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Developmental Dysplasia of Hip - Where do we stand?

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Developmental Dysplasia of the Hip (DDH) is a clinical condition requiring specialized and dedicated people for its treatment. The treating surgeon should have a sound knowledge of the factors responsible for normal growth, patho-anatomy, obstacles to reduction, natural history of the disease and reasons for failure of treatment before daring into treating DDH. The treatment becomes more complex and challenging with increasing age of the child.¹

As the day and age of sub- and super-specialization is dawning, the results of its treatment, especially in the older children (walking age group) in the developed world have improved considerably.² Unfortunately, we, in Pakistan do not have many fellowship trained dedicated paediatric orthopaedic surgeons; hence most patients end up being treated by 'general orthopedic surgeons' who have a variable experience in treating this condition. Most of them have learned to treat DDH by default and hardly any by

their choice. Personally, I have witnessed even some of the senior graduating residents being unable to put on a Pavlik harness or a Von Rosen splint on to a neonate for dislocated hip. Proper use of these devices within the first few months of life and meticulous monitoring ensures excellent results^{3,4} with success rates as high as 95% in expert hands. There is thus an imminent need for a focus on this aspect in the regular orthopaedic postgraduate curriculum. The recent efforts by Pakistan Orthopaedic Association to create sub-specialty forums is a step in the right direction. A workshop on applying the DDH splints was also held in this connection by the paediatric orthopaedics forum last year. Such brilliant efforts need to be continued on a regular basis. As realization about this deficiency in residency training grows, more and more students will be interested to attend such workshops.

Parents of children with DDH are usually unaware of the training level and expertise of a particular surgeon when they approach an orthopaedic surgeon for the treatment of their child. The treatment results are thus very variable and most are never reported. Patients ending up with complications are labeled under 'God's will' and the primary surgeon occasionally has no idea of what went wrong during the procedure; the challenge of offering a revision procedure can only be undertaken once the pitfalls of the primary surgery are identified. A similar example is to order x-ray for evaluation of newborn with suspected DDH which is not indicated in this age-group.⁵ Parents of children with DDH should therefore be educated to approach a specialized orthopaedic surgeon for the treatment of their child's condition or one who has considerable experience in treating DDH. Parental counseling is also invaluable during the entire treatment process and can play a key role in successful treatment especially with the harness.

Based on personal clinical experience, it is common knowledge that DDH has a lower incidence rate than other common conditions like septic hip arthritis or acute proximal femoral osteomyelitis. No formal studies reporting the incidence of DDH in Pakistan have been reported so far. In the west, it is around 5 in 1000 hips and risk factors include first born, female sex, positive family history, breech presentation and oligohydramnios.⁶ Other associated factors include ethnic background (e.g. Native American), torticollis and lower limb deformity.⁵ Epidemiological studies are desperately needed in our part of the world to isolate families and ethnic groups who are suffering from this problem. Preventive strategies can then be targeted towards them. A common observation is the absence of DDH in communities where mothers carry neonates on their backs with hips abducted apart. One can hypothesize that carrying and maintaining a neonate in a 'pangoora' by the bedside with both legs tightly adducted may have an

opposite effect. This is routine in some segments of our society and we need to study the rates of DDH in these families.

Routine screening of the newborn should include both the Ortolani test and the Barlow maneuver. All orthopaedic and especially paediatric medicine residents need to master the techniques of these two tests. Paediatric medicine residents are the first ones examining all newborns. It is their high index of suspicion that will raise alarms and calls for orthopaedic consultation. An opportunity of diagnosis missed at birth is usually paid very heavily by the child and his/her parents in later years as delayed treatment becomes more complicated and challenging. The use of ultrasound for routine screening has huge financial implications and should be restricted only to high risk categories mentioned above.⁷ It is one of the best imaging modality to show real-time pictures of the hip joint in a neonate.⁸ Dedicated paediatric orthopaedic surgeons need to master its technique and have a machine in their clinic to facilitate regular monitoring.

Surgical treatment of DDH is reserved for children in the walking age group.⁴ The goals are to create normal anatomy of the proximal femur and acetabulum and maintain that anatomy to allow normal development of hip function. With experience and greater understanding of the outcomes, surgical recommendations have also changed. Pre-operative traction has been replaced by femoral shortening.⁹ A simultaneous open reduction, femoral shortening, de-rotation, and acetabuloplasty, all together known as the triple procedure, are now the current recommendations in an older child.^{10,11} This is a complicated surgery, and the outcome has a direct correlation with experience. The need for early referral to a specialized care centre is again emphasized.

The value of objectively evaluating one's results is tremendous. Several universally accepted evaluation criteria such as the Severin's scoring system¹² and the Iowa hip score¹³ for evaluating hip function are available. They serve as the basis for objective analysis and presentation of results. Young surgeons entering into this specialized field are encouraged to maximize the use of these internationally accepted systems in their routine pre- and post-op evaluations. Hardly a couple of studies documenting the results of treatment of DDH could be found in the local literature.¹⁴ This is despite the fact that DDH is being treated in every major public and private teaching hospital of the country. The objective of writing a manuscript can only be achieved once proper documentation and objective evaluation are incorporated from the very beginning and become part of routine practice. Production of quality scientific papers on their surgical work is probably the best

reflection of any good residency program in the country.

In general, paediatricians and family practitioners should refer a child with DDH for specialist care as early as possible. The outcome of treatment during the first six months of life is much better and predictable than in late-diagnosed DDH. Dedicated surgeons sub-specializing in paediatric orthopaedics is the need of the day.

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