

PD-7. THIGH ROTATION AND THE ANTERIOR APPROACH TO THE SCIATIC NERVE; AN MRI STUDY.

Moore, C.¹; Wildsmith, J.¹; Sheppard, D.²

1. University Department of Anaesthesia, Ninewells Hospital and Medical School, Dundee, Tayside, United Kingdom; 2. Department of Radiology, Ninewells Hospital and Medical School, Dundee, Tayside, United Kingdom

The anterior approach to the sciatic nerve block may be associated with a high failure rate because the nerve lies posterior to the lesser trochanter of the femur at the level of needle insertion (1). However previous work using cadavers (2,3) demonstrated that internal rotation of the leg renders the nerve more accessible to the anterior approach. We wished to examine this relationship in vivo.

After ethics committee approval, five male and five female volunteers consented to undergo magnetic resonance imaging. A vitamin E marker was placed on the surface where a needle would have been inserted for an anterior approach to the sciatic nerve (4). Three scans were then performed, one with both legs in the neutral position, the next with maximal bilateral internal rotation at the hip and the third with maximal bilateral external rotation at the hip. These scans were then examined with a consultant radiologist. The line of site from the insertion point to the sciatic nerve was examined, and the distance from the skin to the nerve measured, as were the distances from the line of site to both the femoral artery and nerve.

The mean age was 30 years (range 21 to 44) and the mean body mass index was 24 (range 19.5 to 28). Other results are in the table, given as numbers (out of 10) or mean distances (mm).

These results confirm that, as the thigh is moved from an externally to an internally rotated position, the sciatic nerve becomes more accessible by the anterior approach, and the risk of femoral artery or nerve puncture is reduced, but not eliminated.

1 Charlton JE, Nicholls BJ, White E. *BJA* 1987; 59: 127p

2 Hadzic A, Riess W, Dilberovic F, April EW, Kroorn R, Thys DM, Vloka JD. *Reg. Anes. and Pain Med.* 2001;23(may-June supplement):38

3 Vloka JD, Hadzic A, April E, Thys DM. *Anesth. Analg.* 2001; 92:460-462

4 Wildsmith JAW, Armitage EN (Eds). *Principles and practice of regional Anaesthesia:1993(second edition) pp195-197*

Position	External Rotation		Neutral Position		Internal Rotation	
	Left	Right	Left	Right	Left	Right
Direct line of site (LOS) to sciatic n.	1	0	6	6	9	8
Direct LOS through femoral artery	3	0	3	1	1	0
Direct LOS through femoral nerve	4	4	1	0	1	1
Distance from skin to sciatic nerve	106	108	107	106	109	109
Distance from LOS to femoral artery	7	10	10	11	13	14
Distance from LOS to the femoral nerve	5	5	5	4	8	8