Femur

The femur or thigh bone, is the proximal bone of the hindlimb in tetrapod vertebrates. The head of the femur articulates with the acetabulum in the pelvic bone forming the hip joint, while the distal part of the femur articulates with the tibia and kneecap forming the knee joint. By most measures the femur is the strongest bone in the body. The femur is also the longest bone in the human body.

The clinical triad of idiopathic normal pressure hydrocephalus (iNPH) includes gait disturbance, dementia, and urinary incontinence. These symptoms are also frequently observed in patients with proximal femoral fracture (PFF). The aim of this study was to investigate the relationship between PFF and iNPH retrospectively.

Patients and methods: Of the130 patients over 80-years-old with PFF included in this study, 48 were assigned to the PFF group. Forty-eight patients with peripheral vertigo matched with the PFF group for age and sex were included in the control group. We compared the Evans' index (EI), which is a head computed tomography finding of iNPH, and the percentages of patients with EI>0.3 between the two groups. The PFF group was further divided into two subgroups depending on whether EI was higher or lower than 0.3 (the higher or lower subgroup, respectively). We compared the patient's gait abilities before PFF, causes of PFF, cognitive functions, and occurrence of urinary incontinence between both groups.

Results: The mean value of EI in the PFF group was significantly higher than that in the control group (PFF group, 0.301; control group, 0.284; p=0.008). The percentages of patients with EI>0.3 in the PFF and control groups were 62.5% and 35.4%, respectively (p=0.014). In subgroup analyses, the gait ability before injury was worse in the higher subgroup than that in the lower subgroup and was prominent among individuals who could walk only with human assistance (p=0.018). There were no significant differences in other parameters.

Conclusion: Elderly patients with PFF may have underlying idiopathic normal pressure hydrocephalus [1].

Femoral fracture.

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Komoda H, Morita D, Nakayama T, Iwase T. Idiopathic normal pressure hydrocephalus possibly affects the occurrence of proximal femoral fracture. Orthop Traumatol Surg Res. 2023 Nov;109(7):103545. doi: 10.1016/j.otsr.2023.103545. Epub 2023 Jan 6. PMID: 36623705.