODUCTION

The technique of reciprocal planing can be a valuable ajunctive technique in reconstructive foot surgery. Reciprocal planing is a technique by which uneven or imperfectly fitted surfaces of bone that interface can be made congruous. The technique uses a back and forth (reciprocal) motion with an oscillating power saw blade to *melt away* surface irregularities which would prevent perfect fitting of apposing surfaces.

The technique is carried out while the apposing bones are held lightly touching and in desired alignment. The saw blade is passed quickly in and out down the center of the joint. No attempt is made to cut the bone, but the alternately angulated open saw teeth engage the high spots of the bone and literally plane them away.

The technique is most desirable when fitting osteotomies that are to be fixated with a compressive device. The primary goal of osteosynthesis is primary bone healing. This obviously cannot occur if the apposing edges are not well aligned and without surface irregularities.

The application of reciprocal planing is widespread in the field of foot surgery. Some of its applications are found in hallux interphalangeal joint arthrodesis, first metatarsal osteotomies, LisFranc's arthrodesis, triple arthrodesis, and ankle or pantalar arthrodesis.

The following illustrations of a base wedge osteotomy and of triple arthrodesis are good examples of its application (Figs. 1, 2).

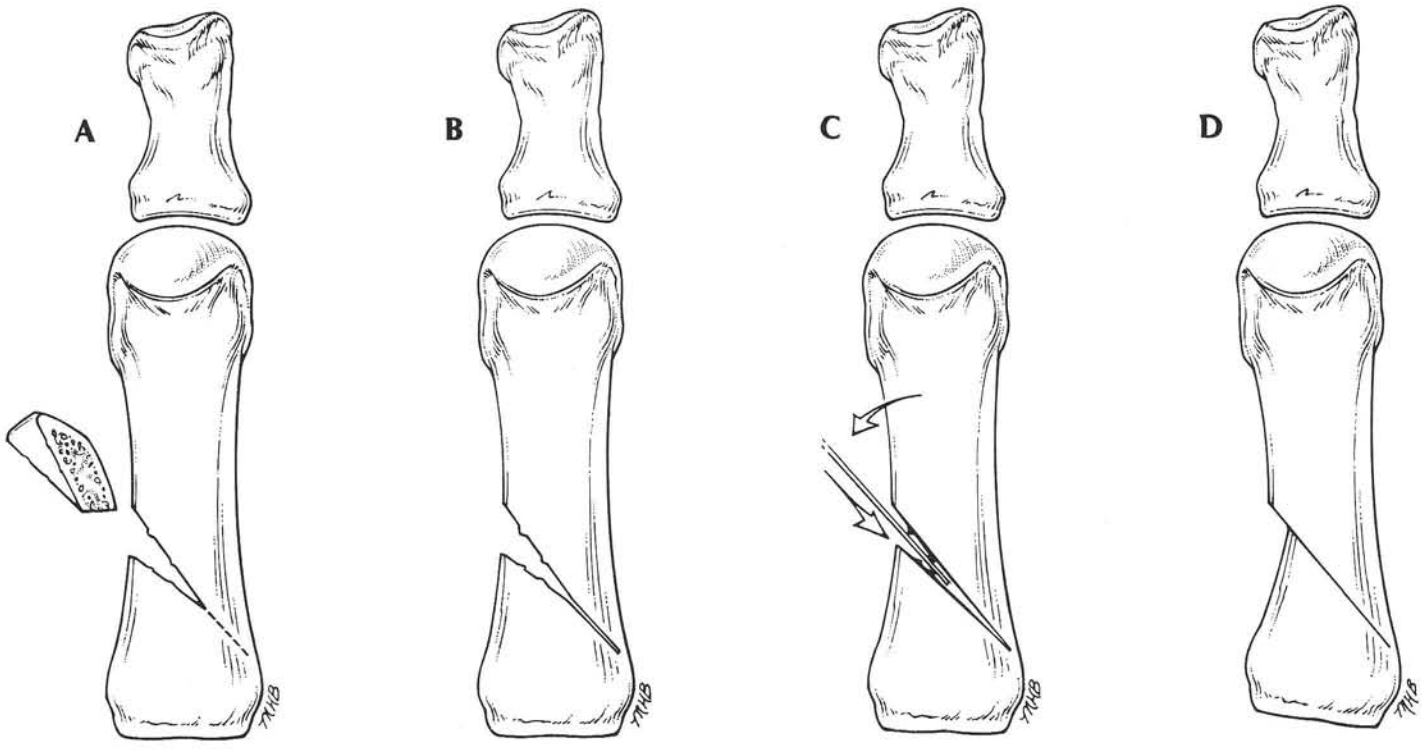

Fig. 1. Technique of reciprocal planing of base wedge osteotomy. A. Resection of wedges. B. Hinge weakened. C. Apposing bone is lightly compressed and high spots are resected. D. Osteotomy well apposed.

Discussion

The technique of reciprocal planing has a wide application in foot and ankle surgery. There are, however, a few cautions. First, the surgeon should be certain to hold the apposing parts in the desired alignment so that the surfaces, once planed, will fit in only the correctly aligned position. Second, the planing stroke must go fully through the depth of the surfaces to be fitted. An incomplete stroke will result in the creation of a ledge of bone at the point where the stroke prematurely ends its excursion. Finally, the stroke should be rapid and gentle but should stop when the surfaces fit. To continue with excessive planing will melt away excess bone, and in some instances (metatarsal osteotomies) this can result in overcorrection of the deformity. The technique is generally simple, yet if performed incorrectly can drastically compromise the surgical result.

CONCLUSION

It has been the authors' experience that reciprocal planing results in greater bone to bone surface contact. This in turn will facilitate healing and the patient's earlier return to normal activity.

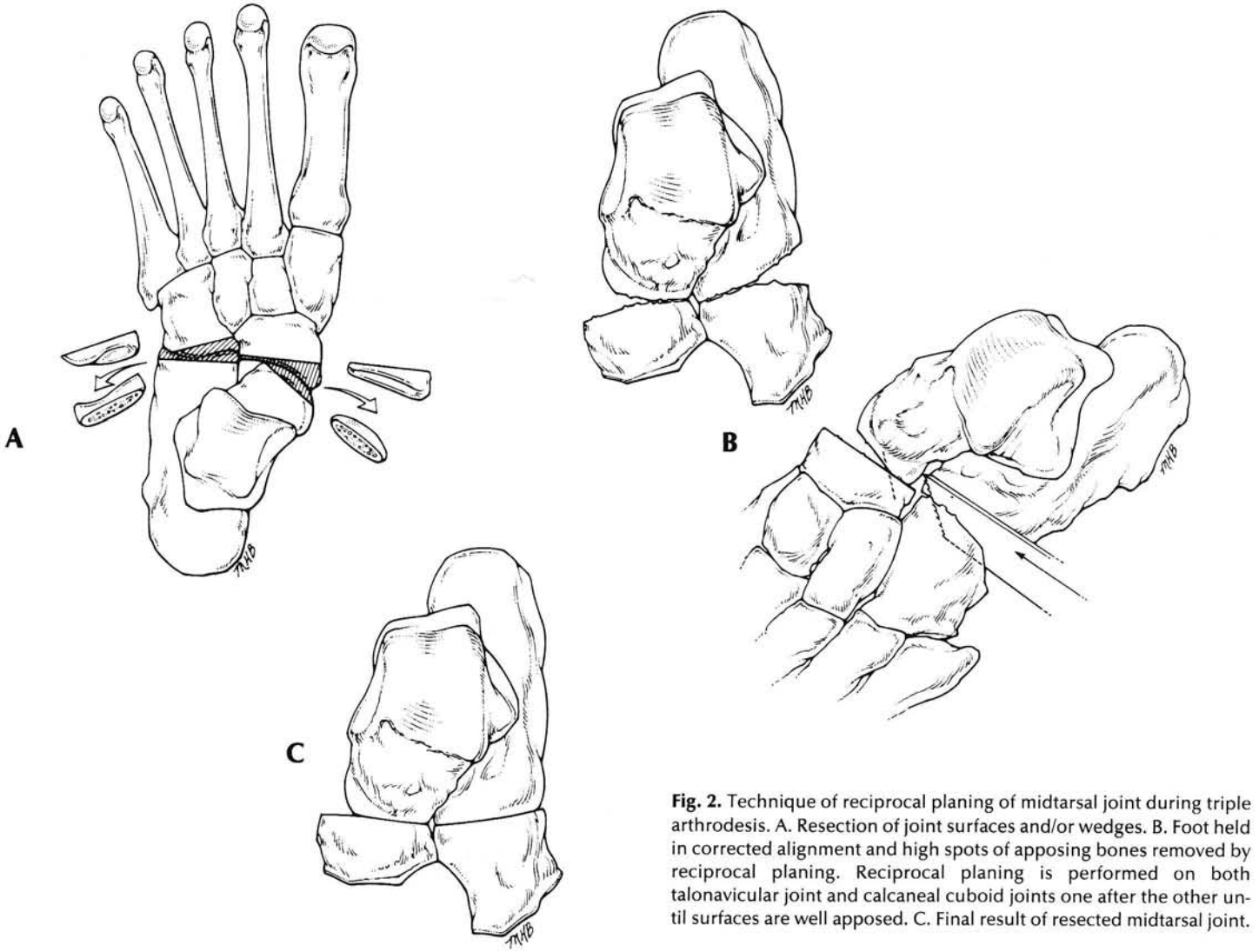

Fig. 2. Technique of reciprocal planing of midtarsal joint during triple arthrodesis. A. Resection of joint surfaces and/or wedges. B. Foot held in corrected alignment and high spots of apposing bones removed by reciprocal planing. Reciprocal planing is performed on both talonavicular joint and calcaneal cuboid joints one after the other until surfaces are well apposed. C. Final result of resected midtarsal joint.