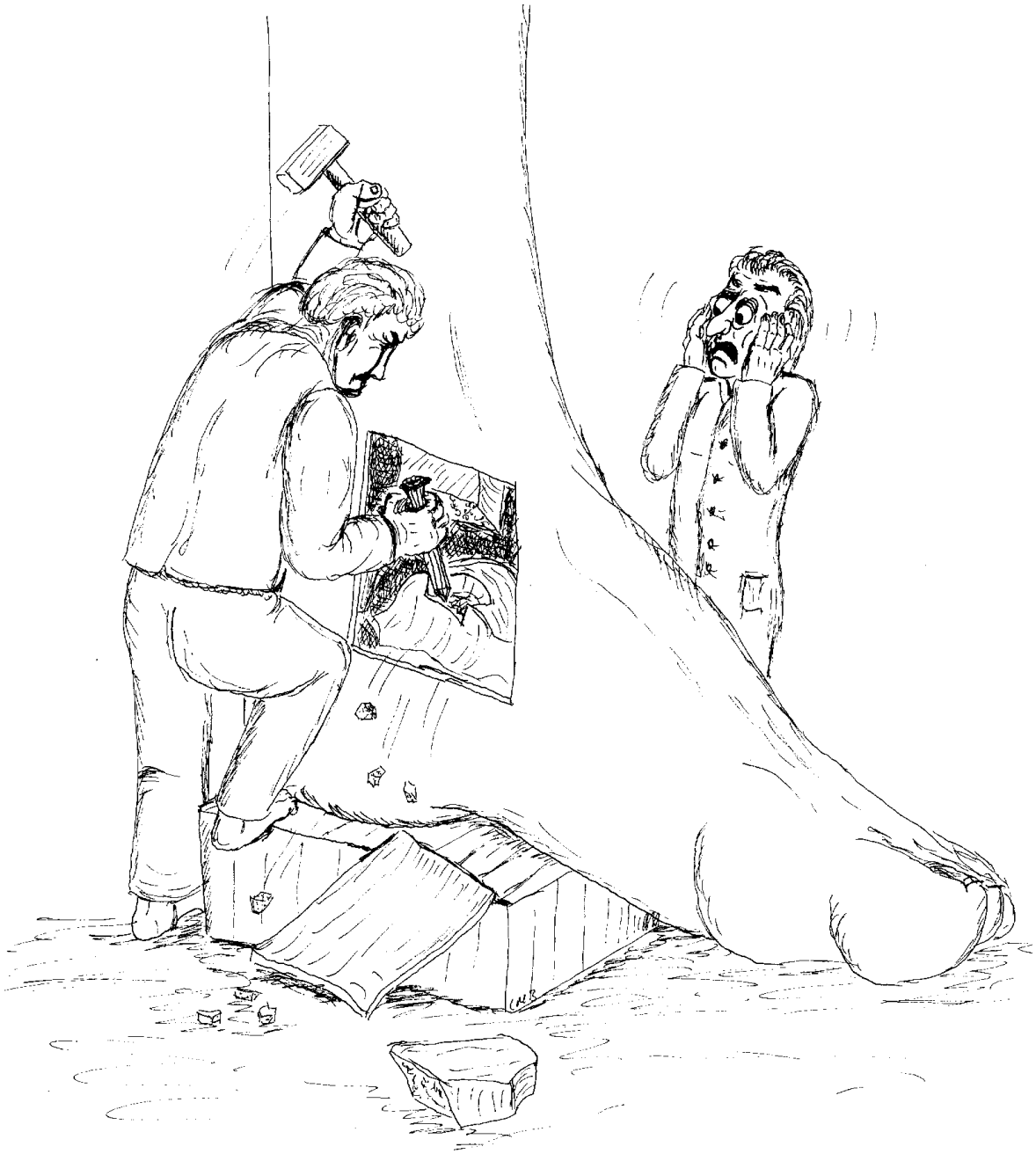
LEONARDO
ÄRZTE FÜR ORTHOPÄDIE UND TRAUMATOLOGIE

OSTEOCHONDRAL LESIONS
OF THE TALUS



DEFINITION/FORMATION

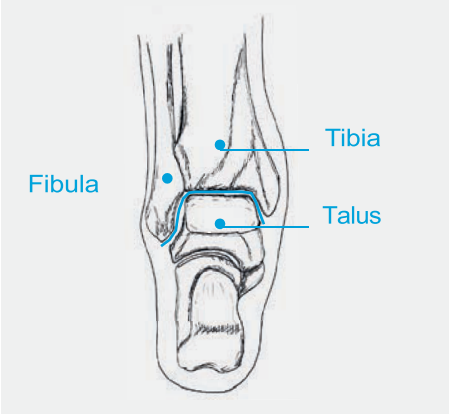


Fig. 1: Upper ankle joint formed by talus (ankle bone), tibia (shin, inner ankle) and fibula (fibula, outer ankle)

Osteochondral lesions are damage to the cartilage bone interface in the joint. At the upper ankle joint, these lesions mostly affect the talus (Fig. 1). Possible causes are acute injuries (e.g., errant steps), chronic instability or reduced blood flow to the bone. Unfavorable axial relationships in the hindfoot can also promote the development of such lesions. However, osteochondral lesions can also be found without previous injury and without a tangible cause, especially in children and adolescents.

Once cracks have formed in the cartilage, joint fluid can pass through the cartilage into the bone to get there. A valve mechanism may occur so that more and more fluid is pressed into the bone and cannot find its way back into the joint. This leads to cysts in the bone. In these cysts, there is no more blood circulation and the cartilage above the cyst increasingly dies, forming a vicious circle. In addition, cartilage and cartilage-bone fragments can come loose and these then float freely in the joint (so-called loose joint body). Free fragments in the joint can then in turn cause locking or trapping and further damage the joint. In the final stage, an osteochondral lesion thus leads to osteoarthritis.

Clinical experience shows that not all osteochondral lesions cause problems. Occasionally, the findings are accidental and even without therapy there need not be any deterioration, especially in patients who have hardly any complaints.

SYMPTOMS

Most patients complain of pain and swelling in the area of the inner or outer ankle/malleoli, especially after exertion (sports, prolonged walking, etc.) Restricted movement may become noticeable and occasionally patients report sensations like locking or catching.

EXAMINATION

The examination may reveal swelling or pressure sensitive areas. Maybe a reduced range of motion can be found. Possible additional problems, such as instability, are examined. However, the clinical examination is often unspecific and further clarification is required.

The first thing that is usually done is an x-ray. There, larger lesions can already be detected (Fig. 2). Smaller lesions can sometimes only be guessed at, or even not recognized at all. In these cases, an MRI can help, as even small changes can be detected. Occasionally, patients come directly with an MRI that was performed for another reason and it is a random finding.

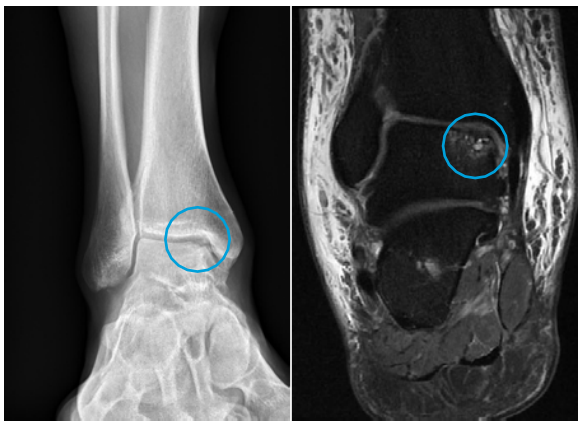


Fig. 2: X-ray (left) and MRI (right) with osteochondral lesion on the talus

The SPECT/CT is very useful for assessing the size and activity of osteochondral lesions (Fig. 3). This is usually done in order to decide which treatment makes sense.

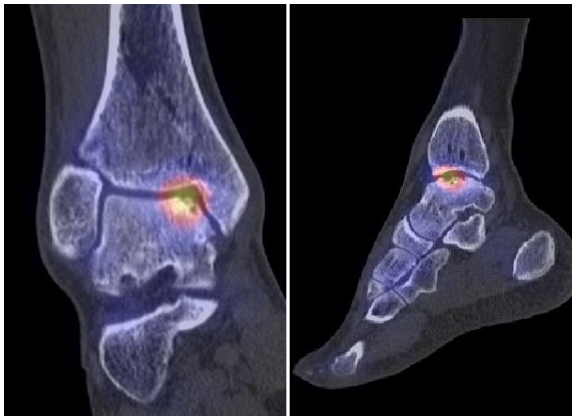


Fig. 3: SPECT/CT with osteochondral lesion at the talus

TREATMENT

A) Non Surgical

Not every osteochondral lesion causes symptoms. In this situation no surgical treatment is necessary, one can wait for the natural course of the disease. There is no evidence that these lesions have to progress and cause problems.

B) Surgical

If an osteochondral lesion causes discomfort, surgery is a sensible treatment. There are several possibilities:

1. Arthroscopy (keyhole surgery) and microfracturing: For small lesions, arthroscopy with debridement can be performed. This involves the removal of defective cartilage and bone parts. The healthy underlying bone is then drilled into (microfractured) to allow new cells to migrate into the defect and form replacement cartilage. After the operation, the joint is immobilized in a VACOped, whereby the joint is to be moved again quickly as part of physiotherapy, but only unloaded. It is important to maintain a partial weight-bearing of 15 kg in the first 6 weeks so that replacement cartilage can be formed.

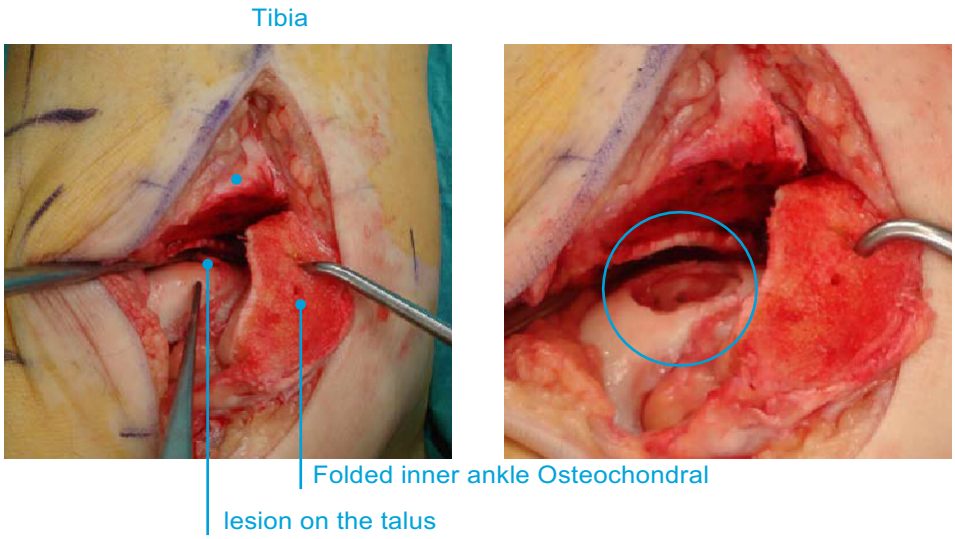


Fig. 4: Osteochondral lesion at the medial talus, right after debridement and drilling the vital bone beneath

2. Open debridement, filling and covering: In larger lesions, arthroscopic surgery is no longer sufficient. The defect must be visualized through a larger incision and debrided well/thoroughly (Fig. 4). After removal of the defective/dead cartilage and bone material, a hole remains in the bone. This hole is filled and a patch is then glued on top to seal it (Fig. 5). New cells can then migrate into this matrix and a replacement cartilage is formed. Depending on the location of the defect, the inner or outer ankle prevents access to the lesion. The ankle must then be osteotomized and folded away. To do this, the bone must be severed. At the end of the operation, the ankle is reattached with screws or a plate and screws (Fig. 6). After the surgery, the ankle is immobilized in a VACOped (important so that the glued-on matrix is not sheared away). During the first 6 weeks a partial weight-bearing of max. 15 kg must be maintained.

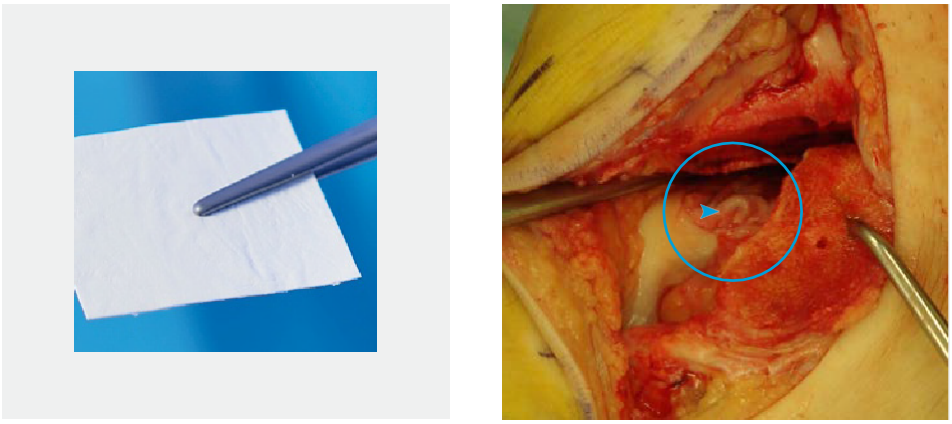


Fig. 5: Matrix/Patch (left), which is cut to size and glued on top of the filled/stuffed defect (right)

Fig. 6: Fixation of the inner ankle with 2 screws

3. Other additional procedures: If a possible cause for the osteochondral lesion can be found, such as unfavorable axial conditions or instability, an axial correction, stabilization, etc. should be carried out simultaneously with the treatment of the osteochondral lesion.

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 injury
– Non Union (lack of bone healing)
– Disturbing implants (screws, plates)
– Thrombosis, embolism
– Residual complaints, nevertheless increasing osteoarthritis

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 operation. 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 provide some protection and padding for the operated area. 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, usually by the family doctor.

Swelling and Pain

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

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.

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

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. 7). As a rule, a partial weight-bearing of 15 kg is recommended.

Partial Weight-Bearing

You are allowed to put about 15 kg of weight on the affected foot. This corresponds approximately to the weight of the leg and means that you must always use crutches. To be able to do this correctly, you will be instructed by our physiotherapists. It is important that you are able to take a few steps on the stairs on your own with crutches.

Fig. 7: Special shoe (VACOped)

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 and bathe without further precautions. If you have received a cast, you should protect it from water with a plastic bag.

Thrombosis Prophylaxis

Thrombosis prophylaxis already begins during the hospital stay. Depending on the operation, this prophylaxis must be continued. In most cases we use Fragmin 5000IU ready-to-use syringes. They are administered once a day by the patient himself. You will be instructed by our nursing staff during your stay.

How long the injections have to be administered depends on the operation, the individual risks and is necessary until you can fully weight bear your foot and walk without crutches again, in about 6-8 weeks.

Work Ability

After an operation a resting phase is important. In the first 2 weeks you should take it easy and not work. How long you will be completely unable to work depends on the type of operation and on your stress profile. It is usually also possible to temporarily find a less stressful job together with your employer. This makes it possible to resume work at an early stage.

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 period. In this case you should contact your family doctor or us.

If you feel fully fit for work again before this period expires, you can resume work before then.

Driving a Car

When you can start driving again depends on the type of operation. As long as you cannot fully weight-bear your foot or are still requiring crutches, you must refrain from driving. The extent to which you are able to drive is at your own discretion. In case of doubt or uncertainty, we recommend that you leave the car standing.

Check-Ups

Your surgeon will require a check-up six weeks after the operation (depending on the operation performed with x-rays). Afterwards the further procedure will be determined.

About three months after the operation, most everyday activities can be resumed. Sporting activities should only be slowly increased after 3-4 months in order not to provoke an overuse after the sports break.

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