Smith+Nephew

BIOMOTION◊

Cannulated 1st MPJ Hemi System

Surgical Technique

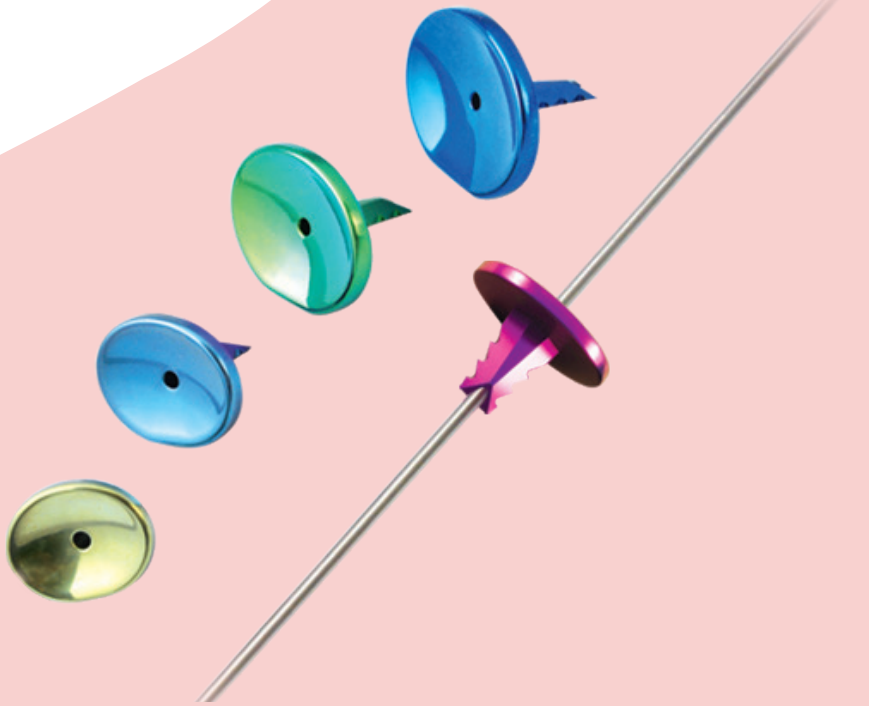

Table of contents

Design Rationale

The BIOMOTION◊ Cannulated Hemi System is designed for use in a simplified, great toe arthroplasty technique. The cannulated instrumentation provides the surgeon with the ability to precisely align and implant the prosthesis. The BIOMOTION cannulated implant features a thin surface, which is designed to minimize amount of bone resection needed and allow for retention of the flexor tendon attachment sites. The tapered stem is designed to allow the surface of the stem to embed in non-broached bone. Color coded sizers aid in proper selection of the correct implant size and placement without the need for interim trial sizers. Five sizes offer a sufficient range to match virtually all phalanx anatomy.

System Features

- Low profile, micro-polished articulation surface
- Color coded implants / trial sizers for easy identification
- Tapered stem
- Five different sizes to cover a wide range of phalanx anatomy
- Cannulated implants / instruments aid in accurate placement

Note Bena

The following technique guide is intended for informational and educational purposes only. It is not intended to serve as medical advice. It is the responsibility of treating physicians to determine and utilize the appropriate products and techniques, according to their own clinical judgment, for each of their patients. For more information on the product, including its indications for use, contraindications, and product safety information, please refer to the product's label and the Instructions for Use packaged with the product.

Prior to performing this technique, please consult the Instructions for Use documentation provided with each device for additional health and safety information, including indications, contraindications, warnings and precautions.

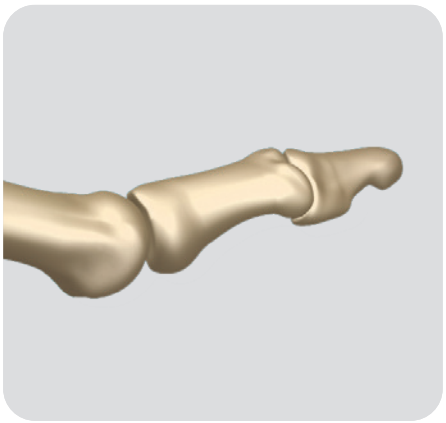

Figure 1-1

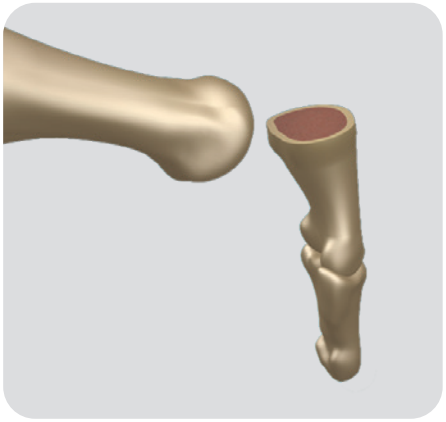

Figure 2-1

Surgical technique

Step 1 ▪ Incision and Exposure

Make a 4-5cm curvilinear incision over the dorsal or dorsomedial aspect of the first MPJ. The capsular tissues around the joint should be released to maximize exposure of the joint. Care should be taken to preserve the superficial vessels and nerves of the surrounding area.

Step 2 ▪ Base Resection of the Proximal Phalanx / Metatarsal Head Preparation

Using a bone clamp, secure the phalanx so a resection of the base of the proximal phalanx can be performed. Although the amount of bone resected will vary depending on the patient, a recommended amount is 3-5mm. A determining factor in the amount of bone removal is the amount of decompression needed.

Resection of the appropriate amount of bone should be performed perpendicular to the long axis of the toe. When practical, care should be taken to maintain the insertion of the flexor and hallucis brevis tendons at the base of the proximal phalanx.

Remodeling of the metatarsal head should be performed by resection of any osteophytes present. Chondroplasty with fenestration of the metatarsal head can be performed where appropriate.

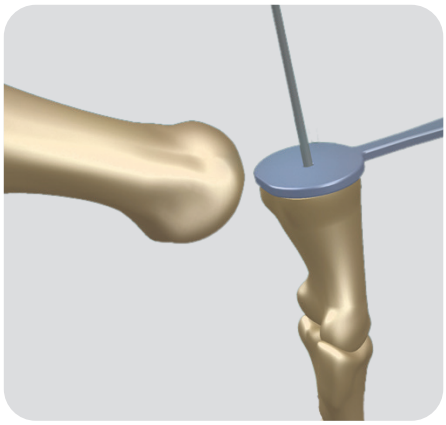

Figure 3-1a

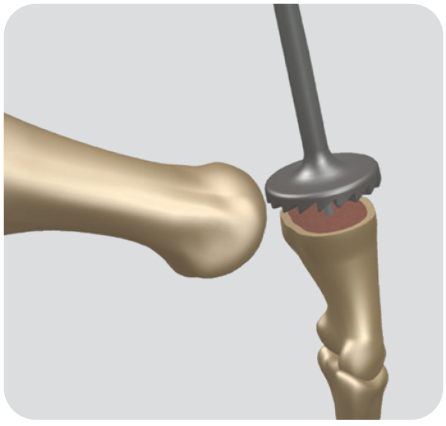

Figure 3-1b

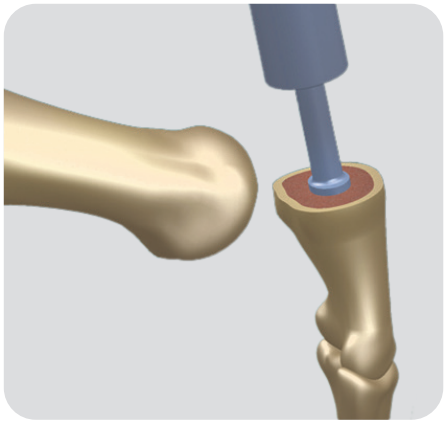

Figure 4-1

Step 3 ▪ Selection of Implant Size and Wire Placement

Place the color coded sizer flat against the resected portion of the phalanx.
Select the sizer that most closely matches the base of the phalanx. Ensure that the sizer profile fits entirely within the profile of, and does not extend beyond, the outer margins of the osteotomized phalanx.

Once the appropriate sizer has been determined, and positioned over the phalanx, drive the guide wire through the center hole in the sizer and into the center of the phalanx.

The wire should be driven parallel to the long axis of the phalanx.

Intra-operative radiographs should be taken at this time to verify proper placement of the guide wire through the center of the phalanx.

Note: The optional cannulated rasp can be used to create a flat surface perpendicular to the axis of the guide wire.

Step 4 ▪ Broaching

If it is determined that the medullary bone is in good condition but relatively soft, it is not necessary to use the included broach. Proceed to step 5.

Place the broach over the wire and verify the correct radial position of the broach referencing the marked line on the broach shank. This line indicates the correct dorsal positioning of the implant when situated in the phalanx and should be oriented in the 12 o'clock position during broaching.

Using the sliding portion of the instrument, tap the broach tip into the bone until the shoulder of the broach is flush with the bone.

To remove the broach, tap the sliding portion of the instrument against the rear stop.

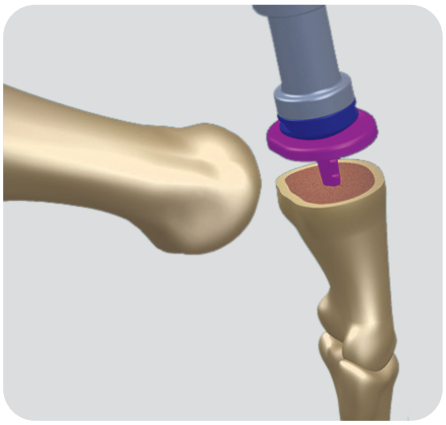

Figure 5-1

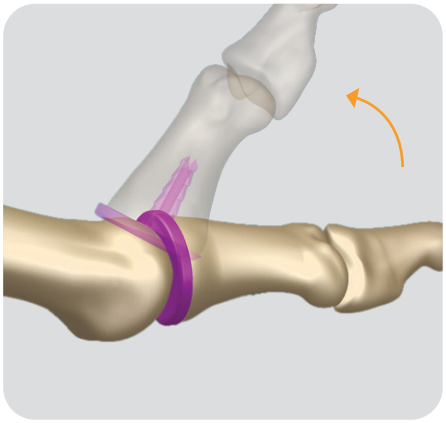

Figure 6-1

Step 5 ▪ Implant Placement

Place the implant over the wire and verify the correct radial position. The flat edge of the implant should be positioned towards the plantar side of the phalanx to match the anatomical shape of the phalanx.

If the broaching option was utilized, place the tip of the implant into the broached location.

If the broaching option was bypassed, orient the implant correctly (as described above) and temporarily secure the implant into the bone with moderate finger pressure.

Slide the hammer over the wire and place the tip against the articulating surface of the implant. Using the sliding portion of the instrument, tap the implant into the bone until the back edge of the implant's articulating surface is flush with the bone.

Step 6 ▪ Verification of Motion and Closure

Prior to closing the capsular tissues, the joint should be put through a full range of motion. If sufficient dorsiflexion and decompression cannot be demonstrated, the metatarsal head can be further remodeled, and the phalanx can be further resected.

Post-operative management corresponds to other arthroplasty procedures of this nature. However, an early post-operative physical therapy is recommended.

Implants / Guide Wires

Reference	Description
HM1500	BIOMOTION◊ Implant - X-Small (15mm)
HM1700	BIOMOTION Implant - Small (17mm)
HM1900	BIOMOTION Implant - Medium (19mm)
HM2100	BIOMOTION Implant - Large (21mm)
HM2300	BIOMOTION Implant - X-Large (23mm)
HW1100	BIOMOTION Guide Wire (1.58mm x 101.6mm)

Instrumentation

Reference	Description
HM3005	BIOMOTION Slide Broach
HM3010	BIOMOTION Slide Hammer
HM3015	BIOMOTION Sizer - X-Small (15mm)
HM3017	BIOMOTION Sizer - Small (17mm)
HM3019	BIOMOTION Sizer - Medium (19mm)
HM3021	BIOMOTION Sizer - Large (21mm)
HM3023	BIOMOTION Sizer - X-Large (23mm)
HM3030	BIOMOTION Rasp
HM7000	BIOMOTION Sterilization Tray

Products may not be available in all markets because product availability is subject to the regulatory and/or medical practices in individual markets. Please contact your Smith+Nephew representative or distributor if you have questions about the availability of Smith+Nephew products in your area.

Smith & Nephew, Inc.
1450 Brooks Road
Memphis, TN 38116
USA

www.smith-nephew.com
T: 1-901-396-2121
Orders and Inquiries: 1-800-238-7538

31962 V2 LC-04-5060-0003 REVD 11/22

Manufacturer:

Ascension Orthopedics, Inc.
11101 Metric Blvd
Austin, TX 78758 | USA