

Evolution of the spectrum of neurogenic limb deformities in Qinsihe Orthopaedics Institute

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Background: With the improvement of medical care conditions, the incidence of neurogenic limb deformities has still been increasing, especially in developing countries, but some changes have taken place in the spectrum of diseases.

Objective: To summarize the main characteristics of neurogenic limb deformity, to explore the changes of disease spectrum in the past years, and to preliminarily explore the indications of orthopedic surgery using external fixation.

Method: A total of 35075 cases from May 1978 to December 2018 were treated by Qinsihe orthopedic team. The age, agender, deformity characteristics, etiological and pathological composition, regional distribution and surgical methods of the patients were statistically analyzed.

Result: There were 20458 males and 14617 females. The age was 1 to 82 years old, average 20.5years, the majority people were 11 to 25 years old, which were 19363 cases (63%), of which 33259 cases (94.82%) were operated on lower extremity. The geographical distribution of patients covers all the provinces, municipalities directly under the central government, autonomous regions in China and 12 foreign countries. There are 202 etiologies involved neurological, heredity, metabolism, traumatic sequelae, congenital, vascular, lymphoid, skin, endocrine, iatrogenic and so on.

The top six limb deformities are poliomyelitis sequelae(67.05%), cerebral palsy(13.31%), spinal bifida sequelae(2.59%), traumatic sequelae, genu varus, genu

valgus, Congenital talipes equinovarus. There were 280 kinds of surgical methods, the majority of which were Achilles tendon lengthening, supracondylar osteotomy, subtalar joint arthrodesis, tibiofibular osteotomy, metatarsal aponeurosis and Achilles tendon replacement of peroneal longus muscle, etc. 8702 cases were treated by orthopaedic surgery combined with external fixation, including Ilizarov fixator 3696 cases and Hybrid fixator 5006 cases.

Conclusion: Qinsihe orthopedic database with 40 years is the largest one of limb deformity and disability in China. It reflects the changes and evolutions of etiology, type, population characteristics, surgical methods and strategy of limb disability and deformity which can be treated by orthopedic surgery. In terms of neurogenic limb deformities, the sequelae of poliomyelitis have decreased, and the number of patients with cerebral palsy and spina bifida sequelae has increased year by year.

[Key words] Orthopedics; Deformity; Neurogenic limb deformity; Data base