aided by eliciting a history of sudden strain or local trauma. Whereas an intra-abdominal mass disappears with contraction of the abdominal muscles, a haematoma of the rectus sheath usually remains palpable and indeed may become more discrete. Oddly enough there is often considerable delay before a tell-tale bruise appears in the skin over the mass which clinches the diagnosis.

Treatment varies according to circumstances. A small haematoma which is obviously subsiding should be left alone to resolve spontaneously. A large tense mass which is increasing in size is best managed by surgical evacuation. This not only allows the bleeding vessels to be ligated, but also gives dramatic relief of pain.

Orthopaedic Surgery in Spastic Paralysis

The relative merits of surgery and physical therapy in the management of children with spastic paralysis have been fiercely argued for the last 50 years. In the early part of this century ill-advised and indiscriminate surgery on nerves and tendons without proper analysis of the paralysis, deformity, and function in the affected limb often did as much harm as good. As a consequence there was a reaction towards reliance on physiotherapy alone, and this often resulted in a deformity and disability that careful and appropriate surgery could have prevented. In recent years the dividing lines between medicine and surgery have become much less sharp, and in the management of cerebral palsy the combined attentions of paediatrician, physiotherapist or physical medicine specialist, and orthopaedic surgeon can achieve more than any one specialist working alone.

The special place of orthopaedic surgery is in the management of deformity. Traditionally, splints, callipers, and braces have been used to try to prevent deformity and to improve function. Deformities that develop despite adequate physiotherapy and splintage are then corrected by reconstructive or salvage surgery. All too often, however, the deformities are so severe by the time that the orthopaedic surgeon is consulted that full correction cannot be achieved and the final functional result is unsatisfactory.

Little is known of the mechanisms that lead to the development of deformity in spastic paralysis. W. J. W. Sharrard has pointed out that the intense overactivity of strong spastic muscles so often dominates the clinical picture that it may be forgotten that there is often functional weakness of the opponent muscles. Functional weakness of the dorsiflexors of the ankle may result in fixed equinus deformity, however efficient the splintage and however vigorously physiotherapy is pursued. When the dorsiflexors of the ankle are strong deformity often fails to develop, even when the calf muscles are severely spastic. This suggests that spastic paralysis has something in common with poliomyelitis, in which muscle imbalance produces deformity in the same way.

Once fixed deformity has developed the opposing muscles become progressively less efficient, and further increase of the deformity is inevitable. This concept suggests that there is a place for preventive surgery in correcting deformity before it becomes disabling and in trying to achieve a balance of muscle action. Surgery is indicated when the ankle, with the knee extended, cannot be dorsiflexed beyond a right-angled position.

Gastrocnemius recession or elongation of the tendo calcaneus achieves the triple effect of improving dorsiflexion, lessening the strength of the calf muscles, and reducing the input of sensory impulses from the tendo calcaneus to the spinal cord nuclei. Adductor tenotomy, with or without partial division of the obturator nerve, has been shown to prevent dislocation of the hip in all but a few patients. Ilio-psoas transplantation may be used to prevent dislocation and to stabilize the hip in those in whom the hip addsuctors are severely paralysed. There are fewer indications for surgery in the upper limb, but it can often improve function if correctly applied.

Carefully planned operations based on a proper evaluation of muscle function and potential deformity can allow a child to obtain the best possible function under the guidance of physiotherapist and paediatrician. Splints may often be avoided or discarded. The ugly, ape-like posture that has been regarded as the hallmark of the spastic child, but which is often the sign of uncorrected fixed deformity, need never develop. G. A. Pollock has written that "orthopaedic surgery has a worth-while contribution to make in the treatment of cerebral palsy. When the cases are selected with care, the appropriate orthopaedic measures are skillfully performed, and when the patients are adequately supervised afterwards the benefits of surgery are greater than those provided by any other treatment, and they are achieved more quickly."

Extensive division of soft tissues to correct a deformity that has arisen in adults after traumatic paraplegia or in disseminated sclerosis may be well worth while, as has been shown by Evans and by Hardy. Surgery is less often needed in cases of hemiplegia in adults when physiotherapy and splintage after the acute episode have succeeded in preventing deformity, but sometimes a judiciously performed tenotomy or neurectomy (which may be able to be done under local anaesthesia) can confer a benefit which is of all proportion to the extent of the operation.

Rheumatic Fever and Streptococcal Infection

The aetiological relationship between group A β-haemolytic streptococci and rheumatic fever is now firmly established. This is based on three main features. Firstly, there is the epidemiological relationship between upper respiratory infections with these organisms and the subsequent development of an acute attack of rheumatic fever. Secondly, serological evidence of a recent streptococcal infection can be obtained in almost all patients with rheumatic fever if three or more antibodies to streptococcal products are looked for. Thirdly, attacks of rheumatic fever may be prevented by the prophylastic administration of penicillin to carriers of streptococcal infection.