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Accuracy of pulse oximeter perfusion index in thoracic epidural anesthesia under basal general anesthesia.

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OBJECTIVE: To observe the change of PVI after thoracic epidural block on the basis of general anesthesia.

METHODS: In 26 patients undergoing elective upper abdominal operations, changes of SVI, PVI, SVV, PPV and CVP were monitored immediately before and 10 minutes after T8-9 thoracic epidural anesthesia on the basis of general anesthesia. The definition was that patients with ΔSVI greater than 10% belonged to response group to epidural block.

RESULTS: Before epidural block, the PVI, SVV and PPV baseline values in patients of response group were significantly higher than those in patients of non-response group. PVI, SVV and PPV after epidural block were significantly higher than immediately before epidural block ($P < 0.001$). PVI, SVV and PPV baseline values immediately before epidural block were positively correlated with ΔSVI; the correlation coefficients were 0.70, 0.71 and 0.63, respectively, $P \leq 0.001$. The optimal critical values for PVI, SVV and PPV to predict response to T8-9 gap epidural block under general anesthesia were 16% (sensitivity 80%, specificity 92%), 13% (sensitivity 90%, specificity 62%) and 12% (sensitivity 90%, specificity 77%), respectively.

CONCLUSION: PVI can be used as a noninvasive indictor to monitor volume change after thoracic epidural block on the basis of general anesthesia.