**CRPS and the anaesthetist – A problem all round!**

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Once considered rare in children although it had been reported in adults since 1860, Complex Regional Pain Syndrome (CRPS) has been described in the paediatric population since the 1970s and is increasingly being recognised, especially in adolescents. CRPS presents a variety of problems for all involved. The child’s problem is one of continuing severe pain out of proportion to the inciting event, alldynia and hyperalgesia with accompanying vasomotor and sudomotor changes of varying severity. Being “experts in managing pain”, Anaesthetists are frequently called on to help manage these patients. This condition presents a number of problems for the Anaesthetist. The aetiology is unknown and a full understanding the pathophysiology remains elusive. Persistent inflammatory activity and changing inflammatory profiles between acute and chronic CRPS have been observed. Alterations in peripheral and central sensitisation with changes in brain processing are other lines of investigation. Reorganisation of the S1 cortex of the contralateral side to the affected limb has been demonstrated and appears to be associated with the complaints of neuropathic pain. Most research has been performed in adults. However, quantitative sensory testing has demonstrated thermal and mechanical sensory changes in children with cold allodynia the most common.

Diagnosis poses another problem. There have been a variety of diagnostic schemes all based on clinical criteria. The Budapest Criteria are the most recent. They have very high sensitivity with greatly improved specificity compared with the previous criteria set out by the International Association for the Study of Pain. There are four components to the Budapest Criteria. They consist of (1) continuing pain, which is disproportionate to any inciting event; (2) report of at least one symptom in three of four categories (sensory, vasomotor, sudomotor/oedema and motor/trophic); (3) display of at least one sign at time of evaluation in two or more of four categories (sensory, vasomotor, sudomotor/oedema and motor/trophic); and (4) no other diagnosis that explains the signs and symptoms. Although these criteria are commonly used, they have not been validated in children. There are some differences in the presentation of children compared with adults. CRPS is more common in females and more commonly presents in the lower limb. Early adolescence (12 to 14 years) is the peak age of onset although individual cases have been described in much younger children. Onset can follow a wide variety of events, often minor trauma but also major surgery and even immunisation. Occasionally, a trigger cannot be identified. A psychological basis for CRPS has been discounted although psychological factors may contribute to the severity. As in most chronic pain states in childhood or adolescence, CRPS is a problem involving the whole family. Somatization, anxiety, and depression occur in up to 60% of patients. Relationship problems with peers, school problems and social withdrawal are common. Caregivers have time away from work, losing income at a time of increased medical expenditure for the child resulting in considerable financial impact.

Treatment of CRPS is also problematic. Physical rehabilitation has long been considered an essential element. The problem has been how facilitate it. Over the years, a variety of oral and intravenous medications, sympathetic blockade, regional anaesthesia have been used in an endeavour to reduce the severity of the pain. Anaesthetists are frequently involved at this stage, implementing and managing interventional therapies. More novel treatments have been reported including intrathecal analgesia, spinal cord stimulation and intravenous pamidronate. However, most children can recover well with non-invasive rehabilitative approaches. Cognitive behaviour therapy or similar therapies, along with physical therapy in a combined approach forms the basis of most intensive inpatient and outpatient programs, and most recently, a Day-hospital program. Changes in both the child’s and parental willingness to self-manage pain are important in achieving functional and psychological improvement and may be facilitated by an interdisciplinary team approach. Generally, much better outcomes are expected in children with CRPS although the evidence for this is only fair. Relapse rates may be moderately high. However, early
diagnosis and referral with appropriate intervention is the key to decreasing pain, restoring function and minimising suffering of children with CRPS.

REFERENCES: