

Pulse Oximeter Perfusion Index as a Measure for the Effect of Stellate Ganglion Block in Patients with Complex Regional Pain Syndrome (CRPS).

Abt G., Pawlik M.T., Ittner K.P. 2008; *Proceeding from the Annual World Congress of Anesthesiology*.

Introduction

Patients suffering from CRPS frequently require sympathetic block of the stellate ganglion to reduce pain and swelling and to improve dermatrophia¹. In the past successful blockade could be verified only by temperature difference of both upper extremities. The perfusion index (PI) in the Masimo SET pulse oximetry system reflects the strength of a patient's perfusion at the monitored site by calculating the relation between pulsatile and constant absorbed light and has been used for similar questions². Perfusion at the extremities is known to be affected by vasoconstriction and vasodilatation as stimulated by temperature and anesthetics. In a preliminary study we examined whether perfusion was affected by stellate block using prilocaine 1% and, if so, whether the PI could serve as an indicator of successful blockade.

Methods

After approval of the local ethic committee we monitored PI in 5 consecutive patients undergoing ganglion stellate block due to a clinically diagnosed CRPS. Measurement was performed at the middle finger of the affected extremity before and 30 minutes after the blockade.

Results

PI value showed a significant increase 412 % (median) after 30 minutes ($P < 0.05$, Wilcoxon test). Ganglion stellate blockade after CRPS remains a controversial therapy (3). Temperature rise is considered to predict a good pain response, but may clinically difficult to obtain. PI reflects as an objective measurement changes in the pattern of blood flow.

Conclusion

Perfusion index is significantly increasing after ganglion stellate block with local anesthetics. Measurement of perfusion index appears to be a useful tool to demonstrate both accuracy of the performed block and response of the patient's sympathetic nerve system to the regional anesthesia.

1) Ackerman WE, South Med Journal, 2006; 2) Kakazu CZ, Anesthesiology, 2005; 3) Nelson DV, Clin J Pain, 2006