# Considerations with respect to their special anatomy: shoulders of thalidomiders with upper extremity affection

The present document is aimed at health staff involved in the treatment of patients with thalidomide related malformations. The information highlights patients' special needs arising from their special anatomy.

Thalidomide was first marketed in 1957 in West Germany under the trade-name Contergan. The German drug company Chemie Grünenthal (now Grünenthal) developed and sold the drug, indicated as a sedative and for the treatment for morning sickness. Thalidomide became an over the counter drug in Germany on October 1, 1957. Within 4 (?) years of the initial marketing of the drug between 5,000 and 7,000 infants were born with malformation of the limbs in Germany alone. Approximately 50% of these children survived. Worldwide 10.000 babies were affected; half oft them died at an early age. While thalidomide also affects inner organs, the dysplasie oft extremities is the most striking feature.

In addition to visible anatomic deviation, invisible anatomic features must be considered prior to performing diagnostic or therapeutic approaches.

Below chapter deals with **shoulder dislocation**.

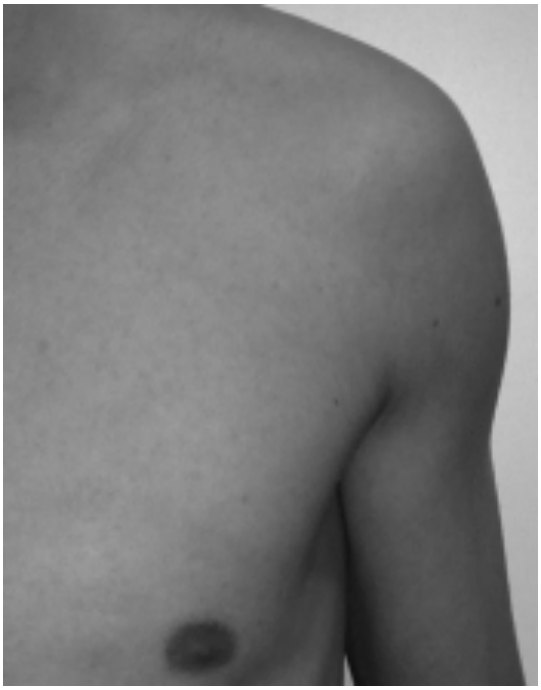
Over the years we followed several cases of thalidomiders with short arms who were admitted to an emergency ward after an accident. Shoulder dislocation was diagnosed and closed reduction was chosen as a treatment which has lead to catastrophic damage.

The shoulder articulation of short arms, which are caused by thalidomide, is completely different from a normal shoulder. This is apparent on physical examination and even more so when examining x-rays.

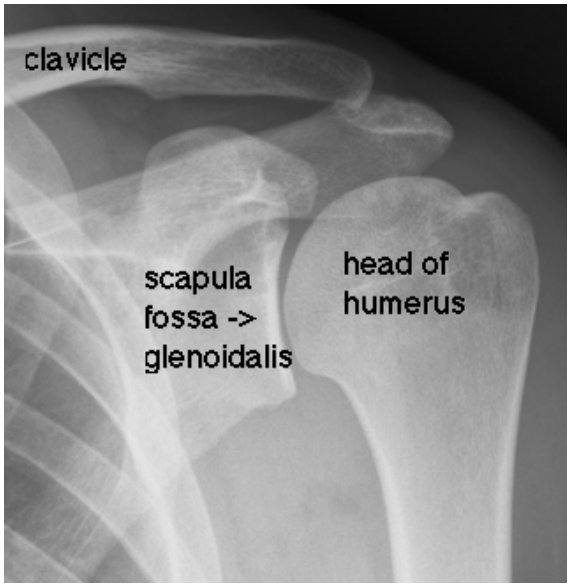
Both the physical examination and x-rays indicate a shoulder dislocation. This is, however, a pre-existing condition (thalidomideers with severely affected upper extremities generally present a sever congenital shoulder dislocation), to which the patient has adapted perfectly.

Do not manipulate the shoulders unless the patient complains about new pain and/or loss of mobility and shoulder function. Any attempt for closed reduction is likely to result in severe damage of the shoulder.
There is insufficient joint surface to allow for proper articulation; reduction may result in severe neurovascular trauma with no benefit for the patient.

Furthermore, it is unlikely that there is sufficient muscular fixation oft the shoulder with the (often dysplastic) rotator cuff and the joint capsule.
Below images further illustrate the anatomic situation in the majority of thalidomide caused alterations of the upper extremities.



Img. 1: normal rounded shoulder contour in healthy non thalidomide individual




Img. 2: matching x-ray shows correct containment of the cavitas glenoidalis and the humerus head permitting unimpaired and controlled articulation.

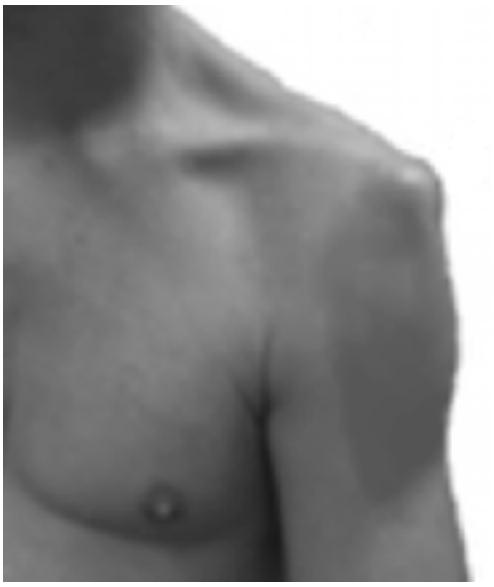


Abb. 3. traumatic sholder dislocation in an otherwise healthy patient without thalidomide embryopathy. The pointed shoulder contour is caused by the acromion due to dislocation of humerus head.

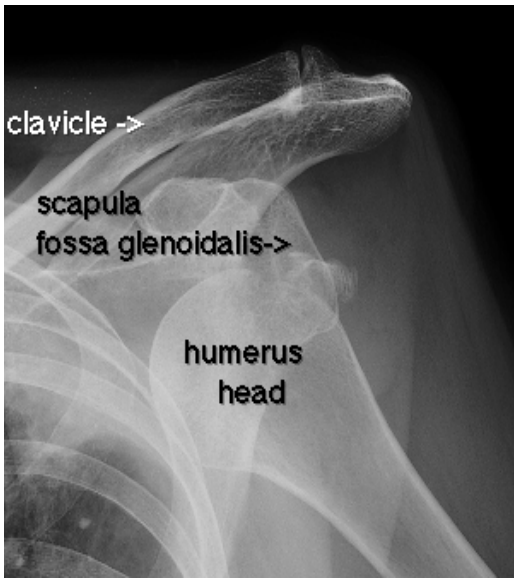



Abb. 4. Corresponding x-ray shows dislocation of humerus which is no longer in contact with the cavitas glenoidalis. Indication for reduction.

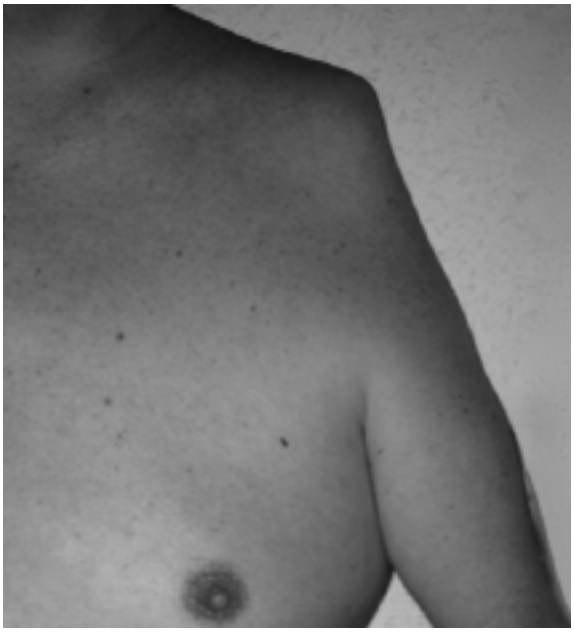


Abb. 5. Left shoulder of thalidomide affected man showing the typical pointed contour of shoulder due to prominent acromion with dislocated humerus. No trauma, no pain, no impairement of movement compared to earlier time.
The pointed shoulder contour leads to the correct diagnosis of shoulder dislocation but require no therapeutic intervention.

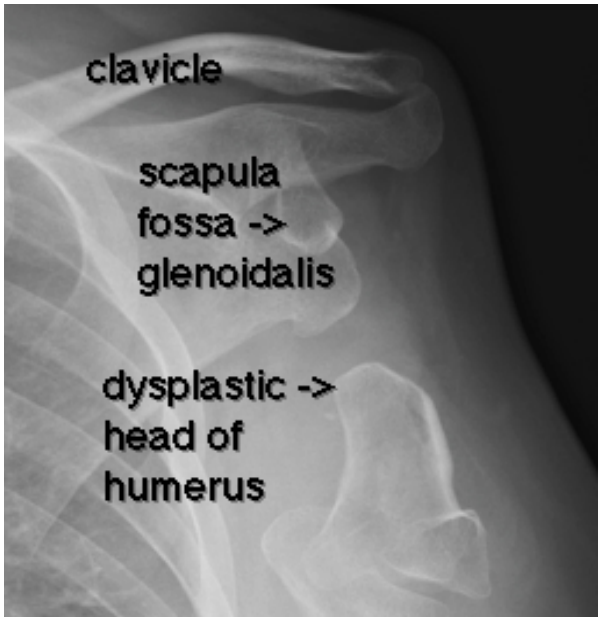



Abb. 6. Corresponding x-ray shows severe dysplastic malformation of humerus only some centimeters long with no adequate head or articulation surface. The humerus head is in no anatomical contact with the equally dysplastic cavitas glenoidalis.
Pat. is used to this condition and therapeutic approaches shall not be performed.

In summary
If you receive a trauma patient in you emergency ward and the patient has alterations of the upper extremities (shortened) caused by thalidomide, you are likely to find signs of a severe shoulder dislocation. In absence of other signs of trauma (bruises, abrasions, new loss of function, shoulder pain) in the area of arms and shoulders, you should assume that the shoulder dislocation is a pre-existing condition, which is normal for the patient.

Additional information must be obtained from the patient regarding his/her acute clinical symptoms (pain, loss of function, neurologic impairment) prior to any therapeutic attempt. If the patient is unconscious, postpone any treatment oft he shoulders until the patient can respond to your questions.