

## Diagnosis and treatment development dysplasia of the hip joint in Mongolia

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### Introduction

Development dysplasia of the hip (DDH) is developmental abnormality of the hip including the acetabulum and the proximal femur, and the labrum, capsule, and other soft tissues. Hip dysplasia is related to different factors. Risk factors of the development dysplasia are : breech delivery, family position history, general joint laxity, and Mongolian life style. For example life style in Bayan-Olgii province where Muslim is popular religion is breech nursing body of newborn (Fig. 1).

Incidence the Congenital Dislocation of the Hip (CDH) is 2 of 1000 newborn. Dislocation of left hip joint is more frequent than right hip joint. Bilateral dislocation is founded in 40% of all. Ratio of girl to boy is 6 to 1.

Early clinical, classic examinations of DDH in newborn are Ortolani and Barlow test, asymmetry of the gluteal thigh or labral skin folds, standing or walking with external rotation, and leg-length inequality.

Treatment of DDH is depending on the patient's age and the success of the previous techniques. Children younger than 6 months with instability treated with a form of bracing, usually

a Pavlik harness. Children older than 6 months with hip instability or dislocation are recommended traction method. We agree this strategy and we used traction method by B. Budee (Fig. 2). For children aged from 12 to 36 months, Closed reduction and cast immobilization, Innominate osteotomy, femoral osteotomy, and open reduction are our choice. This study is a report of DDH and CDH in Mongolia.

### Materialis and Methods

This study included patients who have visited our hospital at the age three months to 24 months old. We retrospectively reviewed and analyzed patients' records of the 15000 cases in DDH and 561 cases in CDH from Jan. 1998 to Jan. 2008.

### Results

The incidence of hip instability during newborn was high in Mongolia. From a point of risk factors, 60% of the patients with DDH were female and the breech positioning was approximately 40% in children with DDH. Development dysplasia of the Hip joint was associated with metatarsus adducts, torticollis, cerebral palsy, and arthrogryposis, and their overall rate was 1 case per 90 newborns.



Fig. 1. Typical Mongolian style nursing



Fig. 3. Our Pavlik Harness

### Discussion

In order to prevent DDH, regular examination in early age for every newborn child is important of all. We believe if we can discover DDH early, it is possible to treat in conservative ways like Pavlik harness (Fig. 3). Conservative treatment with regular clinical examination is done in period time from 3 for 6 months.

Mongolia has 1,564,116 square kilometers, the 19th largest and the most sparsely populated independent country in the world, with a population of around 2.9 million people. Approximately 30% of the population is nomadic or semi-nomadic. Since 1990, key health indicators like life expectancy and infant and child mortality have steadily improved, both due to social changes and to improvement in the health sector. However, serious problems remain, especially in the countryside.

Average childbirth (fertility rate) is around 2.25–1.87 per woman in 2007 and average life



Fig. 2. Traction treatment by Dr Budee

expectancy is 67–68 years. Infant mortality is at 1.9%–4% and child mortality is at 4.3%.

The health sector comprises 17 specialized hospitals and centers, 4 regional diagnostic and treatment centers, 9 district and 21 aimag (prefecture) general hospitals, 323 soum hospitals, 18 feldsher posts, 233 family group practices, and 536 private hospitals and 57 drug supply companies/pharmacies. In 2002 the total number of health workers was 33273, of which 6823 were doctors, 788 pharmacists, 7802–nurses and 14091 mid-level personnel. At present, there are 27.7 physicians and 75.7 hospital beds per 10,000 inhabitants.

In far country regions clinical staff is much lacked. For decrease DDH we need increase medical staffs in countryside that have proper professional knowledge. So they can treat or send patients who need surgical treatment and conservative treatment to Ulaanbaatar's MONGOLIAN NATIONAL ORTHOPAEDIC & TRAUMATOLOGY RESEARCH CENTER.

To increase medical staff with more professional knowledge about DDH, we need more information and make more research. Especially we should learn about medical examinations.

treatment (conservative and surgery), test and system of regular medical examination service from countries such as Japan that decreased a DDH in very low numbers in a few years. It is important for Mongolian medical staff such me to visit foreign countries for research and study, and to make learned knowledge spread, teach them in university, and give instructions to colleagues when back in Mongolia.

We believe that the following points are important to decrease DDH in future in country and in the city.

1) Organize free seminars and lectures for future and young parents. Main contents are healthy pregnant life style of mother, healthy food manners, and dangerous factors such as smoking and alcohol. Most important thing is to teach mothers how to hold in position which does not cause DDH and knowledge of proper wear way of pampers and clothing, which are not too tight and don't restrict moving for baby's hip joint.

2) Organize seminars and lectures for gynecologists about DDH. Cooperate with gynecologists, exchange and introduce patient's information of symptoms.

3) Teach and train family doctors about symptoms and test of DDH, and use it on clinical examinations.

4) Make clinical examinations regularly though out the country. Best age for such examination is about 3 month age. Teach country clinical staff about symptoms and test of DDH, proper guidance for country people. Supply country clinics equipments such as ultrasonography.

5) Teach medical students detailed information about DDH. Because it will make them more interested in the orthopedic pediatric field, and make them work in future.

## References

- 1) B. Budee., Early medical diagnosis and defferential treatment of infant until 3 age hip joint dislocation. 1998.
- 2) Ya. B. Kutsenok, E. A. Rulla, V. V. Melchik., CDH, DDH and subluxation, dislocation of hip joint. Health Magazine, Kiev. 1992.
- 3) Zaidel, I. I. Mirzoeva, V. M. Parfenov., Research results of future treatment of newborn infant hip joint dislocation. Early medical diagnosis and treatment og infant orthopedical disease. 1983,
- 4) J. Skarabal., Casna prevencekycelni dysplasie. Naze-zkusenosti ze sledovani Komplikovanych savu 2 cast. Acte chir orthopaed. Traumatol. Cech. 1985. 52. N6. p. 519-520.
- 5) David L. Skaggs., Hip Problems from infants to Adolescents.. /University of Southern California. Children's Hospital. Los Angeles. 2005.