

術前使用 64 切電腦斷層血管攝影偵測大腿前外側皮瓣穿通支診斷效果之實證分析

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## Diagnostic Performance of Preoperative 64-Section Multidetector CT Angiography in Identifying the Cutaneous Perforators in the Anterolateral Thigh Flap: An Evidence-Based Review

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**Purpose:** The anterolateral thigh (ALT) flap has become a workhorse flap in the reconstruction of various defects. Because of its variable vascular anatomy, preoperative assessment of perforators has been performed using several devices. Among them, CT angiography combines the use of X-rays with computerized analysis of the images. The number of detector rows determine how fast a scan can be performed and to what extent details can be revealed. The introduction of 64-section multidetector CT angiography (CTA) has allowed the clinicians to experience excellent resolution and high accuracy. To determine the diagnostic performance of the 64-section multidetector CTA in identifying the cutaneous perforators in the ALT flap, we conduct a systematic review for trials comparing the 64-section multidetector CTA with intraoperative findings as reference standard.

**Materials and Methods:** We searched the PubMed database from January 2001 to February 2012. We used the following key words: anterolateral thigh flap and computed tomography angiography. Two reviewers independently extracted data in two steps: titles and abstracts, and then the full text articles. This search was supplemented by a review of reference lists of potentially eligible studies. We excluded studies not using the 64-section CT, operated or CTA cases less than 3, duplicated reports of same patient population, and studies with incomplete or no presentation of intraoperative findings. Perforators found both in the 64-section multidetector CTA and intraoperatively were defined as true positive. Perforators found in CT angiography but not identified intraoperatively were defined as false positive. Additional perforators found intraoperatively were regarded as false negative.

**Results:** Three studies were included for a total of 60 ALT flaps studied. The 64-section multidetector CTA identified a total of 125 perforators, and all were identified intraoperatively (ie. true positive = 125). It did not show perforators that were not actually present intraoperatively (ie. false positive = 0). There were a total of 27 additional perforators found intraoperatively (ie. false negative = 27). The pooled false negative rate as for the presence or absence of the perforators is calculated to be 17.8% (27/152). The pooled sensitivity is 82.2% (95% confidence interval, 75.0% – 87.8%).

**Conclusion:** The authors concluded that the 64-section multidetector CTA may be considered only as an optional instrument in identifying the cutaneous perforators of the ALT flap. Mapping and design of the ALT flap should not rely completely on the 64-section multidetector CTA findings.

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