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Original Contribution

- 1 Serum Amino-Terminal Pro-B Type Natriuretic Peptide (NT-pro BNP) Status among Heart Failure (HF) Patients in Bangladesh
Banu M, Hoque MR
- 5 Clinical Profile and Immediate Outcome of Children Admitted With Acute Glomerulonephritis in Pediatrics Department of A Tertiary Level Hospital
Sharmin M, Chowdhury AM, Ali MA, Rahman MW, Hossain MA, Rahman MH, Sharmin P, Roy AS, Chowdhury B
- 16 Depression among Medical Students of Bangladesh
Tareq SR, Likhon RA, Rahman SN, Akter S, Basher MS, Hasan MS, Hussain MZ, Khan MK
- 21 Comparison of Serum Amylase and Lipase Levels between Predialysis and Maintenance Haemodialysis CKD Patients
Khan SI, Iqbal M, Chowdhury AA3, Roy AS, Ahammed SU, Asadujjaman M, Rahman MA, Hossain MB, Rabbani MG, Islam MS, Salahuddin AZ, Sarker NR, Das SK, Miah OF, Majumder RC, Borman GC
- 32 Outcome of Bone Marrow Injection in Patient with Delayed Union and Non-Union of Long Bone Fracture
Islam MA, Kabir JJ, Rahman MM, Islam MS, Saha MK, Rahman MM, Akter S, Ara R, Kabir KM
- 37 Antimicrobial Resistance Pattern and Genetic Characteristics of ESBL and Carbapenemase-producing Escherichia coli at a Tertiary Care Hospital in Bangladesh
Khan ER, Paul SK, Kobayashi N, Khan TR, Rahman MH, Rahman MM
- 43 Risk Factors for Hypertension in Young Adults of Bangladesh
Paul GK, Karmoker KK, Sen B, Hussain MZ, Hasan MS, Khan MK
- 48 Evaluation of Breast Lump - Comparison between True-cut Needle Biopsy and FNAC in MMCH: A Study of 100 Cases
Kamal MZ, Banu NR, Alam MM, Das UK, Karmoker RK
- 55 Legg-Calve-Perthes Disease: Correlation between Computed Radiography and Magnetic Resonance Imaging
Banu NR, Kamal MZ, Uddin MS, Ruly RA, Ferdous AM, Islam FA, Alam MM, Das UK, Islam MT
- 60 Influence of the Interval between Antenatal Corticosteroid Therapy and Delivery on the Incidence of Respiratory Distress Syndrome in Neonate
Karmoker RK, Mirza TT, Hossain AK, Ali MA, Sarker K, Zaman K, Talukder A, Kamal MZ, Banu NR
- 66 Frequency and Risk Factors of Erectile Dysfunction among Bangladeshi Adult Men with Type 2 Diabetes Mellitus
Asaduzzaman M, Kamrul-Hasan AB, Islam A, Kabir MA, Chanda PK, Islam MA, Sharif JM, Ahmed N, Mandal T, Ghosh S, Paul PK, Saha RK, Hossain F, Rana MS, Alam K, Kamruzzaman M, Nandi AK, Siddiqui NI
- 73 The Role of Histological Assessment of Distal Doughnut in Low Anterior Resection for Low Rectal Cancer
Ferdous AM, Hossain MS, Sheikh SH, Islam T, Islam FA, Islam MS, Kamal MZ, Mustafa G, Islam A
- 78 Outcome of Double Tension Band Wiring Method for the Treatment of Intercondylar Fractures of Humerus
Rahman MM, Islam NS, Kabir SJ, Islam MS, Rahman MM, Islam MA, Kabir KM, Islam MN, Hossain MA
- 86 Knowledge and Practice of Nurses on Pediatric Pain Management in Bangladesh
Islam MR, Biswas HB, Hossain MS, Kim HS, Azim A, Nath P, Ali MA

*Content continued on
inside front cover*

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Legg-Calve-Perthes Disease: Correlation between Computed Radiography and Magnetic Resonance Imaging

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The purpose of this study is to diagnose Legg-Calve-Perthes disease by computed radiography and Magnetic resonance imaging and accurate staging and correlating the findings of these two modalities. Thirty five (35) patients complaining pain in groins and painful walking, after thorough physical examinations were sent to Department of Radiology & Imaging, Mymensingh Medical College Hospital, Mymensingh, Bangladesh for computed radiography and Magnetic Resonance Imaging examination. This cross sectional study was conducted in the Department of Radiology, Mymensingh Medical College Hospital, Mymensingh, Bangladesh from July 2016 to June 2018. Legg-Calve-Perthes disease among the selected 35 cases were started at the age of 5(2.9%) and age range of the patients were 5-13 years; mean age was (9.63±1.82) years and most of them belonged to 8-10 years of age (51.4%). Patients with Legg-Calve-Perthes disease had been suffering from pain in right and left groins for various durations. Maximum duration was 1-2 years (~88.57%). Maximum proportion of diagnosed patients was delivered by normal delivery (60%) and maximum proportion of patients was premature (65.7%). Most of the patients were low birth weight baby (65.7%). Here chi-square test was done and found no significant relationship between delivery mode and birth weight in case of Legg-Calve-Perthes disease ($\chi^2=1.712$) (P=0.191). The result of the X-ray and MRI findings by cross table of chi square test found fair inter relationship between two diagnostic instruments. Result found fine difference in staging of the disease between X-ray and MRI findings. It can be said that MRI definitely a better tool for early diagnosis of Legg-Calve-Perthes disease and its staging but X-ray modality can be used. A primary tool for diagnosis and staging of the disease can be done where the MRI facility is not available or cost expensive for patient.

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Key words: Computed Radiography, Magnetic resonance imaging, Perthes disease

Introduction

Legg-Calve-Perthes disease (LCPD) is a hip disorder of unknown etiology in children due to an interruption of blood supply to the head of the femur causing it to deteriorate. Many of the effected children have a below-average birth weight¹. Due to the complexity of the disease, there are several imaging modalities used to aid physicians in assessing the severity of the disease to provide guidance to therapy. MRI is a useful tool for the evaluation of Legg-Calve-Perthes disease. A variety of MRI findings may provide valuable prognostic information. The MRI findings of Legg-Calve-Perthes disease are quite variable depending on the different stages of the disease [avascular (or necrotic), revascularization, and healing (or reparative) phases]. The well-known residual deformities of the healed femoral head in Legg-Calve-Perthes disease are most frequently characterized by coxa vara, coxa magna, coxa plana, coxa brevis, and a relatively higher greater trochanter but other changes may occur. The set of deformities may result in a reduced femoral head-neck offset and insufficient articular clearance.

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