A Prospective Multi-institutional Study about the Etiology of Hip Osteoarthritis in Japan
-The Involvement of Acetabular Dysplasia-

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INTRODUCTION:
Coxarthrosis is a major disease that affects the healthy life-span of a population. It necessary to fully understand the patient’s condition before systematic treatment can be applied. Coxarthrosis is thought to be secondary to acetabular dysplasia in this country. This was thought to be mainly due to developmental dysplasia of hips (DDH) at infancy. Currently, there are very few patients with DDH because prophylaxis has been carried out. This may result in a change in the etiology of coxarthrosis in Japan. This study investigated the current etiology of coxarthrosis with a particular focus on the involvement of acetabular dysplasia.

PATIENTS and METHODS:
This is a prospective multi-institutional study of coxarthrosis patients. Data were collected from coxarthrosis patients in the orthopaedic outpatient office of each institution. The patients were required to be old enough to have hip joints that had completed growth plate closure, and hip joints were excluded if they had undergone an operation after the growth plate closure. Data were collected for 9 months after the study received approval from the institutional review board. Data were also collected from new patients with hip osteonecrosis during the same period as controls. Fifteen institutes in five different areas of Japan participated in this study. Written informed consent was obtained from each patient.

The collected data from each patient included the sex, age, the treatment history for DDH, the clinical score of the hip joints based on the Japanese Orthopaedic Association (the JOA score). The score was based on pain (40 points), range of motion (20), gait (20) and ADL (20) scores. In addition, etiology was determined by hip surgeons in each institution from the following disease options; primary osteoarthritis, acetabular dysplasia, congenital dislocation, osteonecrosis, trauma, Perthes disease, slipped capital femoral epiphysis, infection, rheumatoid arthritis, ankylosing spondylitis, neuroarthropathy, endocrine diseases, metabolic diseases, hereditary bone diseases, synovial chondromatosis, generalized osteoarthritis, others. The roentgenographic stages of coxarthrosis, as well the indexes of acetabular dysplasia were assessed in each coxarthrosis joint. The reproducibility of the roentgenographic stage classification or of the acetabular dysplasia indexes was examined in a previous preliminary study in order to ensure reliable data from the multiple institutions.

RESULTS:
The total number of examined coxarthrosis patients was 486 (female 89%, male 11%). The mean age was 58 ± 14 years old. The median age was 59 (15-85) years old. Most patients had no history of therapy for DDH (Fig. 1). The etiology for coxarthrosis was determined to be