

## Appropriate Depth of Needle Insertion during Rhomboid Major Trigger Point Block

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**Abstract :** Objective: To investigate an appropriate depth of needle insertion during trigger point injection into the rhomboid major muscle. Methods: Sixty-two patients who visited our department with shoulder or upper back pain participated in this study. The distance between the skin and the rhomboid major muscle (SM) and the distance between the skin and rib (SB) were measured using ultrasonography. The subjects were divided into 3 groups according to BMI: BMI less than 23 kg/m<sup>2</sup> (underweight or normal group); 23 kg/m<sup>2</sup> or more to less than 25 kg/m<sup>2</sup> (overweight group); and 25 kg/m<sup>2</sup> or more (obese group). The mean  $\pm$  standard deviation (SD) of SM and SB of each group were calculated. A range between mean+1 SD of SM and the mean-1 SD of SB was defined as a safe margin. Results: The underweight or normal group's SM, SB, and the safe margin were 1.2 $\pm$ 0.2, 2.1 $\pm$ 0.4, and 1.4 to 1.7 cm, respectively. The overweight group's SM and SB were 1.4 $\pm$ 0.2 and 2.4 $\pm$ 0.9 cm, respectively. The safe margin could not be calculated for this group. The obese group's SM, SB, and the safe margin were 1.8 $\pm$ 0.3, 2.7 $\pm$ 0.5, and 2.1 to 2.2 cm, respectively. Conclusion: This study will help us to set the standard depth of safe needle insertion into the rhomboid major muscle in an effective manner without causing any complications.

**Keywords :** pneumothorax, rhomboid major muscle, trigger point injection, ultrasound

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