

## **INFANTILE SCOLIOSIS**

Scoliosis develops in infants under the age of two years. In those who are healthy and seemingly normal the scoliosis is termed "Idiopathic" which simply means we don't know why. The idiopathic group is small compared with scoliosis occurring in infants who have an inherited disorder, recognized as a "Syndrome". Some of these syndromes have been identified and named following a variety of investigations such as biochemical tests, chromosomal analyses, and genetic studies. This is a group of children with "Named Syndromes". There is a third group of children also with minor abnormal features which considered together represent a syndrome to which there is as yet no given label. This last group represents the majority of infants developing scoliosis – the "Unidentified Syndrome" group.

Babies grow very fast in the first two years of life, more than and equaling the adolescent growth spurt in the first and second years respectively. Under the influence of this rapid rate of growth, a baby's scoliosis also increases rapidly (particularly in the syndromic groups) if nothing is done to correct the scoliosis quickly. The bent spine gets increasingly bent and twisted until it reaches a point beyond which no treatment can effectively reverse the scoliosis.

Convinced by my research studies that the customary policy of "wait-and-watch and treat when the curve is large" spells disaster for the child with infantile scoliosis, I undertook in 1979 to change the course of a progressive scoliosis and make it resolve completely by taking advantage of the child's rapid growth rate to make the spine grow straight. The underlying principle is to alter the direction of growth of the child's spine from the position of deformity, in gradual stages, to the position of normal growth.

This change of direction, which must be constant to allow the spine to grow in the new position, can only be achieved by means of a non-removable Plaster of Paris jacket. While the jacket is on the spine has no option but to grow in the new position. Each plaster jacket is applied under general anaesthesia and is worn for a period of three months. Before applying the jacket the scoliosis is gently corrected and the corrected position is held by the plaster jacket, applied on a Cotrel frame. General anaesthesia or heavy sedation is imperative so as not to frighten the child. It is no good straightening a bent spine at the expense of a hugely dented psyche!

The Cotrel frame which I have used for many years is a good frame but it is large, occupies a considerable amount of space in the plaster room and it was originally devised to treat adolescent children with scoliosis by plaster jackets.

I have been convinced for a long time that a smaller frame designed for infants and young children up to the age of six or seven (and less expensive than the Cotrel frame) would for these reasons meet with a larger demand. During my biannual visits to Malta for over fourteen years, I had discussions with a Registered Nursing officer working at the Orthopaedic Department of St Luke's Hospital in Malta, with practical experience of casting procedures and techniques involving children and this led to the realization and construction of the first prototype for a frame specifically designed for infants and young children.

Over the past twenty years I have treated a large number of children with infantile scoliosis referred at all stages of the deformity – early, late and hopelessly late. Those that were referred early with smaller curves have been cured; at present they number 94 children who I have followed up after their spines have grown straight for a period of eight years. When a spine has been helped to *grow straight* it remains straight. Sadly the scoliosis in those who were referred late and hopelessly late, especially children with syndromes, have gone beyond the stage of no return and these children will always have a scoliosis and remain patients for many years. All will require corrective surgery which is not always the final solution.

Our aim is to establish a centre for further research, education, dissemination of information and a team of trained personnel dedicated to the early treatment of infantile scoliosis.

This is early Orthopaedic Medicine. If a radical change is to be brought about as with Congenital Dislocation of the Hip, early detection followed by early immediate action will enable a larger number of babies with bent spines to grow up as normal children, with normal spines and backs.

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