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## HAMMER TOES

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## DEFINITION/FORMATION

Hammer toes is the name given to a frequent malpositioning of the little toes. This deformity often occurs in combination with a hallux valgus deformity. The deformity is usually in the middle joint, which can no longer be actively stretched. The base joint is overstretched. The toe loses its function and can no longer support the metatarsal bone. On the one hand, pressure points occur above the metatarsophalangeal joint, where corns can also form, and on the other hand, the weight-bearing on the metatarsal bone is increased (Fig. 1). Due to the shortening of the tendons and ligaments, the toes can slip out of the joint (dislocation, Fig. 2), thus increasing the malposition and pain.

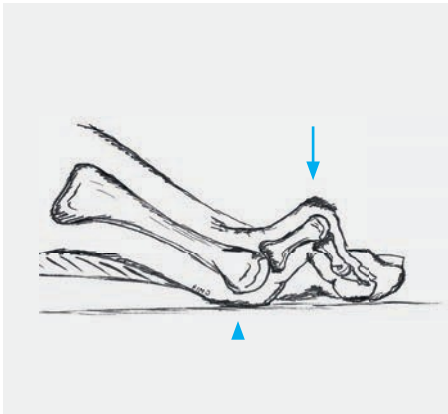


Fig.1 Hammer toe at the side with a corn on top and overload of the metatarsal bone at the bottom



Fig.2 Lateral luxation of the metacarpal joint

## SYMPTOMS

The incorrect position of the toe can lead to pressure points with pain. Corns or open wounds can form, especially above the toe joint that is pointing upwards. The increased overload on the metatarsal bone can also lead to pain in the area of the ball of the toe on the sole of the foot.

## EXAMINATION

During the examination, the mobility and the extent of the malposition are assessed. It can also be determined whether the joints are luxated. An x-ray examination can also reveal possible osteoarthritis (Fig. 3).

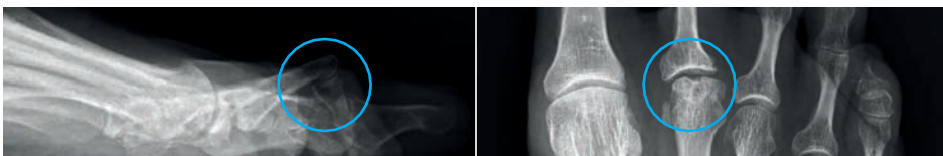


Fig.3 X-ray image with hammer toe formation on the left and osteoarthritis in the basal joint on the right.

## TREATMENT

### A) Non Surgical

If the pain is tolerable, the first step is to choose shoes that do not cause pressure points. Conservative treatment cannot reverse the malposition, but it does help to reduce the symptoms by relieving pressure. Various aids such as toe tubes, splints, etc. are available commercially. Pain in the metatarsal bones can be treated with insoles.

### B) Surgical

If the conservative possibilities are exhausted, surgery is a sensible solution:

1. Operation according to Hohmann:  
 If the joints are not luxated, the position of the toe can be corrected with a stiffening in the middle joint in such a way that the toe can resume its function and no longer bumps against the shoe. To achieve a stable bony situation, the toe is splinted internally with a small wire for three to six weeks (Fig. 4). During this time the weight-bearing of the foot can be normal and mobility is only slightly restricted. Instead of wearing your own shoes, a special shoe from us (Fig.6) is provided. The wire is pulled out 3 to 6 weeks later during our consultation. An anesthetic is not necessary.

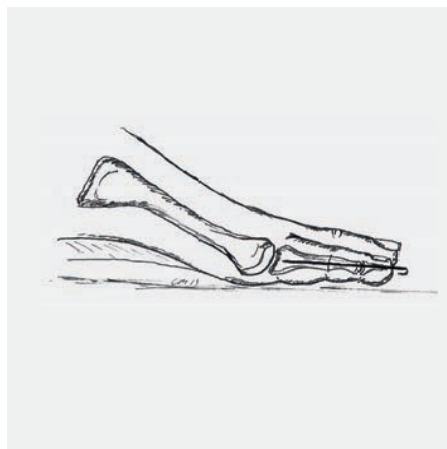


Fig.4 Inner splint

2. Soft Tissue Correction: If it becomes apparent during the operation that even after the above-mentioned correction there is still a deformity (hyperextension or lateral deviation) in the basic joint, the soft tissue can be additionally corrected. On the one hand, the extensor tendons can be lengthened in a Z-shape and on the other hand, the capsule can be loosened or gathered. In this way, a good position of the toe can also be achieved in the base joint. This does not change the aftercare.

3. Weil Osteotomy: If the toe is dislocated in the metatarsophalangeal joint and the weight-bearing on the metatarsal bones is increased, additional measures may be necessary to correct this deformity. In addition to stiffening the metatarsophalangeal joint, the head of the corresponding metatarsal bone is moved backwards and/or slightly raised. To do this, the metatarsal bone is cut parallel to the sole of the foot, if applicable a small wedge removed and fixed in the new position with a screw (Fig.5). The follow-up treatment is the same as for the operation after Hohmann.

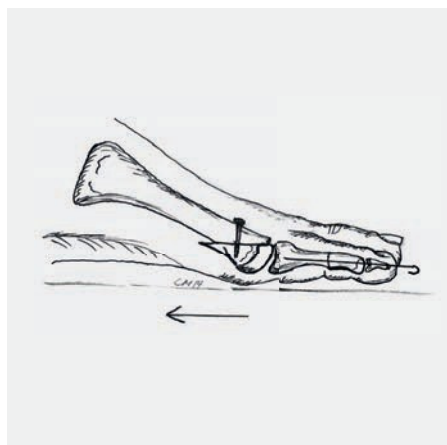


Fig. 5 Weil Osteotomy

## RISKS AND COMPLICATIONS

Complications and risks may occur during or after the operation and delay the healing process or make further surgery necessary. They can never be completely ruled out during surgery, even if they are rare during foot surgery. These are summarized below:

- Wound healing disorders
- Infections
- Vascular injuries, secondary bleeding, bruising, blood loss
- Nerve injuries
- Pseudarthrosis (lack of bone healing)
- Interfering osteosynthesis material (screws, plates)
- Thrombosis, embolism
- Residual complaints

## FOLLOW-UP TREATMENT

The operation is only a part of the whole treatment. The post-operative treatment plays a major role in the success of the surgery. It is important that you know what you should observe and possibly avoid.

### Dressing and Wound Care

During the time in the hospital you will be shown how to care for the wound. As long as the wound is not completely dry (wound secretion/blood), the dressing should be changed daily. Do not use ointments or powders directly on the wound surface as long as the stitches have not been removed! Disinfection is not necessary. Always remove the entire dressing when changing. The new dressing must be dry and must not slip.

If the wound is dry, a normal plaster (quick bandage) is sufficient. An elastic bandage can protect and cushion the operated area a little. The remaining swelling is also reduced. If you are not sure whether everything is normal, you can consult your family doctor or contact us directly.

The stitches can be removed about 2 weeks after the operation, this is usually done by your family doctor.

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### Swelling and Pain

After an operation, the affected leg is always more or less swollen. This swelling can recur for weeks (up to 6 months). The most effective measure to prevent this is to elevate the leg. It also makes sense to move several times a day (walking, less standing) but only for a short time. It is time to elevate the leg again if the foot/calf is tense and starts to hurt again.

Pain in the operated foot can occur in the first few days and weeks after the operation despite these measures. However, to relieve the pain, you can take the prescribed pain medication.

It is important to know that there is a general tendency for the foot to swell after foot surgery. This reaction is normal and disappears again after 6 to 12 months.

### **Weight-Bearing**

The permitted weight-bearing of the foot depends on the operation performed. You have been given a special shoe to protect and facilitate mobility (Fig. 6). Depending on the operation, partial weight bearing was recommended, or full weight-bearing was allowed. In the beginning, getting up should be kept to a minimum. On the one hand, there is a strong tendency for the foot to swell, and on the other hand, standing and walking for too long can lead to secondary bleeding in the wound area.



Fig.6 Special Shoe

### Full Weight-Bearing

As soon as the pain allows it, you may put full weight-bearing on the foot. It is important that the special shoe is worn consistently through the first 6 weeks. The crutches are mainly used for security reasons and can slowly be omitted.

### **Personal Hygiene**

As long as the stitches are still in the wound, i.e. usually in the first 2 weeks, the operated foot should be protected with a plastic bag. The easiest way is to pull the plastic bag over the special shoe. As soon as the stitches are removed, you can shower without further precautionary measures. You may only bathe after removing the wires.

### **Thrombosis Prophylaxis**

Thrombosis prophylaxis begins during the hospital stay. Depending on the operation, this prophylaxis must be continued. In most cases, we use Fragmin 5000IU pre-filled syringes, which are injected by the patient themselves once a day. You will be instructed by our nursing staff during your stay.

How long you need these injections depends on the operation, the individual risks, generally about 10 to 14 days.

### **Work Ability**

A rest period is crucial after an operation. In the first 2 weeks you should take care of yourself and not work. How long you will be unfit for work depends on the type of surgery as well as your stress profile. In most cases you and your employer should be able to temporarily find less stressful work. This enables early resumption of work.

The signed work absence that you will receive from us is a preliminary assessment. The certificate can be extended if you are not able to resume work after this time. If this is the case, report to your family doctor or to us.

However, you may take up your work again any time before the given date, if you feel capable to do so.

### **Driving a Car**

At what point you can resume driving again depends on the kind of operation you had. You must refrain from driving as long as you cannot fully weight bear your foot or are still requiring crutches. How far thereafter your ability to drive is restored is up to you. In case of doubt or if you are unsure, we recommend to avoid driving.

### **Check-Ups**

Six weeks after the operation, your surgeon will carry out an x-ray check-up. After that the further procedure will be determined. As a rule, you will be able to wear your own shoes again afterwards. We recommend shoes with a rather firm sole and soft upper leather at the beginning.

About three months after the operation, most activities can be resumed. Sporting activities should be increased slowly in order not to provoke an overload after the sports break.

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