Infantile Scoliosis Outreach Program

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Infantile Scoliosis Outreach Program

EARLY TREATMENT WITH EDF & MEHTAS METHOD

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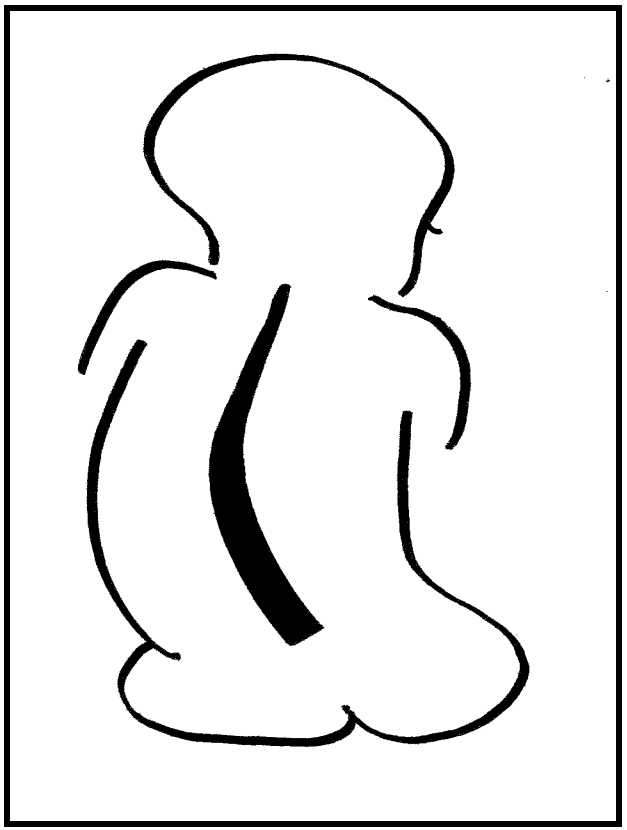
Scoliosis In Infants



Min H. Mehta, M.D., FRCS

Infants and young children with progressive infantile scoliosis are like wildflowers:
each being individually unique.
Some can with stand Mother Nature's elements and grow straight, while others need a little guidance in the beginning….

RESEARCH AND FINDINGS

From containment to cure

This study has contributed to furthering the aim of reversing progressive scoliosis in infancy by demonstrating that far from being an adverse factor, the vigorous growth of infancy is the principal force in converting a progressive infantile scoliosis into a straight spine by Early Treatment (ET). This perception of growth working as a corrective force in childhood deformities should alter the aim of the treatment of infantile scoliosis from containment to cure, and (realize) a future when many more children with progressive deformity may be restored to normal appearance and function.

Min H. Mehta, M.D., FRCS

Growth as a Corrective Force in the Early Treatment of Progressive Infantile Scoliosis, JBJS (Br) Sept. 2005; 1237– 1247.

To summarize

Progressive infantile scoliosis (PIS) can be helped to grow straight by early diagnosis and early referral for treatment and fall into two groups:

Group 1 - those who came in time to be rescued.

Their spines were fully corrected.

Group 2 - those who came too late to be rescued.

Their Scoliosis improved a little with treatment but all will need surgery at adolescence. In this group were several syndromic scoliosis - namely, scoliosis in children with unidentified syndromes or identified syndromes such as Marfans, Prader Willi, EDS, etc.

Syndromic scoliosis never resolves spontaneously. It always increases, often rapidly and needs very Early Treatment to control progression.

Reference

The RVAD (rib vertebra angle degree) in the early diagnosis between resolving and progressive infantile scoliosis (PIS).

MEHTA, M.H. (1972)

Journal of Bone and Joint Surgery

54B, 230 –243

Scoliosis In Infants

M.H. Mehta, M.D., FRCS

We do not understand why a healthy adolescent, healthy five year old or a healthy baby develops scoliosis.

Early detection of scoliosis in normal healthy children is very important because severe deformity can be avoided by Early Treatment (ET).

Who detects scoliosis?

In babies the best detectors are not health visitors , not doctors, but **the parents, mostly mothers**.

Mothers pick up scoliosis in infants at a very early stage before even the unpracticed eye of a doctor. Who only occasionally sees scoliosis.

Mothers may notice that the baby always lies curved to one side and that there is a continual head tilt towards the concave side of the curve. An infant or young child with progressive infantile scoliosis (PIS) will avoid lying face down and parents may notice while burping the baby after feeds, an asymmetry of the back, one side feels more prominent.

To examine a baby for these early signs of scoliosis, the diaper which covers the lower half of the back **must always be removed.**

When viewing the back with the baby sitting up, an overall curve (usually, but not always, convex to the left) is seen, so that the left shoulder is higher and there is a tilt of the pelvis upwards to the right giving a short right side of the body and a long left side.

The head is turned away from the convexity and there is always some oblique head moulding, and one side of the face looks a little smaller than the other side.

What happens next? In my experience, mothers act immediately and consult their Pediatrician or Orthopaedic surgeon. If their examination confirms that the baby has a scoliosis an X-ray is usually requested.

The correct positioning for the X-ray is to lie the baby down on his back, legs held parallel and arms held evenly away from the body. For older children the X-ray is taken standing with arms held to the side, not above the head.

Applying a plaster jacket or any form of external restraint to babies and small children, although not painful, is a frightening process, so it is a kindness to apply the plaster under general anesthesia. The EDF plaster jacket is applied, mother is there when the baby wakes up and they go home the next day.

The EDF jacket corrects the curve very gently. The principle is to change the direction of growth every two the three months so that little by little the spine grows straight.

Large chest windows are made in the jacket to encourage expansions of the lungs and the rib cage. Windows are also made selectively on the back over the concaved flattened side of the ribs to address rotation. This allows the child's own breathing and laughing and shouting to encourage symmetrical growth of the rib cage by expansion of the flattened concave side of the ribs and pressure moulding of the prominent convex side of ribs.

Figure 2 *- The same child at the age of six years. The routine follow-up X-ray shows that the spine remains straight.*

Early Treatment

However, growth can be used to correct scoliosis by altering its direction of growth and maintaining it by an external force. Braces cannot do that because braces do come off when the baby is bathing and so on. **This is why I use plaster jackets to maintain the altered direction of growth and guide the spine to grow straight.** We adults do not take kindly to the idea of wearing a plaster jacket, but the babies tolerate plaster jackets and take it all in their stride. **They learn to crawl and walk and climb in their plaster jackets and are very active.**

Figure 1 *- shows an X-ray of a child with progressive scoliosis at 13 months. It was taken before EDF plaster jacket treatment was started. By the age of 3 years the spine had responded by growing straight. No further treatment was required.*

Which scoliosis will progress?

In about 90 percent of healthy babies the scoliosis will correct itself within about eighteen months and needs no treatment other than a periodic check-up to monitor that the spine is growing straight. In the remaining 10 percent, however the spine is unable to correct itself and it is in this group of babies that early diagnosis of the progressive nature must be treated early with EDF (elongation, derotation, flexion) casting.

It is not the size of the curve seen on the X-ray that gives early warning of a progressive curve, but the orientation of the ribs to the spine.

A normal spine is in the center of the back an the rib arches are symmetrical: that is, the rib vertebral angle degree (RVAD) will be the same on both sides. In any scoliosis, progressive or resolving, there will always be an obliquity of the ribs on the side of the convexity of the curve compared with the ribs on the concave side. That difference is greatest at the summit of the curve - namely, the apical or central vertebra of the curve.

When the RVAD difference measured at the apical vertebra on the first X-ray is less than 20° it is likely, in about 80 percent of cases, to be **Spontaneously Resolving Scoliosis.**

The X-ray should be repeated after two or three months but no later. Then if it is a spontaneously resolving curve there will be a reduction of the RVA difference. In other words, nature is spontaneously correcting not only the curve but also the asymmetry of the childs rib cage.

If, however, the RVAD difference on the first X-ray is more than 20° it is likely to be a **Progressive Scoliosis**. The diagnosis of a progressive infantile scoliosis is confirmed if the second X-ray, repeated after two or three months, shows the RVAD difference to be the same or to have increased.

Early Treatment with EDF

The diagnosis of a progressive scoliosis in babies should be followed by Early Treatment (ET) without delay.

Why? Because babies grow faster in the first two years of life than ever again, and if there is a curve and nothing is done about it during this time, the curve's progression will keep pace with the rate at which the baby is growing. In the first two years of life there is a peak of growth which is twice the peak of growth rate at adolescence. So, inaction in respect of scoliosis in the first and second years in bad news. **So the equation is:**

Scoliosis + Rapid growth + Inaction or Ineffectual action = BAD

But that same vigorous rate of growth can be used to get rid of the scoliosis.

Growth is a valuable force which, when harnessed properly, can be used not just to contain the curve but to get rid of it completely. One of the functions of growth of which we are not aware—namely, that growth also determines the shape of a fast growing organism. Be it a bent finger, a club foot or scoliosis. In other words, if the forces of growth are left to continue they will simply perpetuate the shape the find they are working on. So, a progressive scoliosis will get larger without treatment.