

CHAPTER III

RESEARCH METHODOLOGY



1. Target Population and Sample Population

Formalin preserved Thai adult cadavers

2. Inclusion Criteria

- Formalin preserved Thai adult cadavers
- No impairment of the lateral thoracic wall

3. Exclusion Criteria

- The cadavers have impairment of the lateral thoracic wall.
- The cadavers infected AIDS, hepatitis B virus and severe diseases.

4. Sample Size Determination

In pilot study, the mean perforator in 20 cadavers was 1.8 ± 0.8 perforators.

Continuous response variable and one-sample problem

$$\begin{aligned} N &= Z^2_{\alpha/2} \sigma^2/d^2 \\ \text{Where;} \quad Z_{\alpha/2} &= Z_{0.05/2} = 1.96 \text{ (two tail) at 95\%CI} \\ \sigma^2 &= \text{Variance} = (1.8)^2 \\ d &= \text{Acceptable error} = 0.2 \\ \text{so;} \quad n &= Z^2_{\alpha/2} \sigma^2/d^2 \\ n &= (1.96)^2(0.8)^2/(0.2)^2 \\ n &= 57 \end{aligned}$$

∴ The sample size was at least 29 cadavers.

5. Materials

- Formalin preserved Thai- adult cadavers
- Probe
- Forceps
- Operative knife
- Operative scissor
- White board & pens
- Latex examination gloves
- Vernier caliper

6. Methods

Thirty preserved cadavers were dissected for this anatomic study. To facilitate dissection each cadaver was placed in the supine position with the shoulder abducted to 90 degrees. First step, skin incisions were opened approximately 2 cm above the axillary line and an incision is made down to the fascia starting at the tendinous insertion toward the iliac crest, superior border incision was made down from the dome of axilla to the lateral border of the scapular and inferior border was made down from the superior border of the iliac crest to the lateral border of the iliac crest. From this incision the skin and subcutaneous tissues were elevated above the fascia toward the free lateral and upper margins of the latissimus dorsi muscle. Next step, free lateral border of the latissimus dorsi muscle was detached from the lateral thoracic wall, which the thoracodorsal vessels and nerve were entered the deep surface of the latissimus dorsi muscle. The thoracodorsal artery and thoracodorsal nerve were dissected and identified. The perforating vessels of the lateral branch of the thoracodorsal artery with a diameter of 0.5 mm or more were identified. The thoracodorsal artery pedicle was then traced to the perforator until it penetrated the muscle. The following anatomical features were studied and measured:

(1) The numbers (greater than 0.5 mm in diameter), the lengths (distance from the origin to penetrate the muscle), the locations (from the dome of the axilla), the diameters (at its origin) and the patterns of the perforator of the lateral branch of the thoracodorsal artery.

(2) Neurovascular branching patterns are studied and classified the frequency of each pattern is recorded.

(3) The location of the direct cutaneous perforator (distance from the bifurcation) of the thoracodorsal artery.

(4) The relationship of the thoracodorsal vessel & thoracodorsal nerve.

The photographs, dissection notes were analyzed.

Statistical Analysis

Statistic analysis was undertaken with SPSS version 9.0 .The data of measurements were analyzed by descriptive statistic as means, standard deviation, ranges and percentages.