

FORMAT

TITLE OF THE ABSTRACT : The Supinator Muscle and the Anatomical Basis for the
Posterior Interosseous Nerve Entrapment

DEPARTMENT : Anatomy

NAME OF THE CANDIDATE : Jenny Jacob

DEGREE AND SUBJECT : M.D.

Anatomy

NAME OF THE GUIDE : Bina Isaac

OBJECTIVES: (1) To study the structures that cause compression of posterior interosseous nerve (2) To establish landmarks for the treatment of posterior interosseous nerve entrapment

METHODS: 40 upper limbs were dissected. The nature of arcade of Frohse, distal border of superficial layer of supinator and superomedial margin of extensor carpi radialis brevis were studied. The distances of the compressive structures from humeroradial joint line and transepicondylar line were determined. The morphometry of the arcade of Frohse and pennation angles were determined. In order to locate the posterior interosseous nerve, distances of the nerve from lateral epicondyle and radial

head were measured. The measurements made were compared between the sides of the specimen using paired t-test.

RESULTS: The most common type of the structures causing compression were tendinous arcade of Frohse (47.5%), muscular type of distal border of supinator (42.5%) and muscular type of superomedial margin of extensor carpi radialis brevis (58 %). Distance between the humeroradial joint line and the proximal and distal borders of the superficial layer of the supinator were 27.62mm and 90.27 mm respectively. Distance between the transepicondylar line and the proximal border and distal borders of the superficial layer of the supinator were 42.05mm and 105.62 mm respectively. The length of the arcade of Frohse was 7.32 mm and width was 12.35 mm. Pennation angle of the superficial layer of the supinator was 32.62° and of the deep layer was 47.27°. Distance between the lateral epicondyle and the entrance and exit of PIN into supinator were 61.47 mm and 85.60 mm respectively. Distance between the radial head and the entrance and exit of PIN into supinator were 25.25 mm and 69.45 mm respectively.

Keywords: supinator muscle; arcade of Frohse; distal arcade of supinator muscle; posterior interosseous nerve; entrapment neuropathy