



## Metallic Hemiarthroplasty Resurfacing Prosthesis

For The Hallux  
Metatarsophalangeal  
Joint

Technique:

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The BioPro® Hemi Implant is a simple, durable, metallic hemiarthroplasty resurfacing prosthesis for the hallux metatarsophalangeal joint capable of providing your patient with years of painless motion. Indicated for patients with osteoarthritis, rheumatoid arthritis, hallux rigidus, hallux limitus and degenerative changes of the first metatarsophalangeal joint associated with hallux abducto valgus and bunion deformity.

The HMP joint is exposed through a medial incision, slightly curved dorsally to reduce the potential for postoperative shoe pressure and the development of a painful scar.

The capsule is incised with a straight medial incision and is released subperiosteally by sharp dissection from the basal portion of the proximal phalanx. (Fig. 1)

Meticulous care must be taken to avoid the inadvertent release of the insertions of the flexor hallucis brevis and the abductor and adductor tendons of the great toe to minimize the potential for postoperative hallux contractural deformities. The tendons are left attached to the periosteal sleeve to ensure that they are not released in the dissection.

The articular surface of the phalanx is resected in a common flat plane with an oscillating saw, removing only sufficient bone to avoid prosthetic overspacing and excessive joint tension and to accommodate the thickness of the articulating plate of the implant. (Fig. 2 & 3). The plane of the resection should be parallel to the plane of the concavity of the phalangeal articular surface.

Marginal osteophytes are resected completely from the lateral dorsal, and medial aspects of the metatarsal head sufficiently to allow normal, unimpinged motion of the "new" joint. (Fig. 4)

Lateral osteophytes may be removed through the same incision using a curved osteotome or a small rongeur.

Implant selection is made using the BioPro® sizer guide (template). Care should be taken to select the size (small, medium, medium/large, or large) which most closely approximates the dimensions of the osteotomized phalanx and does not extend beyond the margins of the cut surface. The sizer guide features a center hole which is used either as a punch guide or as a guide for the pin of the trial prosthesis. The pin of the trial creates a mark on the osteotomized surface which is then used to access the medullary canal of the phalanx. The canal should be opened in a transverse plane to accommodate the geometry of the final implant stem. (Fig. 5 & 5b)

A small bur, narrow osteotome, or the appropriate instrument is used to accomplish this cut.

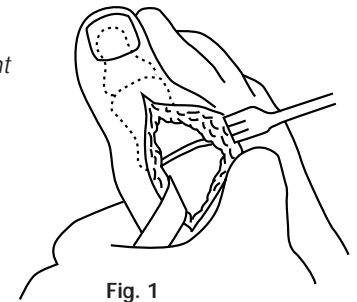


Fig. 1

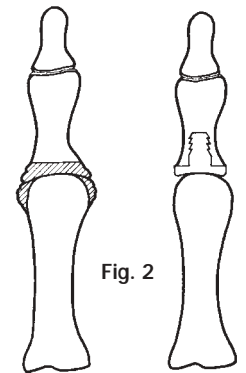


Fig. 2

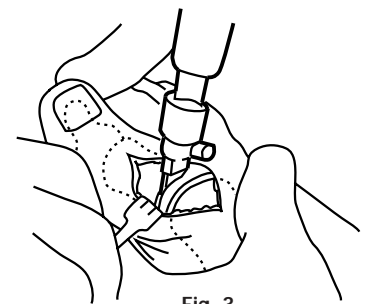


Fig. 3

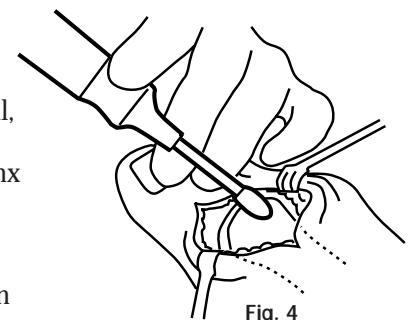


Fig. 4

BIOLOGICALLY ORIENTED PROSTHESES  
**BIOPRO**



ISO 13485  
FM 7747

*The BioPro® Hemi Implant has passed the test of time. With research showing positive clinical results, it offers an impressive follow up of forty years.*

*Durability, minimal instrumentation, simple application and the benefit of leaving undisturbed the biomechanical arrangement of the joint, make the BioPro® Hallux Metatarsophalangeal Joint Hemiarthroplasty an excellent choice when considering joint replacement.*

The properly sized implant is then inserted and completely seated. The joint is reduced and is examined for tension and motion (Fig. 6). If the reduced and neutrally positioned articulation cannot be separated with the application of modest manual traction on the great toe, the implant is removed and an appropriate amount of additional bone is resected from the proximal phalanx. An overly tight joint may result in limited motion and contraction hallux deformity post surgery.

A normal range of concentric, unimpinged motion, particularly in dorsiflexion, should be demonstrated. Therefore, additional marginal resection and remodeling of the metatarsal head may be necessary.

Unresected, impinging marginal overgrowths of bone that extend beyond the containment provided by the concavity of the prosthetic articulation may compromise the result early on by limiting motion and, in later years, by osteophyte reproliferation.

Once the appropriate size is determined and the first metatarsal head remodeled, the implant is fitted into place. Impaction is accomplished utilizing the BioPro® Impact or until the implant is flush with the bone (Fig. 7). Once again, the joint is taken through ranges of motion to insure proper fit.

**Postoperative Management**

The patient is allowed to ambulate with weightbearing to tolerance on the operated foot within limits imposed by postoperative discomfort, utilizing modified foot gear (a soft bedroom slipper, a postoperative wooded shoe, or a cutout in a standard shoe). The progression to normal ambulation and the use of standard foot gear is limited only by the persistence of postoperative swelling and discomfort.

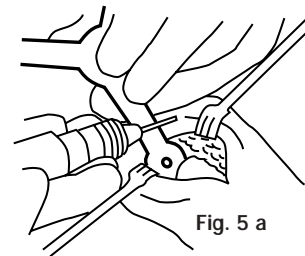


Fig. 5 a

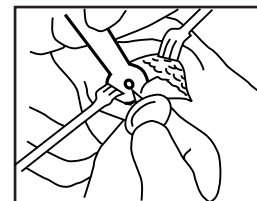


Fig. 5 b

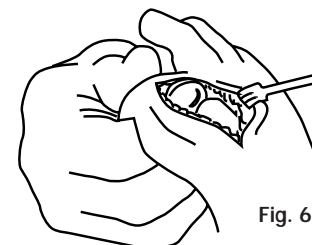


Fig. 6

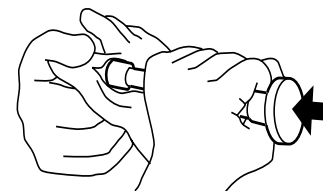


Fig. 7

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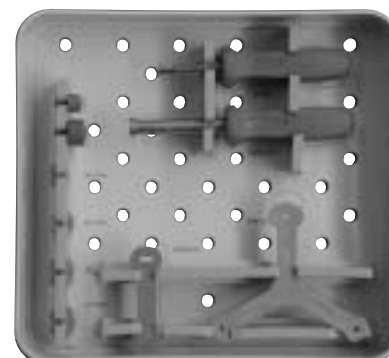
Implants: Available in Various Sizes



Trials: Available in Corresponding Sizes



BioPro® Toe Kit II



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