

II. Scientific Papers:

1) The Prognostic Value of the Radiologic Appearance of the Ossific Nucleus of the Navicular in Clubfeet

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Abstract

Introduction: Clubfoot is a congenital deformity consisting of hind foot equinus, hind foot and forefoot varus and supination of the forefoot. In a complex deformity involving many bones, articulations and soft tissue structures. The deformity may be idiopathic or associated with congenital or neuromuscular problems. Plain x-ray is the most dependable radiological exam for diagnosis and prognosis of clubfeet.

The ossific nucleus of navicular usually appears between 3 – 5 years of age. However in clubfeet the appearance of navicular might be delayed or when appearing it might look “abnormal in shape”.

Here was retrospectively evaluated x-rays of 41 feet which were clubfeet who were treated surgically in Hospital for the first time by soft tissue release, and evaluating the relationship of the appearance of navicular with the prognosis of the surgery.

Methods: We reviewed the record and x-rays of 41 clubfeet with no associated congenital or neuromuscular disorders who underwent soft tissue release as a primary surgical treatment. All the patients had their primary treatment in our Hospital between 1993 and 1998 with a follow-up of 5.9 years.

There were 24 feet, which had normal shaped navicular and 17 feet with abnormal shaped navicular.

We evaluated radiographs done pre-op, post-op and at the time of the most recent follow-up visit. We measured talocalcaneal angles, talohorizontal angles, space between articular surface of talus and cunifomis, length of navicular, level of dorsal subluxation of navicular.

Results: For the feet with avascularized navicular and the non-vascularized mean age at surgery was 1.0 year & 1.8 respectively. The mean radiological follow-up was 4.8, 6.9 respectively. Relapsed clubfoot was 15.7%, 16.6% respectively. Post-op infection 15.7, 8.3 respectively. Decreased distance between talus and cunifomis 36.8%, 20.8% respectively.

Conclusions: One result showed that avascular necrosis of navicular has no prognostic value in accordance with the complications of surgery. But increased incidence of avascular necrosis is related to the decreased distance between articular surface of talus and cunifomis and the age of the patient at time of surgery if the patient is less than 1 year old.

Significance: Avascular necrosis has no prognostic value in clubfoot post surgery but it is preferable when doing the surgery to do it in a child 1 year or above and not compressing the navicular between the talus and cunifomis during surgery.

2) Evaluation of post operative residual spinal deformity and patient outcome in idiopathic scoliosis patients in Palestine using the SRS 22 outcome instrument.

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Purpose: To clarify the correlation between patient outcomes evaluation (using SRS 22) and resulting spinal deformity after surgery according to radiographic parameters in Palestinian patients.



Method: We independently translated SRS 22 from English to Arabic questioner which were filled out by 36 patients.

All of them were cases of idiopathic scoliosis treated by surgery and instrumentation in Palestine from 2004-2007, with a mean follow up time of 1.5 years, with a minimum post-op period of 10 months. Mean age at this of surgery was 13 years old.

Radiographic examination included pre and post op. a Cobb angle, and the curves were classified as thoracic "26" lumbar "1" thoracic and lumbar "9".

Results: The questionnaire results were used to divide patients into 2 groups for each domain one for those who had a score of 4 and above (satisfied), the other for those who had a score of below 4 (unsatisfied).

Comparison between SRS 22 and radiographic results revealed positive correlation between self image, pain and mental health domains with the Cobb angle correction. On the other hand, no correlation was detected with function domain.

SRS 22 score	Mean Cobb angle post-operatively			
	<i>Self image</i>	<i>Pain</i>	<i>Mental health</i>	<i>Function</i>
<i>4 and above</i>	29°	32°	29°	33°
<i>Below 4</i>	39°	41°	39°	28°

Conclusion: What can be concluded from the data above is that the Arabic version of SRS 22 is a reliable instrument for measuring idiopathic scoliosis patients satisfaction with regard to the amount of correction post operatively in Palestine.

Scoliotic deformity should be substantially reduced by the surgical treatment to improve satisfaction rates according to the SRS 22 outcome.

3) The Value of the Salter Osteotomy as a Routine Adjunct to Open Reduction of Developmental Dislocation of the Hip

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Introduction: Despite the widespread use of screening programs to detect hip dysplasia in the newborn, children are still seen later in childhood with established dislocation. We retrospectively evaluated the radiographs of 59 cases of open reduction, with and without Salter osteotomy, both to evaluate the long-term effects of the Salter osteotomy on the quality of the hips and to decide if it should be a routine adjunct to open reduction. We also compared the hips with the Salter osteotomy done at the time of primary open reduction with those in which it was done later as a secondary procedure to determine if the procedure actually affects the development and modeling of the acetabulum. This series is distinguished by the long follow-up to, or almost to, skeletal maturity.

Methods: We reviewed the records and x-rays of sixty two (59) hips with DDH with no associated congenital or neuromuscular disorders who underwent open reduction as primary surgical treatment after the age of 1.5 years. All patients had their primary treatment in our hospital between 1975 and 1992 with a minimum follow-up of 9.6 years. There were 36 hips that had only open reduction as a primary procedure (Group R) and 26 hips that also had a Salter osteotomy (Group RS). In Group R there were 4 hips that had a subsequent secondary Salter osteotomy (Group R/S, the slash representing an interval of time).

