

Post-Traumatic Femoral Epiphysiodesis in Children

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Image Article

The growth cartilage is a complex zone, found at the Epiphyso-metaphyseal junction, in the secondary ossification centers and in the growing apophysis. It allows the growth in length of long bones.

During a trauma, if an abnormal solution of continuity exists in the growth cartilage, a definitive communication is formed between the metaphyseal bone and the epiphyseal bone which constitutes an epiphysiodesis bridge thus hindering growth [1].

Post-traumatic epiphysiodesis must absolutely be detected and feared, especially since the residual growth potential is great. When the bridge is central, the consequence is the cessation of growth. When the bridge is lateral, the consequence is a misalignment of the type of varus, valgus, flessum. It is the consequence of an incomplete epiphysiodesis [1].

MRI is the ideal examination in the exploration of the growth cartilage, it is important in locating the bridges of epiphysiodesis, and their nature and knowing the functional quality of the remaining growth cartilage [2].

CT can also locate the epiphysiodesis bone bridge (Figure 1).

Figure 1 shows Knee MRI of 5 years-old child after severe knee trauma, on T2 weighted sequence showing a hypo signal interrupting the normal hyper signal of the growth plate, related to areas of lower femoral epiphysiodesis.

MRI makes the diagnosis by showing on the T2-weighted sequences, a hypo signal interrupting the normal hyper signal of the growth plate. The T1-weighted sequences will find a hypo signal or a discreet hyper signal relative to the cartilage, associated with the indirect sign represented by the convergence of the metaphyseal lines in hypo signal towards the bridge.

References

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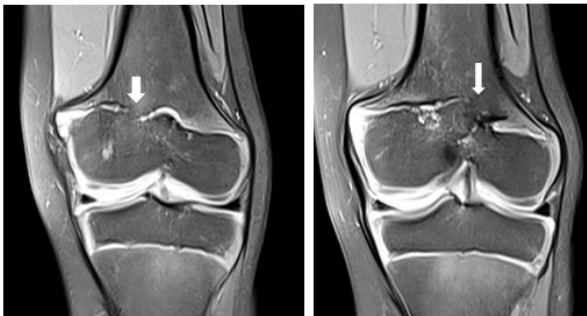


Figure 1: Knee MRI on T2 weighted showing two bony bridges at the lower chondral plate of the femur.

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