

Heterotopic ossification after brain and spine injuries

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Description

Severe traumatic brain or spine injuries affect mainly young adults and children (road and sport accidents, work injuries, war wounds). Patients with these traumatic neurological injuries have multiple neurological complications that impact locomotion (paralysis), memory, behaviour, breathing, urinary, bowel and sexual functions. A frequent complication of brain and spine injuries is the abnormal development of bones in muscles and joints of paralysed limbs. This abnormal formation of bones outside of the skeleton, called heterotopic ossification, is extremely invalidating and painful and further increases patients' dependence.

Treatment

As the causes of such bone formation outside of the skeleton following brain or spine injuries are unknown, there is no medical preventive or curative treatment for these patients. The only current treatment is removal of these extra bones by surgery. Surgery give good results but has several risks associated with anaesthesia on weak patients, blood loss, fractures of neighbouring joints, infections and recurrence.

Prognosis

After a period of pain with inflammation and a progressive apparition of joint stiffness, solid bone grows around articulations until they are ankylosed to the point that joint movement is blocked. As heterotopic ossification often affects several joints per patient, functional abilities can be severely compromised with, in extreme cases, a real "mummification" of the patient. Moreover the increased stiffness of joint affected by heterotopic ossification compromises rehabilitation and functional neurological recovery, increasing suffering and dependence.