The effect of navigator on length of stay and rehabilitation for total hip arthroplasty patients

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Background: Navigated THA is a new procedure in Thailand that has been performed since 2012. The previous studies have reported that navigated THA was a safe, reliable procedure that resulted in a more consistent cup placement compared to the conventional free hand technique and decreased complications of THA, especially dislocation. Perioperative protocols are based on the surgeon's concern about stability of the prosthesis and the patient’s health condition. Assuming that the navigator can improve the alignment and stability of THA, the time to start rehabilitation and the post operative length of stay should be reduced in the hospital that does not implement any perioperative protocols. The purpose of this study was to compare the time to start rehabilitation and the length of stay between navigated and non navigated THA.

Methods: This retrospective study of patients was performed using short stem THA by a single surgeon from March 2011 to November 2012. Seventy-six patients were classified into navigated and non-navigated groups. The patient’s characteristic data that were recorded included age, sex, BMI, commorbid illness, diagnosis, ASA classification, preoperative hematocrit, operative time, type of anesthesia, intraoperative blood transfusion, postoperative length of stay, postoperative complication and time to start rehabilitation. The data were compared between two groups by t-test and chi square test.

Results: There were 41 patients in the navigated THA and 35 patients in the non-navigated THA. There were 35 male patients (85.37%) in the navigated group and 27 (77.14%) in the non-navigated group. The mean age was 44.17 ± 11.39 years in the navigated group and 44.51 ± 8.17 years in the non-navigated group. The mean BMI was 21.77 ± 3.09 kg/m² in the navigated group and 22.44 ± 4.3 kg/m² in the non-navigated group. Most of the patients were diagnosed with osteonecrosis (more than 85% in both groups). Two patients (4.88%) in the navigated group and 4 patients (11.43%) in the non-navigated group had comorbid illness (DM, renal insufficiency, pulmonary comorbidity and steroid use for chronic condition). Sixty-five percent of the navigated group and 80% of the non-navigated group received spinal anesthesia. The mean hematocrit was 40.35 ± 3.67 percent in the navigated group and 38.78 ± 3.48 percent in the non-navigated group. Ninety percent of the navigated group and 97% of the non-navigated group were in ASA classification 1 and 2 and others were in ASA 3. Approximately 7% of the navigated group and 23% of the non-navigated group received intraoperative blood transfusion but did not reach statistic significance. The mean operative time was 108.9 ± 23.12 minutes in the navigated group and 115.43 ± 17.81 minutes in the non-navigated group. Twenty percent of the navigated group and 26% of the non-navigated group had a prolonged operative time of more than 120 minutes. The mean number of days from operation to rehabilitation in the navigated group was 3.27 ± 1.83 days and 4.34 ± 1.33 days in the non-navigated group (p-value < 0.05), which was significantly shorter. The postoperative length of stay was 5.37 ± 2.42 days in the navigated group and 5.89 ± 1.98 days in the non-navigated group. There were 2 patients with minor complications after operation (urinary tract infection and infected arteriovenous fistula).
Conclusions: The navigated THA procedure resulted in a significantly shorter time to start rehabilitation. The postoperative length of stay was lower in the navigated group; however, it was not significant. The navigated THA technique increased the surgeon’s confidence to provide early mobilization.