SCIENTIFIC ACHIEVEMENTS OF MODERN SOCIETY

Abstracts of V International Scientific and Practical Conference

Liverpool, United Kingdom

8-10 January 2020

Liverpool, United Kingdom

2020

UDC 001.1
BBK 83

The 5th International scientific and practical conference "Scientific achievements of modern society" (January 8-10, 2020) Cognum Publishing House, Liverpool, United Kingdom. 2020. 1177 p.

ISBN 978-92-9472-193-8

The recommended citation for this publication is:
Ivanov I. Analysis of the phaunistic composition of Ukraine // Scientific achievements of modern society. Abstracts of the 5th International scientific and practical conference. Cognum Publishing House. Liverpool, United Kingdom. 2020. Pp. 21-27. URL: http://sci-conf.com.ua.

Collection of scientific articles published is the scientific and practical publication, which contains scientific articles of students, graduate students, Candidates and Doctors of Sciences, research workers and practitioners from Europe, Ukraine, Russia and from neighbouring coutries and beyond. The articles contain the study, reflecting the processes and changes in the structure of modern science. The collection of scientific articles is for students, postgraduate students, doctoral candidates, teachers, researchers, practitioners and people interested in the trends of modern science development.

e-mail: liverpool@sci-conf.com.ua
homepage: ***http://sci-conf.com.ua/***

UDC 616.72-008.1-071.3:616.721.6-721.7

MODIFICATION OF THE LUMBAR LORDOSIS VALUE AFTER TOTAL HIP ARTHROPLASTY IN PATIENTS WITH DEVELOPMENTAL DYSPLASTIC HIP

Zub Tetiana Oleksandrivna
PhD, teaching assistant
Oliinyk Yevheniia Oleksandrivna
Kostrytsia Kateryna Oleksandrivna
students
State Instititution "Dnipropetrovsk Medical Academy of the Ministry of Health of Ukraine"
Dnipro, Ukraine

Abstract. This paper is dedicated to problems of medical rehabilitation of the patients with developmental dysplastic hip after total hip arthroplasty. We studied the features of hip joints and lumbar spine changes. Restoration of range of motion in operated hip joints makes modification of postural balance and decreasing of the lumbar lordosis value. Process usually stabilizes by the end of the 2nd year after total hip arthroplasty.

Introductions. Today total hip arthroplasty (THA) is known to be an effective method of medical rehabilitation in cases of developmental dysplastic hip (DDH). According to data of different scientists and of European Arthroplasty Registers, DDH leads to arthroplasty in 2-8 % of cases, but for young patients percentage reaches to 29 % [1]. In Ukraine 14.2-44.8 % of THAs are performed because of developmental dysplastic hip [2]. Despite a great success in THA generally in cases of DDH complications rate remains high and amounts to 20 % [1, 3]. Most scientists consider that the young age is the main risk factor for patients with DDH, because it correlates with higher physical activity and leads to faster wear bearing and early aseptic loosening. It should be noted that a conventional rehabilitation method at

postoperative period after THA are oriented on restoration of muscle strength, range of motion in hip and ipsilateral knee joints and also on recovery of support and walking function. But a value of function of lumbar spine in rehabilitation process of patients with DDH after THA is not determined yet.

Aim of paper – to determine features of change of lumbar lordosis in patients with developmental dysplastic hip after total hip arthroplasty.

Materials and methods. Patients with DDH after THA who were on treatment in Orthopaedic department in Dnipropetrovsk Regional Hospital named by I.I. Mechnikov during 2016 and 2017 years were included in the observation. Among 66 patients 7 were male and 59 were female (ratio male:female – 1:8.4). The mean age at the moment of operation was 50.1±10.2 years (from 28 to 69 years). 33 patients (50 %) had unilateral hip lesion. And in 33 patient both hips were affected with dysplasia. Among them 17 patients were operated on both hips during observation period, in 6 patients the second hip joint was replaced and 10 patients with bilateral lesion were operated only on one side. Total amount of hip arthroplasties was 83. The mean gap between operation was 5 months. All patients were investigated before operation and in terms about 2 weeks, 6 months, 1 and 2 years after it. We measured the magnitude of lumbar lordosis with a special instrument that we developed ourselves.

Results and discussion. Considering features of an evolution of DDH and obvious influence of this pathology on morphology of all locomotor system the crucial structure that changes simultaneously with hips is lumbar spine. A degree clinical manifestation of secondary compensatory changes of spine and structural alteration of hip joint can compete with each other. As a rule those processes are mutually burdening and impaired function of hip joint determines mane symptomatology. It is obvious that after THA all structures which determine postural balance in this region will change. These changes will make a significant transformation in the redistribution of the main efforts both in the static and in the kinematic chain “pelvis - lumbar spine”.

At the beginning of functioning after THA structures of the lumbar spine work as a stabilizers, and they don’t change a lot, so depth of lumbar lordosis remains stable.

Only in term between 2nd and 12th months changes those confirm the beginning of destabilization of the lumbar spine occur. The lumbar lordosis is flattening and its magnitude diminishes at mean to 5.3 %. In this period 74 % of patients begin to complain of low back pain of different intensity. Thus, in the period since 2 months after THA patients need for changes in their rehabilitation program which depend on the time of beginning, pain character and intensity. The next period lasts during the second year and diminishing of the lumbar spine depth in this period became stable and constitute 12-15.4 %. In 67 % of cases final formation of postural balance manifests with decreasing of low back pain syndrome and achieving maximum range of motion in the hip joints. It should be noted that changes in value of lumbar spine depend on patients' age. At age group younger 49 years such changes are about 21.3 %, but in patients older 50 years this mean is about 2-9.5 %.

Conclusions.

1. After total arthroplasty in cases of developmental dysplastic hip recovery of hip function leads to disturbance of postural balance which we can see in decrease of the lumbar lordosis value.
2. The mean flattaning of lumbar lordosis is about 5.3 % and they stabilize by the end of the 2nd year after total hip arthroplasty.

REFERENCES

1. Eskelinen A. Total hip arthroplasty in young patients – with special refer-ences to patients under 55 years of age and to patients with developmental dysplasia of the hip. Academic dissertation. - Helsinki, 2006. – 128 p.
2. Kosiakov O.M., Babin V.K., Grebennikov K.O. et al. Evolution of total hip arthroplasty in dysplastic hip arthritis. 20 years of observation // Abstractbook of the 15th Ukrainian orthopaedic Congress, Dnipropetrovsk, 16th-18th of September, 2010. - P 144.
3. Loskutov A.E., Sinegubov D.A. Bilateral hip arthroplasty. Dnipropetrovsk, Porohi, 2008. - 292 p.