Direct Anterior Approach Versus Direct Lateral Approach In Total Hip Arthroplasty For Femoral Neck Fractures; Prospective Randomized Controlled Trial

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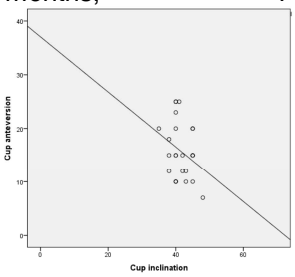
INTRODUCTION:
Femoral neck fractures (FNFs) in the elderly require special consideration to use methods that is less prone to dislocation and facilitate early recovery of walking ability and activities of daily living (ADLs). Controversy exists as to whether early functional outcomes differ after total hip arthroplasty (THA) performed using different most widely used approaches. Direct anterior approach (DAA) has been reported to be beneficial in THA for hip osteoarthritis as it facilitates early recovery of walking ability with lower dislocation rate. Direct lateral approach (DLA) allows for excellent exposure but may lead to Trendelenburg gait, trochanteric bursitis and a greater risk of dislocation. The aim of this study was to compare total hip arthroplasty for FNFs via Direct Anterior Approach versus Direct Lateral Approach regarding clinical and functional outcomes and evaluation of complications.

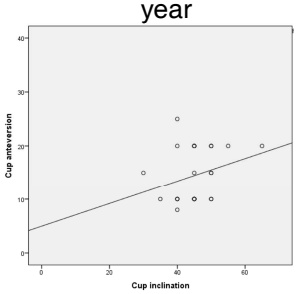
METHODS:
This study was Prospective Randomized Controlled trial (PRCT) including 50 patients. Patients were randomized using sealed opaque envelopes into two groups based on surgical approach 25 patients in each group. Group A included patients who had a THA using a DAA, while Group B included who had a THA using a DLA. Patients were followed up for 2 years; perioperative and postoperative clinical, radiological and functional outcome using Harris Hip Score (HHS) were documented.

RESULTS:
Age and gender were comparable between the 2 groups. Body mass index (BMI) is significantly increased in the DAA (30.1±5.4 vs 25.1±2.7; p =0.0313). The DAA had a shorter incision length (9.2 vs 15 cm; p <0.01), less intraoperative blood loss (370 vs 520 ml, p = 0.04) and lower 48 hours postoperative self-reported pain Visual Analogue scale (2.3 vs 4.5 VAS scale; p =0.035). However, the DLA had shorter operative times (72 vs 90 min, p<0.01) (Table 1). We did not record any intra-operative femoral fracture or any LFCN neuropraxia in the DAA. The DAA had significantly lower variance in cup inclination and anteversion (Figure 1). The DAA had better functional recovery at 3 months based on HHS (87±15 vs 76.2±9; p =0.04) and TUG test (p =0.001); however functional recovery at 6 months, 1 year and 2 years was similar between the two groups.

DISCUSSION AND CONCLUSION:
This study suggests that patients with FNFs treated with THA with DAA might have functional advantages in early recovery period compared to the DLA. There is no radiological evidence that DAA leads to malposition of the implant. The DAA for THA in FNF is a safe procedure with less dislocation rate, however no functional difference was found at 6 months, 1 year and 2 years follow-up.



DAA



DLA

Variable	Group	Mean	Std. Deviation	P value
Operative time in min	DAA	90	16.528	<0.001
	DLA	72	10.054	
Intraoperative bleeding ml	DAA	370	128.225	<0.001
	DLA	520	89.768	
Incision length cm	DAA	9.2	1.227	<0.001
	DLA	15	1.186	
VAS score (48 hr post)	DAA	2.3	0.583	<0.035
	DLA	4.5	0.577	